How do readers interact with hypertext fiction?
An empirical study of readers' reactions to interactive narratives.

Volume 1: The thesis (this volume)
Volume 2: Appendices

SUBMITTED BY JAMES ARTHUR POPE

Submitted in partial fulfilment of the requirements of Bournemouth University for the award of Doctor of Philosophy

Degree awarded by Bournemouth University

Submitted November 2007

Copyright Notice

This copy of the thesis has been supplied on condition that anyone who consults it is understood to recognise that its copyright rests with its author and due acknowledgement must always be made of the use of any material contained in, or derived from, this thesis.

Contents

Abstract Page viii

Part One: The debate and the issues to be investigated

Chapter One: Introduction **Page 1**
1.1 What is interesting about hypertext fiction? Page 1
1.2 The debate and the need for study Page 7
1.3 Key questions of this study Page 11
1.4 Research aim and objectives Page 13
1.5 Summary Page 13

Chapter Two: The Pleasures of Reading Fiction **Page 15**
2.1 Why we read fiction Page 15
2.2 How we read Page 19
2.3 Narrative structures Page 30
2.4 Summary: conceptual framework for an empirical study of reading Page 35

Chapter Three: The Pleasures of Reading Hypertext Fiction **Page 37**
3.1 Narrative tradition and hypertext Page 37
3.2 Narrative in the interactive environment Page 41
3.3 Reading and hypertext Page 47
3.4 Summary Page 57

Chapter Four: The Interface **Page 59**
4.1 Overview Page 59
4.2 The digital book Page 60
4.3 Hypertext fiction and the interface Page 69
4.4 Interface design and navigation Page 75
4.5 Summary Page 81

Part Two: The Empirical Study

Chapter Five: Methodology **Page 83**
5.1 Overview of the approach to empirical reader response research Page 83
5.2 Methods Page 87
5.3 Procedure Page 94
5.4 Participant readers Page 96
5.5 Selected hypertexts Page 98
5.6 Analysis Page 108
5.7 Matching research aim and objectives to methodology Page 112

Note on Reader Responses To Hypertext Fiction **Page 114**

Chapter Six: Reading **Page 115**
6.1 *afternoon, a story* Page 114
6.2 *LOveOne* Page 119
6.3 *253* Page 123
6.4 *These Waves of Girls* Page 129

6.5 *The Virtual Disappearance of Miriam* Page 132
6.6 *Amelie* Page 135
6.7 *Of Day, Of Night* Page 137
6.8 Summary and discussion Page 141

Chapter Seven: Narrative **Page 148**
7.1 *afternoon, a story* Page 148
7.2 *LOveOne* Page 154
7.3 *253* Page 158
7.4 *These Waves of Girls* Page 160
7.5 *The Virtual Disappearance of Miriam* Page 162
7.6 *Amelie* Page 164
7.7 *Of Day, Of Night* Page 167
7.8 Summary and discussion Page 169

Chapter Eight: Navigation **Page 178**
8.1 *afternoon, a story* Page 178
8.2 *LOveOne* Page 181
8.3 *253* Page 184
8.4 *These Waves of Girls* Page 185
8.5 *The Virtual Disappearance of Miriam* Page 187
8.6 *Amelie* Page 189
8.7 *Of Day, Of Night* Page 192
8.8 Summary and discussion Page 193

Chapter Nine: Interface Design **Page 202**
9.1 *afternoon, a story* Page 202
9.2 *LOveOne* Page 205
9.3 *253* Page 207
9.4 *These Waves of Girls* Page 210
9.5 *The Virtual Disappearance of Miriam* Page 214
9.6 *Amelie* Page 218
9.7 *Of Day, Of Night* Page 220
9.8 Summary and discussion Page 224

Chapter Ten: Conclusions **Page 232**
10.1 How is hypertext fiction read? Page 233
10.2 Does hypertext fiction present narratives that satisfy readers' expectations of what a 'good story should offer? Page 236
10.3 How does the interface influence the reader's experience of the narrative? Page 238
10.4 Evaluation of theory that can help in developing hypertext fiction Page 240
10.5 Limitations of this study Page 244
10.6 Extensions and developments of this research Page 246
10.7 A future for hypertext fiction? Page 249

References **Page 250**

Appendices: **in volume 2**

One: *Afternoon, a story* **Pagel**

Think-aloud transcripts:

DA/T	Page 2
DL/T	Page 5
HC/T	Page 8
KH/T	Page 11
RS/T	Page 13
SB/T	Page 16
Collated Questionnaire A/Q	Page 18

Discussion transcripts:

A1/D	Page 23
A2/D	Page 32
RS/D	Page 42

Two: *LOveOne* **Page 48**

Think-aloud transcripts:

AL/T	Page 49
CL/T	Page 51
JP/T	Page 57
KL/T	Page 63
MH/T	Page 66
RF/T	Page 73
Collated Questionnaire L/Q	Page 79

Discussion transcripts:

L1/D	Page 84
CL/D	Page 96
KL/D	Page 99

Three: *These Waves of Girls* **Page 111**

Think-aloud transcripts:

CV/T	Page 112
EC/T	Page 115
KC/T	Page 117
RG/T	Page 120
Collated Questionnaire W/Q	Page 122
Discussion transcript W/D	Page 127

Four: *253* **Page 137**

Think-aloud transcripts:

JC/T	Page 138
JH/T	Page 142
JV/T	Page 147
PC/T	Page 149
Collated Questionnaire 253/Q	Page 154

Discussion transcripts:

253-1/D	Page 159
253-2/D	Page 173

Five: ***The Virtual Disappearance of Miriam*** **Page 184**
Think-aloud transcripts:
DO/T Page 185
GD/T Page 186
HO/T Page 187
LS/T Page 188
MT/T Page 190
PD/T Page 192
Collated Questionnaire M/Q Page 193
Discussion transcript M/D Page 197

Six: ***Amelie*** **Page 204**
Think-aloud transcripts:
GH/T Page 205
HF/T Page 208
KW/T Page 211
NM/T Page 215
Collated Questionnaire AM/Q Page 219
Discussion transcript AM/D Page 224

Seven: ***Of Day, Of Night*** Page 237
Think-aloud transcripts:
AP/T Page 238
BW/T Page 240
JG/T Page 242
JL/T Page 244
MP/T Page 245
RC/T Page 247
Collated Questionnaire O/Q Page 248
Discussion transcripts:
O1/D Page 253
O2/D Page 264
O3/D Page 268

Eight: Master Questionnaire MAS/Q **Page 273**

List of Illustrations

Figure 1	part of the map in *Patchwork Girl*	Page 73
Figure 2	browse device in *Inside: A Journal of Dreams*	Page 80
Figure 3	screen from *afternoon, a story*	Page 101
Figure 4	typical screen from *LOveOne*	Page 102
Figure 5	home page of *253*	Page 103
Figure 6	screen from *These Waves of Girls*	Page 104
Figure 7	screen from *Amelie*	Page 105
Figure 8	screen from *The Virtual Disappearance of Miriam*	Page 106
Figure 9	interactive map graphic in *Of Day, Of Night*	Page 107
Figure 10	what do you expect from a good read? (*afternoon*)	Page 116
Figure 11	what about the hypertext carried you along? (*afternoon*)	Page 116
Figure 12	would you say hypertext is like...? (*LOveOne*)	Page 123
Figure 13	what makes you choose to read a novel? (*253*)	Page 127
Figure 14	how do feel about reading a novel at a computer screen? (253)	Page 127
Figure 15	what do you expect from a good read? (*Miriam*)	Page 133
Figure 16	what about the hypertext carried you along? (*Miriam*)	Page 133
Figure 17	how do feel about reading a novel at a computer screen? (*Amelie*)	Page 137
Figure 18	were any of the following a problem for you? (*afternoon*)	Page 150
Figure 19	what do you expect from a good read? (*LOveOne*)	Page 155
Figure 20	what about the hypertext carried you along? (*LOveOne*)	Page 156
Figure 21	were any of the following a problem for you? (*Waves*)	Page 161
Figure 22	what about the hypertext carried you along? (*Miriam*)	Page 163
Figure 23	what do you expect from a good read? (*Amelie*)	Page 164
Figure 24	what about the hypertext carried you along? (*Amelie*)	Page 165
Figure 25	were any of the following a problem for you? (all)	Page 170
Figure 26	screen from *Amelie* showing film strip navigation bar at top	Page 190
Figure 27	comparing orientation with apprehension of story	Page 196
Figure 28	*The Mobius Case*, showing timeline at top of screen	Page 200
Figure 29	how did you select links? (*Miriam*)	Page 217
Figure 30	how did you select links? (*Amelie*)	Page 220
Figure 31	how did you select links? (all)	Page 231
Figure 32	the hypertext reader	Page 235

Part One

The debate and issues to be investigated

Chapter One
Introduction

'Every expressive medium has its own unique patterns of desire; its own way of giving pleasure, of creating beauty, of capturing what we feel to be true about life; its own aesthetic.' (Janet H. Murray 1997b, p94)

1.1 What is interesting about hypertext fiction?

- *The stimulus for a research project*

Hypertext fiction is delivered electronically via digital media, usually a personal computer, usually running on Windows or Macintosh operating systems. It is often non-linear in narrative structure, and offers varying amounts of interactivity for the reader via the human-computer interface. Hypertext fiction has been available since 1987 when Michael Joyce published *afternoon, a story*, on a floppy disk. This publication meant that anyone (with a computer) could read an entirely new kind of novel.

Afternoon has been widely praised, and was called 'a lush reading experience' by hypertext theorist and advocate George Landow (2004), and yet it is hardly heard of beyond academia. In a search of two well-known Web book markets (Abebooks and Amazon), *afternoon* was found in only one 'real' bookshop in the whole of the USA, and not at all in the UK.

Michael Joyce has said of Shelley Jackson's hypertext novel *Patchwork Girl* (1995) that it is 'spectacular in every sense... This is a work of dream and desire and defying boundaries, an electronic collage, a theatre of windows, and a cyborg song of communion and reunion' (Joyce 1997). However, Shelley Jackson is better known for her children's book illustrations than she is for her 'brilliant' (Landow undated online) hypertext.

Writing in *The New York Times Book Review*, critic 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 online).

The most productive single publisher of hypertext fiction, Eastgate Systems, based in the USA, 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). Therefore, Miller is not exactly right – hypertext fiction is read, but by very small numbers of readers world wide.

So, one simple, instinctive starting point for this study is the awareness that, despite the excited fanfare and discussion, and a dynamic creative output from writers which continues to flourish at the time of writing this thesis, hypertext fiction appears to be of interest largely only to 'experts': academics, journalists, and writers themselves. 'Ordinary' readers appear to be scarce, and that raises interesting questions. Reading fiction is a pleasurable experience, for many cultural and psychological reasons (Barthes 1973; Brooks 1984; Nell 1988; Turner 1996), and yet reading this particular kind of fiction appears not to give pleasure outside of a specialised community of readers. It is not clear why should this be, given the huge audience enthusiasm for printed fiction, and for computer and console games, which, like hypertext fictions, present narrative with interactivity and are delivered via digital media.

Is it simply that hypertext fiction is 'difficult', as perhaps experimental literary fiction in print (Modernism for example) might be perceived to be? That is possibly a reason, but the content of many hypertexts is not overtly 'highbrow'. *These Waves of Girls* by Caitlin Fisher deals with a teenage world of friends, first love, sexual exploration: one could imagine that it might be a spark for many commercially viable 'teenage' 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 online). But it remains 'stuck' in a sort of twilight zone, apparently known only to a few 'insiders', despite its easy availability on the web.

Afternoon itself, though written in a self-consciously literary style, has all the ingredients of a mainstream novel: it concerns one man's quest to find out if the car wreck he has seen on his way to work has involved his wife and son. It is dramatic and intriguing, being part-detective story, part-adult drama. It is surprising then, that some hypertext authors have not 'broken through', or 'crossed over' to gain wider recognition with a reading public. But this has so far not been the case, as seems to be borne out by Eastgate's sales figures.

Perhaps a more realistic but also optimistic view of hypertext fiction's future comes from Shelley Jackson:

> Most readers are reading for a familiar experience, one that hypertext doesn't provide... A mass conversion to hypertext fiction would mean a mass relinquishing of treasured habits, and that's not going to happen all at once. On the other hand the internet is making the following of links pretty ordinary for a lot of people (Jackson, in Amerika 1998 online).

Poor sales and a low public profile might not be sufficient motivation to conduct a research project, but Jackson's comment contains an important clue to hypertext's current status: despite being around for twenty years, it *is* still in its embryonic stage, both in terms of its relationship to its audience and in the development of its medium. And yet, it is a significant new art form because of the highly innovative narrative structures and delivery platforms it embraces (Bolter 2001; Douglas 2000; Landow 1997; Jackson 1998; Kendall and Réty 2000; Murray 1997a, 1997b). Hypertext fiction merits systematic study in this early phase of its growth, and this study proceeds from a belief that hypertext fiction is not doomed to remain a speciality of avant-garde writers and academia.

Furthermore, this researcher's experience as a teacher of interactive narrative at Bournemouth University since 2001, convinced him that hypertext fiction can be as engaging, immersive, and enjoyable as fiction in print, but also that there are significant

barriers to reading pleasure, embedded in the very form of hypertext. That position is supported, as we will see in the following chapters, by the literature (Bolter 2001; Douglas 2000; Landow 1997; Kendall and Réty 2000; Miall 1998, 1999; Murray 1997a, 1997b). In classes on non-linear and new media narrative, students were asked to explore narrative possibilities, investigating existing narratives in a range of media, including interactive forms such as games and hypertext; they were also tasked with creating their own, original hypertext fiction, sometimes as adaptations of existing non-interactive stories.

Data collected informally through these classes in 2003 highlighted many of the joys, and extant problems of hypertext which this study examines in depth. There was obvious potential in the hypertexts studied to generate interest and reading commitment amongst students. Students commented along a continuum of reactions:

> 'the mind of the reader works best to figure out things in a linear fashion, but to abandon this buried need is to truly engage, I feel';
> 'This hypertext displays tremendous skill and execution in not only the writing but the uses of images';
> '...it's hard to get excited ... when you are distracted by such bad graphics and interface';
> 'A story that has no real beginning, middle or ending really doesn't appeal to me in the slightest; when I read a book or watch a film I generally want closure otherwise I'm not really entertained' (unpublished student feedback 2003).

Overall, conclusions from these students were very mixed, ranging from a genuine interest in an emerging new form, to flat dismissal of what was seen as a technical and artistic failure. It became clear though that key issues revolved around the structures of the stories being read, where students were confused by unfamiliar plot devices and apparent lack of closure for example, and the perceived success or otherwise of the interface, and its effect on navigation and story delivery.

Thus, at an early stage in the formulation of this research project, it was clear that though hypertext had the power to capture a reader's interest, its innovative narrative

structures and its unfamiliar medium might well be important factors in blocking it from wider audiences.

- *'Hypertext': a definition for this study*

Hypertext theorist and software designer Ted Nelson is credited with inventing the term 'hypertext', calling it 'non-sequential writing' (Nelson 1981). In a lecture Nelson gave at Bournemouth University in 2001, he indicated that the concept of hypertext is as much a political idea as a purely literary one. For Nelson, the belief is that ideas are not the sole domain of authors, that texts can be created by everyone. This idea is exciting in itself, and important for fiction and for this study, because it suggests that the reader has a role to play beyond the acceptance of the narrative as the author delivers it, and this concept is crucial for many of the advocates of hypertext fiction: it is equally significant for those who feel that hypertext fiction is a dead end. Philosophy and technology have combined in hypertext fiction to bring together the roles of the writer and the reader in a way that the bound, printed, linear book could not allow.

Here is another definition, from *The Electronic Labyrinth* website: 'Hypertext is the presentation of information as a linked network of nodes which readers are free to navigate in a non-linear fashion' (Keep et al 2000).

If we combine this definition with Nelson's concept, we can easily see that the manifestation of a hyper-text must be as much to do with the reader's activity as it is to do with the author's design. Hypertext fiction is composed by the author, but read in a sequence that the author cannot entirely control.

These definitions frame hypertext as a technology and a philosophy of writing and reading. To bring the key concepts of these definitions together, for the purpose of this research project, hypertext fictions might therefore be described as *stories delivered electronically in such a way that the reader is presented with an apparently unfixed narration of events to be read in many potential sequences of the reader's choice.*

This study will attempt to ascertain what kind of choice hypertext fiction really does offer the reader, and especially if this apparent freedom is a pleasing part of the 'new' reading experience promised by hypertext.

- *Defining hypertext fiction*

There is no question that the very title 'hypertext fiction' could be challenged. There are many expressions to cover the interactive, non-linear, multimedia stories that are appearing via the publisher Eastgate Systems, and various websites.

Michael Joyce's *afternoon, a story* is certainly a text-based piece. Jill Walker calls it an 'hypertext narrative' (Walker 1999). Published in 1987, it is necessarily limited in its presentation by the relative simplicity of the delivery software: its story content is delivered purely via type, in simple windows, using a very small graphic interface for navigation. Similarly, Stuart Moulthrop's *Victory Garden* (1991) is largely type on a plain background, but this hypertext features a map graphic that allows the reader some visual orientation.

Dreaming Methods (http://www.dreamingmethods.com) is a website showcasing interactive stories by Andy Campbell. These stories present the reader with highly visual screens in which text to be read is just part of the mise-en-scene. Using a film term to describe what the viewer sees is appropriate in this case, because there is animation, graphic elements, some of which can be clicked to follow links, and sound. These pieces are hypertextual, and they are fictional, but author Andy Campbell calls them 'digital fictions'. Visually they are quite different from the Eastgate publications of Joyce and Moulthrop, being more akin to the multimedia designs found in games or DVD menus, for example.

Janet Murray in *Hamlet on the Holodeck* (1997b) discusses a very wide range of digital, interactive storytelling, including MUDs, which are text-based, user-centred narratives created online. She uses terms such as 'electronic narrative', 'hypertext fiction' and 'digital narrative'. Readers are also called users, or 'interactors' by Murray. Though Murray herself does distinguish between different kinds of non-linear and interactive stories, it is clear that the boundaries are blurred: a game is likely to be 'goal-directed', include the keeping of scores, and involve a contest or struggle between the game-player and characters or forces within the narrative (Murray 1997b, pp 140-143).These would not be features of the hypertext fictions published by Eastgate, or indeed the visual,

multimedia narratives of *Dreaming Methods*. However, whatever the precise definition of the genre or format, Murray's analysis makes it clear that interactivity is a key and crucial element in these 'new' stories.

Finally, it is worth noting that Shelley Jackson, author of the highly regarded hypertext *Patchwork Girl* (1995) uses the term 'hypertext novel' (Jackson 1997a), even though *Patchwork Girl* contains significant graphic elements.

This study will use the expression 'hypertext fiction' in order to emphasise the predominance of text and reading in the pieces which will be examined. Hypertext fiction here 'consists of words, characters, plots – all the constituents of the Great Novel' (Douglas 2000, p7-8). It is admittedly a fairly arbitrary definition, and there is no wish here to attempt to establish that some hypertexts are of literary merit and some not. The development into digital interactive environments of *stories that can be read* is the core interest here. It is acknowledged however that in this digital writing space (Bolter 2001), writers can and will include all kinds of stimuli to entertain the reader/interactor, and the empirical study will consciously select hypertexts with varying mixtures of text and multimedia elements: text nonetheless will be the main storytelling code here, and this study will therefore exclude digital narratives which owe more to game genres and conventions than they do to literature. It also excludes non-interactive narrative texts which happened to be published online.

1.2 The debate and the need for study

- *Hypertext good/hypertext bad*

Despite the lack of general awareness of hypertext fiction amongst the reading public, in the academic environment it is of considerable interest. Even at the earliest point in a project to examine hypertext fiction's qualities, it would be obvious to any researcher that hypertext fiction has generated and is still generating a very large amount of discussion and study. Not only has there 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). Discussion is dynamic and continuing: what hypertext is, what it is good for, why it fails to engage, why we should know more about it, what it does to narrative forms, how it changes the act of reading – these are all areas alive in the literature.

It is fairly easy to summarise the debate, because in the literature, the discussion polarises: 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 1997a; Kendall and Réty 2000; Murray 1997a,1997b, 2001) with an almost guaranteed fruitful future; or hypertext fiction is a literary experiment doomed to failure because it confuses and disengages the reader from his/her imaginative enjoyment (Barrett 2000; Birkerts 1997; Miall 1999; Miall and Dobson 2001; Selig 2000). Disagreement amongst 'experts' is a promising starting point for any research project.

Creative artists such as Shelley Jackson and Robert Kendall clearly believe that hypertext fiction is not to be dismissed as a passing phase (Jackson 1997a; Kendall and Réty 2000), and although Eastgate Systems are the only 'publisher' charging readers for hypertext, there is a very healthy web-based hypertext writing community (Miall 2003), an ongoing academic and creative interchange (for example, the annual ACM Conference on Hypertext, and the *dichtung-digital* online journal), and academic papers whose authors are fascinated with its possibilities. Such wide ranging interest and creativity suggest that a systematic study would be of value to a substantial community of scholars, writers and readers.

Jeff Conklin, writing in 1987, says that hypertext 'still has enough rough edges that no one is really sure that it will fulfil its promise' (p40). Since 1987, hypertext software has developed enormously, and some of the rough edges Conklin refers to have been smoothed out, but hypertext fiction still presents challenges and problems as well as huge potential, for writers and readers.

- *The interface*

In a survey of thirty research studies into hypertext usability (user friendliness of hypertext systems and interfaces) Jakob Nielsen (1989) noted, amongst other findings, that online fiction was perceived by readers to 'perform' 24% as well as print fiction. Nielsen's special interest is in how the human-computer interface organises and delivers navigation tools to the user: given that hypertext fiction must run via an human-computer interface, it is surprising that very little is said in the hypertext literature about interface design and its influence upon narrative structures and the reading experience. Nielsen's survey was carried out in 1989, soon after the release of *afternoon*, but much more recent literature reports similarly, that hypertext fiction doesn't 'work' (Blanton 1996, Birkerts 1997, Miall 1998, Selig 2000), though the reasons put forward are typically just the critic's personal view.

In the literature around hypertext fiction, there is mention of the interface and related navigation factors, for example in Landow (2004), and in Kendall and Réty (2000), but only one empirical, case-specific study of the relationship between hypertext fiction, interface design and the experience of hypertext reading (Gee 2001). And yet, the interface is unmissable at every turn of the page when encountering an hypertext. A seeming highly significant gap in the current state of the debate needs to be addressed.

- *The reading experience*

It is clear from the literature that much of the debate is based on opinion and/or theoretical position, rather than empirical research concerning reader experience, which is not to say that the debate is not interesting or enlightening in itself; indeed, the academic debate itself emphasises that there may well be information about the ways in which readers react to hypertext that is not being considered, either because studies have so far been too restricted in ambition, or because the data simply has not been gathered yet. Kim Gee (2001, p 4) points out that 'little empirical research has been done on how users interact with a hypertext narrative'. David S. 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).

Within the literature of the debate, the reactions of 'ordinary' readers (as opposed to academics, experts or journalists) to hypertext fiction are significantly under-represented. One outspoken opponent of hypertext, Laura Miller, declares that 'what the laboratory of hyperfiction demonstrates... is how alienated academic literary criticism is from actual readers and their desires' (Miller 1998). There may be long-standing reasons for this apparent lack of interest in the reader's experience: Elizabeth Freund, in her 1987 study of reader-response criticism, suggests that the nature of reading (its inherent privacy) combined with a tradition in literary criticism of enshrining the work of literary art 'as the prime mover of all meanings and emotions' (Freund 1987, p4) had positioned the reader and reading at the bottom of a hierarchy of author, art, critic and reader. Reader-response criticism sought to reposition the reader, and many of the advocates of hypertext fiction argue from the standpoint that the reader *is* crucially important in the creative and critical processes. Still, Miller's point is warranted: there is a lack of empirical evidence to support the theory (Gee 2001; Kendall 1998; Livingstone 2004; Miall 2003; Nielsen 1990; Smart et al 2000), on both sides of the debate.

Because hypertext is developing rapidly, and since each new software product offers new creative potential (not to mention new possibilities for reader disorientation!), and is building a substantial repertoire of styles, it is the contention of this researcher and many writers in the literature (Gee 2001; Kendall 1998; Miall 2003; Smart, et al 2000) that the reading of it merits systematic investigation. Karin Wenz (1999, p7) suggests that we need 'more open models of reading' which take into consideration reading alongside its electronic counterpart, interactivity. A study which focuses on readers can bring together several aspects of the hypertext debate.

In terms of a study of digital, interactive fiction, thinking about the philosophy and technology of hypertext causes us to question exactly how readers might feel when asked to provide more than the familiar input of reading and imagining: now, in hypertext fiction, readers are asked to manipulate the interface, make conscious and physical choices about which characters they are interested in or which events they are fascinated by. It is no longer an unconscious, effortless procedure of page turning and allowing the

author's vision to wash over the reader's imagination, Nell's ludic reading (1998): now the reader has to 'wake up' from his or her daydream and decide whether to activate this hotspot or follow that link. Espen Aarseth calls hypertext fiction 'ergodic', meaning that 'nontrivial' work is required to trace the narrative's path (Aarseth 1997, p1): this concept of reading as containing work might also be a clue to understanding some of the apparent problems with which hypertext presents readers. If the 'average' reader reads for pleasure what will he/she make of a reading activity that involves conscious effort?

Thus, the central motivation for this study is the need to understand how readers are reacting to hypertext fiction when indeed they do come across it: if we can learn something of how readers interact with hypertext fiction we may be able to better understand what engages, absorbs and even thrills, and what hinders and blocks enjoyment. There is support for this proposition in the field of literary and reader studies, as well as computer usability studies, as will be shown as this study progresses.

1.3 Key questions of this study

There is much support in the literature for the importance of stories to human beings (Richards 1924; James 1934): Peter Brooks (1984) argues that stories allow us to attempt to give meaning to our lives. Indeed Brooks uses the psychoanalytic work of Sigmund Freud as a framework for a discussion of narrative plot. Freud contended that life is a narrative and that understanding our own personal narrative is the key to a healthy mental state. We know as readers ourselves that to read fiction is enjoyable, that it can change our conscious state (Nell 1998) so that we become lost in its created world. Thus, the first question needing to be addressed is:

- *Can hypertext narrative, with all its newness and experimentation, generate such reading pleasure? What quality of aesthetic enjoyment do readers experience when they read hypertext fiction?*

There is plenty of theory, but a lack of empirical study on readers of hypertext. More empirical study is required (Kendall 1998; Livingstone 2004; Miall 2003; Smart et al. 2000). We need to know more about what stimulates pleasurable reading and what

blocks readers of hypertext, particularly if writers are to move forward with knowledge of their audiences' reactions to the emerging and as yet unfixed conventions of hypertext storytelling (Miall 2003; Murray 1997b; Petersen 1998). There is a tradition of empirical 'usability' testing in software and game design, and some history of studies of readers in the field of literature studies (e.g Holland 1975); but there is not yet an established reader-response tradition in studies of hypertext fiction. A merging of traditions will help us to understand a new form (Livingstone 2004), and so this study will combine theories of reading, theories of narrative forms, and usability testing methods derived from computing design. Important questions here are:

- *Can empirical examination drawing upon theoretical models and practical research approaches help us to understand the reading process in hypertext fiction?*
- *Could existing models of reading, and of usability testing, help writers to develop accessible and enjoyable works of interactive fiction?*

Finally, the significance of the digital platform has often been largely overlooked by critics, both supporters and opponents of hypertext fiction. However, it is clear that the physical medium for the delivery of any narrative, in print or in digital form, is influential upon the reading experience (Cavallo and Chartier 1997). In hypertext, the interface is an integral and crucial part of the narrative design, and therefore of the reading and enjoyment process (Barrett 2000; Douglas 1994; Gee 2001; Landow 2004; Miall 2003, Murray 1997b; Nielsen 1990). Again, there is a lack of empirical data available in the literature to help us understand what aspects of interface design enhance the reader's experience: 'we need more empirically supported guidelines to inform design decisions' (Smart et al 2000). Kendall (1998) points out that

> hypertext is a true hybrid of text and software, so we should expect some of the more objective concerns of software development to come to the fore in working with the medium. Yet it may not be obvious how integral these concerns can be to the writer's creative enterprise.

Thus we must ask:

- *What do readers find easy/difficult when they 'use' hypertext?*
- *How does interface design affect the reading process?*

1.4 Research aim and objectives

The above questions convert into research goals thus:

Aim

To find out how readers of hypertext fictions interact with the narrative, in terms of:

- their imaginative, aesthetic response to the fiction itself

and

- their interaction with the electronic interface.

Objectives

1. To understand how hypertext fiction is read;
2. To discover whether hypertext fiction presents narratives that satisfy readers' expectations of what a 'good story' should offer, or whether it offers something new;
3. To investigate how the interface influences the reader's experience of the narrative;
4. To evaluate how far established theories of reading and interface design can explain readers' reactions to hypertext.

1.5 Summary

There is considerable disagreement within the literature over the value and likely future of hypertext as a storytelling form, and in particular how readers are experiencing hypertext fiction. There is inadequate empirical evidence to support either side of the debate. Much opinion is simply that, and too often based on theoretical standpoint or

personal preference of reviewers and academics. It is acknowledged in much of the literature that empirical study of readers is needed.

The interface is acknowledged, if sometimes only implicitly, as a key aspect of this new literary form. It is not clear how the act of reading is affected by the additional attentional load of operating an unfamiliar interface. Where the interface *is* studied specifically, it is mostly in the field of commercial software or website development. The link between narrative and interface is badly under-represented in studies found by this researcher. Thus the need to connect reading, narrative and interface in the context of hypertext is argued.

Chapter 2 will discuss in detail the process of reading, looking at theoretical and empirical evidence; the importance to readers of reading fiction and the particular structures of fiction that influence the reading process will also be examined.

Chapter 3 transposes the conceptual framework of chapter 2 into the digital environment, looking at the narrative structures of hypertext fiction, and discussing what happens to reading when readers encounter new forms of the book and new forms of a narrative fiction.

Chapter 4 examines key aspects of interface design and considers the arguments concerning the effects of interactivity and navigation mechanisms on readers.

Chapters 5, 6,7, 8, and 9 present and analyse the data from the empirical study of readers' responses to hypertext fiction.

Chapter 10 forms conclusions from the evidence towards a new/revised model of reading incorporating the interface, for hypertext fiction; limitations of the study are included in this chapter. Guidelines for hypertext authors are also suggested, arising from the literature review and the findings and conclusions of the empirical study.

Chapter Two
The Pleasures of Reading Fiction

2.1 Why we read fiction

Why do we read narrative fiction? If we can begin to approach an answer to this question we may be able to formulate further questions that will enable us to investigate how and why hypertext fiction succeeds and/or fails to engage readers.

- *Reading gives us pleasure*

A simple common-sense view of the enduring magnetism of narrative fiction is that we read it because, simply, it is enjoyable, and there is much in the literature to support this standpoint. Employing methods from psychoanalysis to analyse readers' varying responses to literature, Norman Holland asserts that 'we enjoy literary works in a mode derived from our most primitive experience of gratified desire' (Holland 1975, p18). Holland's study argues that there is a profoundly deep-rooted pleasure gained from engagement with stories.

Wolfgang Iser speaks of the effect of being 'entangled' (Iser 1976, p131) in a narrative: the reader experiences the narrative in his or her imagination and is transported into the fictional world. Similarly, the very title of Victor Nell's *Lost In A Book* (1988) suggests his contention that the reader of fiction becomes part of a world 'outside ordinary life' (Nell 1988, p2). Echoing Holland's point, Nell argues further that we learn to be open to fantasy from a very young age, partly because of exposure to narrative in very many forms, but also because we

> long for safe places – a love we can entirely trust, a truth we can entirely believe. Fiction meets that need precisely because we know it to be false, so that we can willingly suspend our reality-testing feedback processes (Nell 1988, p 56).

Sven Birkerts argues that reading 'counters the momentum of daily living, mends the dissociated self by creating a field, a protected area' (Birkerts 1997 online). Nell's 'ludic' or 'playful' reader is absorbed, sometimes in a trance-like state so pleasurable and effortless that the outside world can be ignored, effectively disappearing (Nell 1988). Crucially, it is pleasurable for us to be so 'protected', removed into a stimulating new environment where ordinary considerations need not apply. Nell refers to some of the participants in his 1988 study as 'fiction addicts', those who read at least one novel a week (Nell 1988, p102). Caught up in the world generated by the narrative the 'readers acquire peace, become more powerful, feel braver and wiser in the ways of the world' (Nell 1988, p1).

Furthermore, there are particular psycho-physiological 'rewards' in this experience, according to Nell: reading causes arousal which can be measured in various physical manifestations, including, for instance, heart-rate. Nell finds that heightened arousal 'contributes to perceived pleasure during most-enjoyed reading' (Nell 1988, p195).

Perhaps more significantly for this study, Nell notes that the arousal drops markedly when reading finishes. This drop in arousal is very satisfying, and may account for the pleasure we feel at the end of a gripping novel when all the loose ends of excitement and anticipation are finally resolved. Nell explains:

> the powerful reward value associated with a sudden drop in activation level (after sex, or when a climber reaches a mountain peak)... now also seems applicable to the ludic reader (Nell 1988, p191).

Brooks (1984) argues that the elements of the story, offered via the plot, simultaneously delay and anticipate the desired-for ending: the more 'painful' the delay the greater the pleasure at the eventual release. This sounds very close to Nell's idea of arousal followed by satisfying sudden drop in activity, and it also connects with Barthes' use of erotic metaphors to describe the 'text of bliss' *in The Pleasure Of The Text* (1973).

One issue that the hypertext 'doubters' raise is that hypertext fiction cannot produce this effect because it denies the author the power of controlling the build-up and release of expectation and emotion (Birkerts 1997; Miall 1998; Miall and Dobson 2001): this in

turn denies the reader of the possibility to become lost in the twists, surprises and pleasing revelations of the narrative's designed progress, lessening arousal therefore.

We should finally note that Iser talks of the pleasure the reader gains in exploring the unknown, towards a sense of understanding: the reader is motivated to 'familiarize the unfamiliar' (Iser 1976, p 43), 'the unknown factors in the text... set him off on his quest' (Iser 1976, p43). Miall believes that literary texts 'defamiliarize' (Miall 2000) language and idea-structures, and thus provide a reader with uncertainty, fascination, intrigue and finally new insights (Miall and Kuiken 1999). Although Iser and Miall appear to be using similar terminology in different ways, the net result of their theorising is essentially the same: Iser is saying that fiction allows us to become familiar with unfamiliar worlds, causing us to question or review (defamiliarise) our pre-conceptions; Miall is saying that literary language and structures defamiliarise our usual conceptions, allowing is to become acquainted (familiarise ourselves) with an unfamiliar vision. This process of defamiliarisation leading to familiarisation is pleasurable: as we are presented with surprises and new visions, we enjoy the stimulation of re-thinking our own familiar worlds and engaging with unfamiliar ones, which as we read, gradually become familiar to us. This ends up being a very commonsense description of another of the pleasures which all of us who like to read fiction will know well.

- *Enjoying the challenge*

Another perspective, already implied by the ideas of Nell, Iser and Brooks outlined above, suggests that pleasure in reading might come from the challenge of uncertainty and obscurity and the subsequent intense involvement then required of the reader: Roland Barthes (1973, p14) argues that the most pleasurable text is the 'text of bliss: the text that imposes a state of loss, the text that discomforts... unsettles the reader's historical, cultural, psychological assumptions'. Pleasure can come from the interweaving of the words themselves, from the texture of the language, from the struggle to make sense of the artist's fabric, not just from the 'sequence of the utterances' (Barthes 1973, p12). Brooks follows Barthes by saying that when a reader masters all the 'pain' in a text then the textual energy pent up in that pain can be released as pleasure (Brooks 1984).

There is not necessarily a conflict between the model of reading pleasure which describes a 'lost' state (Nell and Iser) and a model of reading pleasure which suggests an intensified awareness of the artifice. Different kinds of texts do different things for different readers. Theoretically at least, reading pleasure can come from texts of many forms, and pleasure comes not necessarily only from the author's designed structure and satisfying ending, but also from the reader's entanglement in the fabric, the challenge presented by the very materials of the writer's art.

It is important here to remind ourselves that although much of the above description of reading pleasure might seem like a good fit for the kind of experience hypertext fiction could generate, some believe that reading hypertext fiction is simply not enjoyable (Birkerts 1997; Blanton 1996; Miall 1999; Miall and Dobson 2001; Miller 1998). Hypertext fiction, these opponents claim, disrupts the absorbing, self-reflective and imaginative processes of reading that Iser and Nell believe engross us in narratives and in turn give us pleasure. Birkerts feels that hypertext and its multi-media offspring will put out 'that little flame of awareness' that reading nourishes (Birkerts 1997). We will return to the hypertext objectors again in Chapter 3 when we look in detail at the literature specifically relevant to hypertext reading.

- *We need narratives*

Mark Turner, working within the field of cognitive criticism, believes that human beings are by nature literary, that our brains are inherently story-making, and that literary expression therefore springs from the human condition itself, rather than being a special, rare form of expression. Turner's position is that we are always constructing narrative: 'the mental instrument I call narrative or story is basic to human thinking' (Turner 1996, p7). Turner reverses the traditional approach of the study of literature by arguing that, so fundamental is narrative to human thinking, literature can help us to understand the human mind. Whilst it is not the intention of this project to probe deeply into the psychological working of the mind, Turner's approach flags up how deeply interconnected human beings and stories are.

Brooks and others (Richards 1924; James 1934) argue that we *need* the structures and plots of narratives to make sense of existence (Brooks 1984). Narrative 'demarcates, encloses, establishes, limits, orders' (Brooks 1984, p 4). We will look in more detail at plot in section 3.2 on narrative structures, but the following quotation sums up the importance of narrative to Brooks:

> Narrative is one of the ways in which we speak, one of the large categories in which we think. Plot is its thread of design and its active shaping force, the product of our refusal to allow temporality to be meaningless, our stubborn insistence on making meaning in the world and our lives (Brooks 1984 p 323).

Narrative is crucially important as a metaphor for life and 'plot is the structure of action in closed and legible wholes' (Brooks 1984, 91), allowing us to grasp feelings, actions, consequences and meanings in ways ordinary life does not readily allow.

2.2 How we read

- *The act of reading according to Wolfgang Iser*

In *The Act of Reading* (1976) Wolfang Iser seeks to devise a framework for mapping out and guiding empirical studies of reading (Iser 1976 page *x*): there are important concepts from Iser's model that can be helpfully applied to an understanding of the reading of hypertext. The contemporaneous work of the other well-known reader response theorist, Stanley Fish, is also referred to in this section insofar as it can help us to understand the act of reading and the reader's reaction to fiction. Key concepts from *The Act of Reading* and from Fish's important works can then be taken forward to a discussion of reading in hypertext, and into the empirical study.

Iser states that literary work has two poles: the artistic (the author) and the aesthetic (the reader). Between the two poles is a virtual place in which the author's effort and the reader's imagination come together to create the work. The work itself

must inevitably be virtual in character, as it cannot be reduced to the reality of the text or to the subjectivity of the reader, and it is from this virtuality that it derives its dynamism (Iser 1976, p 21).

The text represents a *potential* effect that is realised only in the reading process. What is important is what a text *does*, not what it means, because actually, meaning *is* experience (Iser 1976, p 53). Like Fish (1970), Iser argues that the meaning of the text is something the reader has to create: 'it is in the reader that the text comes to life' (Iser 1976, p19). The reader's experience and response to the work is central for Fish: the 'fact' of the response is 'the key to the way the work works' (Fish 1970, p 136). Similarly, Iser believes that meaning has to be found in the experience of literature, not in some artistic 'object': 'meaning is no longer an object to be defined, but is an effect to be experienced' (Iser 1976, p9). The subjectivity of the reader combined with the subjectivity of the author's thoughts gives rise to the object, which is the aesthetic experience. The reader's experience is unique to the reader, but, as Iser argues, the aesthetic object *can* be approached by researchers via the 'real reader' (Iser 1976, p27) the reader we can learn about via documentary evidence.

Iser's theory does not preclude the Fishian concept of an interpretive community (Fish 1980), indeed he acknowledges that we all read within a cultural, social, and critical context from where we have learned certain conventions of language, structure, genre etc. But for Iser, art is there to upset and destabilise our preconceptions as defined by the cultural time and place in which we read. Though Fish is interested in reading and response, he starts from fixed standards of grammar and structure, and asks that the informed reader observe and control his own personal reactions to the text. Iser's reader however is free to make what he will of the text, and Iser does not require of the reader that he be 'informed', simply that he be willing to engage. Iser says, 'one of [the work's] functions is to reveal and perhaps even balance the deficiencies resulting from prevailing systems' (Iser 1976, p13), and there is no 'ideal standard' (Iser 1976, p24) response or meaning. There are no right or wrong ways to respond, since it is likely that fiction will unsettle a reader's assumptions and perceptions, thus also leading the reader to question

previous value judgements. Fish suggests that the responsible reader should suppress his expectations and idiosyncracies so that he/she will be able to respond to the text appropriately: Iser suggests that literature will shake expectations regardless of our 'habitual dispositions', because that is what makes fiction art. Literature offers something of its own which converges in the reading experience with all that the reader brings: this explains how works of literature can speak to us across centuries, even when the norms of the interpretive community within which it was created have long since been replaced with new conventions of artistic endeavour and reception.

Neverthless, Iser does appeal to convention, and therefore perhaps implicitly accepts Fish's (1980) concept of an interpretive commonality, when he talks about the need for the utterance (spoken or written) to invoke conventions that speaker and audience understand. Iser does not make it clear how far the writer can go in breaking with convention before the utterance is no longer intelligible, but he does say that the language of literature functions by re-organising linguistic conventions and presenting them to us in unexpected ways. Fictional language 'relates to conventions which it carries with it, and it also entails procedures which.... help to guide the reader to an understanding of the selective processes underlying the text' (Iser 1976, p61). For Iser then, mutual recognition of convention is necessary up to a point, but literary texts also de-pragmatise convention (Iser 1976, p61) and frustrate expectation, providing new insights, and this is a part of what the reader gains from art and part of what he/she enjoys.

Hypertext fiction itself does the very same thing: it oscillates, uneasily at times, between at least some conventions of narrative fiction, which it must use as a starting point for story telling, and a radical unsettling of convention, which it causes by its very nature. Iser argues that texts that reproduce and confirm familiar norms (literary and social) leave the reader relatively passive, whereas if the common ground between text and reader is lessened, the reader has to become very active (Iser 1976, p84). This sounds very much like hypertext, and indeed, Douglas says that in reading hypertext, readers 'perform' the text, actualising its potential (Douglas 2000, p31). The issue at stake for this study is whether hypertext has pushed its destabilising effects too far, so that readers cannot find stimulating and pleasurable insights, finding all their expectations so

frustrated that the narrative vanishes behind the twin barriers of hyper-links and the unfamiliar interface.

- *Gaps and blanks*

Iser goes on to explain that literary texts are full of gaps: gaps are the areas of asymmetry between the text and the reader, the moments of perception that inevitably have to be supplied by the reader because he/she cannot experience the text precisely as the author experienced it. These gaps occur throughout the work, and explain how and why different readers can react to the same text so differently: each reader fills the perceptual and experiential gaps in his own way. This very indeterminacy of *any* text allows the text to communicate, 'propels' interpretation, and allows a spectrum of effects for each reader in each context and each moment in history (Iser 1976, pp165-9). The gap is a useful concept when attempting to understand the way a new art form such as hypertext might come to find its place, particularly since hypertext is so often characterised by its operational gaps as well as its semantic ones.

Iser's concept of blanks is also significant in a study of hypertext: blanks are the unwritten connections between different elements of the narrative. They are different from gaps, which are simply 'missing' understandings which the reader supplies through his interpretive imagination. Blanks are suggestions of connection:

> They indicate that the different segments of the text *are* to be connected, even though the text itself does not say so. They are unseen joints on the text, and as they mark off schemata and textual perspectives from one another, they simultaneously trigger acts of ideation on the reader's part (Iser 1976, p183).

During reading, the reader builds a consistency, progressively perceiving and pondering on blanks, filling in gaps, reacting to the convention-breaking features of the text, organising and re-organising the various perspectives offered by the narrative into a pattern which evolves, as in Fish's view, over time (Iser 1976, p149). The work cannot be grasped in one piece instantaneously, it has to be processed. Reading is 'cybernetic in

nature… meaning gathers meaning in a kind of snowballing process' (Iser 1976, p67). Blanks are a stimulus to imaginative engagement.

Blanks might appear at first glance to be very similar to hypertext links: links are physical manifestations of blanks which in print cannot be seen. Links are a crucial part of the debate in hypertext reading because they either represent freedom from constraints for the reader, or they represent a limiting of imagination, forcing connections where the reader might not otherwise see them. In Chapter 3 the impact of hyper-links will be discussed at length, but here it is sufficient to note that the link has been called the carrier of meaning (Calvi 1999) in hypertext. For Iser, the blank is one of the indeterminacies that energise the imaginative response and thus the aesthetic experience. We will need to examine whether links do the same, or whether as Miall (1998, 1999) believes, they inhibit the aesthetic experience of the reader. Interestingly, Iser refers to the writing of James Joyce and other modernist writers, commenting that Joyce's work is so full of blanks that that the reader is 'irritated' (Iser 1976, p184) as he struggles to form the link-ups between the unjoined segments of text: this is exactly one of the objections to hypertext fiction put forward by Miall and others.

- *Schemas*

Calling on Gestalt psychology, Iser refers to the concept of the schema, chunks of information which the reader can grasp: narratives of all kinds are inevitably constructed from schemas (Iser prefers the term 'schemata'), and in formula fiction for example, the schemas will be more familiar, more stereotyped. An example of a genre schema is the dead-quiet, darkened room in a horror narrative: the camera/narrator follows the protaganist, placing the viewer/reader in an unnerving state of uncertainty. All readers or viewers who know this schema will also know that an attack on the protagonist is imminent, and thus they will feel heightened expectation and arousal. In modernist fiction, schemas may be less familiarly genre-attached, or schemas may be 'mixed' so that connections between events are not so readily perceived. In any case, readers respond to schematic sequences, recognising certain aspects from previous narratives

they have read, or finding themselves surprised by others, and using that awareness to help them understand what is happening, or reacting to their surprise to think again.

The author creates this schematised narrative structure which Iser calls the 'first code' (Iser 1976, p92), which the reader has to decode, as he searches for the unknown. That unknown might be the connection between characters in the story, or the reasons why things happen in the story, or knowledge of how the story winds up. The potential for reader satisfaction is always there, via the reader's participation in the structure the writer has created. Aesthetic pleasure comes from the working out of the 'second code' (Iser 1976, p92), the gradual piecing together of the indeterminacies, creating the aesthetic object within the imagination. The reader's 'moving viewpoint' (Iser 1976, p109) allows the reader to look back and forth, reflecting on what has been read and projecting forward to what might come, with each new phase of reading adjusting the understanding of the second code: so over time, over different periods of reading, the reader gathers together all the components of the text, at linguistic and conceptual levels, and builds toward the complete aesthetic object, (which might be a different aesthetic object the next time the book is read, [Iser 1976, p149]) in a Gestalt (Iser 1976, p126), a 'penny dropping' experience when the reader has satisfied his piecing-together quest. The process is dynamic, ever shifting, with text and reader interdependent in creating aesthetic pleasure and the aesthetic object.

Hypertexts are very unfamiliar in their forms and structures, and are certainly challenging to the reader, with varying perspectives and indeterminacy creating a puzzle for the reader both in content and delivery; so in the reading of hypertext fiction, if we follow Iser, we might expect the hypertext reader to be even more involved, and ultimately more satisfied:

> Only if the reader is involved in working out this solution, can there be a truly cathartic effect, for only participation – as opposed to mere contemplation – can bring the reader the hoped-for satisfaction (Iser 1976, p48).

Interestingly, a very similar concept is used by Nell when he speaks of 'frames' (Nell 1988, p81/2) which are units or chunks of the narratives which the reader will recognise

(from other stories in the genre for example) and which therefore help the reader to know what kind of action or event is taking place and thus how it might impact on earlier or future events in the narrative. This concept is very much like the schemas and blanks of Iser's theory, and indeed, Douglas and Hargadon (2001) employ schema theory as a way of analysing hypertext reading (see chapter 3).

- *The psychology of reading: Victor Nell*

Victor Nell's study, *Lost In A Book* (1988) seeks to find psychological explanation and evidence for what happens in the reader's mind as he/she travels through the fictional framework that Iser saw as the catalyst for the reading experience. Central to Nell's work is the concept of the ludic reader (Nell 1998, p2), the reader who reads for pleasure. This concept of reading, allied to Iser's explanation, offers highly useful leads to help in the investigation of reading.

Nell examines the psychological processes that create the *pleasure* of reading, and finds that reading narrative fiction is pleasurable at different levels of involvement. A reader can be absorbed, an effortless concentration, but can also be entranced, a mood which resembles 'an altered state of consciousness; reverie, or dreaming, or perhaps even hypnosis' (Nell 1988, p 2). Similarly, Iser says that when we read and are gripped by the fiction, we become 'pre-occupied with something that takes us out of our own given reality' (Iser 1976, p140). Nell's Motivational Model of Ludic Reading relates reading 'to the reward systems that set it in motion and determine whether it will be continued or terminated in favor of another activity' (Nell 1988, p7). This is a promising approach for an empirical study of a difficult new art form: if we can investigate the motivational factors at work when readers encounter fiction, we may also be able to understand what readers enjoy or dislike in the new narrative forms of hypertext.

Ludic reading can only occur if three antecedents are in place: the ludic reader must be 'skilled', able to 'rapidly and effortlessly assimilate information from the printed page' (Nell 1988, pp7-8); reading must be seen as pleasurable; thirdly the appropriate book must be selected, which for Nell means a book that the reader considers a good read (Nell 1988, p8). This last condition clearly presents a difficulty for empirical research

into hypertext, since most readers will be so unfamiliar with hypertext fiction that they will not have any benchmarks, such as favourite author or preferred genre, against which to select the 'appropriate' book. There are no clear genre categories yet in hypertext fiction.

Once these three conditions are in place however, ludic reading can begin, and then two 'reinforcers' also come into play to keep the reader reading. These reinforcers are physiological and cognitive. The physiological reinforcers include changes in the reader 'mediated by the autonomic nervous system, such as alterations in muscle tension, respiration, heart beat, electrical activity of the skin, and the like' (Nell 1988, p9). These events are important to us here because they feed back to consciousness as a 'general feeling of well-being', i.e. pleasure. Though there is no attempt to record such physiological changes, the empirical study discussed in chapters 5-10 does look for evidence of factors in hypertext fiction which generate feelings of 'well-being' for readers.

The cognitive events are also significant because they determine the kind of mental state into which a reader is transformed through reading: the high demands on attention that a narrative makes upon the reader is what facilitates the reader becoming 'lost' in the book. Reading, Nell argues, 'changes the focus of attention from self to environment' (Nell 1988, p9), that is, focus is on the stimulus, not the internal self.

Nell's model is enlightening because it discusses the triggers to pleasure, which is clearly at the heart of aesthetic experience of literature, as we have noted in section 2.1 above. Perhaps a problem in hypertext reading is that attention is not sufficiently held for pleasure-inducing changes to occur.

Nell further asserts that ludic reading is effortless (Nell 1988, p75):

> The ludic reader is not only subjectively relaxed but is also able to resist outside distractions, as if the work of concentration (the teacher's "Pay attention!") is done for him by the task (Nell1988, p75).

The product of this effortless attention and resultant absorption is comprehension: effort and reward are finely balanced, producing relaxed pleasure.

Nell cites empirical evidence to prove that the first point of comprehension (syntactic rules, lexical conventions etc) is 'bookbound' (Nell 1988, p79): this would tie in with Iser and Fish who acknowledge the influence of the text and the conventions it carries with it. The second point of comprehension, which concerns affective response, is book-stimulated therefore, but, Nell says, exists only in the individual reader's mind and is 'quite idiosyncratic' (Nell 1988, p79), which echoes Iser's view (though not Fish's preference). From psychology we get a model of the reading relationship that is remarkably close to the reader-response theorists' ideas. Author, text and reader all participate in a process that combines conventions of language, narrative and reading to generate a subjective experience, the pleasurable aesthetic experience during which a literary work is created in the mind of the reader.

- *Effort and reward: flow*

Nell also discusses the impact on reading pleasure of 'response demands', such as occur in academic examinations or written tests: these increase the sense of effortfulness. Choosing which link to follow in a hypertext seems very much like a response demand: demand of this kind is called 'cognitive overhead' by computing expert Jeff Conklin (1987), and too much of this overhead leads in the context of hypertext to what Douglas (2000) calls 'cognitive overload'. This is an aspect the empirical part of the project will investigate, since the effort of operating an unfamiliar interface may break the absorbed mood that is so important to Nell's ludic reader. When the sense of effortfulness becomes too great, enjoyment reward is reduced or lost altogether, and ludic reading ceases.

Though he says it is a seeming paradox, Nell contends that readily comprehended messages more fully engage the reader's conscious attention, leaving less spare attentional capacity for anything else: but the 'paradox' makes sense when we consider at the everyday level how we become 'lost' in a well written, well constructed narrative to the point where time passes quickly, compared with how time may drag when we are reading a narrative that is poorly written, or very difficult to follow, and our absorbed attention is continually broken by the need to consciously 'think' about what we are doing. Clearly, there is a fine balance between effort, reward and absorption.

It is very interesting to note the concept of 'flow' defined by Csikszentmihalyi in 1975, which meshes with and supports Nell's effort-reward formula, and may aid in approaching an explanation of the reading process in hypertext. Flow seems to be especially relevant for our purposes because it originates from the study of play, and, as we know, Nell's readers are *ludic*, or playful.

Flow is the state of mind attained when someone is 'deeply involved in an enjoyable activity' (Pace 2003, p329): for the individual in a state of flow, effort and reward are balanced, and absorbed pleasure is felt. The concept of flow has been usefully applied to studies of many activities including reading (Pace 2003); and of significance for this study, the concept of flow has been used in several studies of human-computer interaction (Pace 2003).

Csikszentmihalyi's conceptualising of flow derives from his studies of various kinds of 'optimal activities' (Csikszentmihalyi 2002, p72) which include making music, sports, and games such as chess (Csikszentmihalyi 2002). Notably one of his defined features of flow is a 'loss of self-consciousness' (Csikszentmihalyi 1975, p42), which leads to a 'forgetfulness of other realities' (Sutton-Smith 1997, p185). This is very much Nell's absorption, and Iser's entanglement – outside distractions cannot easily break through the effortless but capacity-filling attention. The 'easier' the activity becomes, the deeper the absorption for Nell/Csikszentmihalyi, and this is another conceptual clue in the investigation of hypertext readers.

In Nell's empirical study, 'ludic readers reported a concentration effort of near zero for ludic reading' (Nell1988, p262): in other words, they achieved flow. Perhaps, for a hypertext reader in flow, there would be no strain between operating the interface and engagement with the text/narrative developments on the screen: thus all the reader's attention would readily flow into the emerging narrative, leaving no attentional room for other potential stimuli.

Flow is little mentioned in the literature of hypertext, but Douglas and Hargadon (2001) do briefly discuss flow in the context of hypertext narrative and computer gaming, and consider that it might be possible eventually for hypertext readers to achieve the kind of flow gamers are reported as experiencing. The example of computer gaming is of course apposite here, since a gamer is, much like a hypertext reader, combining control of

an interface with the building up a narrative. It might be that this effort-reward balance leading to flow is not easily achieved in the currently available fictions, but theoretically it should be possible, and the empirical study looks for signs of flow states in the readers' responses to the selected hypertexts.

- *David S. Miall*

David S. Miall researches in the field of empirical studies of readers, being concerned with literary reading primarily, but also working on hypertext literature. Miall brings together several traditions of research into literary language, narrative structures, reader response, and cognitive poetics (Hamilton 2002).

Significantly for this project, Miall works with concepts deriving from reader response theorists such as Iser, but his views and findings contest many of the theories of hypertext advocates.

Miall attempts to identify features of literary writing that affect readers in a way that creates the mood-transforming conditions Nell speaks of. Nell refers to the catalytic power of the text, and Miall seeks specific catalysing features of literary writing that other kinds of writing do not carry. Miall's identification of literary features is useful therefore. In 'Beyond Text Theory' (1994) Miall and Don Kuiken state that 'stylistic features of literary texts invite a kind of felt engagement with the text that alters the interpretive possibilities available to the reader' (Miall and Kuiken 1994). The way these special features function is called 'foregrounding' by Miall (Miall and Kuiken 1994). Straddling Iser, Nell and Brooks, Miall and Kuiken term their ideas of reading 'defamiliarization theory': the special features of creative writing 'evoke feelings, defamiliarization, and an enriched mode of response' (Miall and Kuiken 1994). They are devices such as metaphor, alliteration, allusion etc. and they call attention to themselves within the text, destabilising the reader's 'conventionally understood referents' (Miall and Kuiken 1999) to 'prompt reinterpretive transformations of a conventional concept or feeling'. In other words literary writing unsettles the reader's expectations at the level of language and ideas, provoking interpretative involvement with the story. This position is very close in nature to that of Iser and Nell who both essentially argue that the text

stimulates an imaginative, interpretive mood in which the literary work comes alive. We have already noted that Iser and Miall argue very similarly for the role in a defamiliarising-familiarising process in narrative reading. Miall and Kuiken also echo the stance of theorists such as Brooks who argue that the meaning/structure generating power of narrative is an active ingredient in this narrative-reader relationship.

Reading narrative is, for Miall and his colleagues, a felt experience sparked off by the convergence of text (with its special literary features) and the reader (with his preconceptions and preferences). This seems to dovetail helpfully with Iser's model, and Nell's findings, and therefore encourages an empirical study using a framework designed around these concepts of reading, a framework which is outlined in 2.4 below.

So Miall's understanding of the act of reading is very similar in many ways to Nell's and Iser's, but at this stage in our discussion it is important to note that Miall, when it comes to hypertext and reading, is largely very pessimistic. He believes that hypertext and imaginative reading do not go together, and we will need to review his work further in chapter 3 when we look specifically at hypertext.

Interestingly, Miall himself, in a slight softening of his stance towards hypertext fiction in 2003, does suggest that hypertext fiction might one day produce immersion and absorption (flow) for readers: he argues for more systematic empirical reading studies to help writers understand the reading process, the better to write effective hypertext fiction.

2.3 Narrative Structures

From Aristotle onwards, structure fascinates and compels attention: in his *Poetics*, he is clear about what we need in literary art: 'beauty depends on magnitude and order' (Aristotle in Butcher 1951, p31), magnitude being a length which can properly deliver tragedy and easily be assimilated by the memory, and order being 'a beginning, a middle and an end' (Aristotle in Butcher 1951, p 31). Indeed, the reader-response theorists, placing their emphasis on reader-experience, acknowledge the influencing power of narrative structure. Therefore, this section considers important elements of narrative structure which seem likely to be of significance in hypertext reading.

- *Plot*

Story, according to E.M. Forster, in *Aspects of the Novel*, is a telling of 'events in their time-sequence' (Forster 1927, p87). This is a 'low' form of art, according to Forster, whereas plot is 'a much higher aspect' (Forster 1927, p86). Plot is also a telling of events, but 'with the emphasis falling on causality' (Forster 1927, p87). Though Forster is discussing what he calls in the 1920s the 'modern' novel, this emphasis on causality is a familiar enough aspect of narrative in all 'conventional' media and genres, but it is one that perplexes when it comes to hypertext narratives, because the idea of an author-designed sequence seems to be challenged by the hyper-link. Narrative causality appears to be undermined if the reader can vary the structure of the plot.

Brooks (1984) also defines a role for plot beyond the simple organising of the events of the story into a sequence for presentation to the reader. Brooks says that plot is also an interpretive *activity* required to make sense of the *fabula* (story) and the *sjuzet* (narrative discourse) as they combine: if plot is an activity, it must be an activity performed by the writer, since, in print anyway, the reader cannot control plot. But perhaps in hypertext, plot is an activity of the reader as well.

Plot is also a metaphor for life itself. Referring to Freud, as does Brooks, Stephen Marcus (1974, p92) points out that

> ...human life, is ideally, a connected and coherent story, with all the details in explanatory place, and with everything (or as close to everything as is practically possible) accounted for, in its proper causal or other sequence. And inversely illness amounts at least in part to suffering from an incoherent story or an inadequate narrative account of oneself.

Marcus is not arguing that life itself is plotted or designed, but he is saying that human beings naturally look for a point, a significance to all that occurs in their lifetimes: literature attempts to present events in a way that has significance for the reader. In Brooks' view, the author builds a structure (a plot) out of a set of ideas, characters and events, and this endows those elements of fiction with a potential meaning.

Plot is thus the structural and signifying framework the author has constructed for his words and ideas. This is very important in an attempt to understand what goes on when readers are confronted by hypertext, because in a hypertext fiction, the framework is unstable, open to disruption by the reader, and therefore much less controlled by the author: the author does still retain some controls over the *sjuzet* (because the author determines what hyper-links are available for the reader to choose) and therefore the plot, but in hypertext plot might well be an activity performed by the reader as much as by the writer, and this is a crucial evolution in narrative that neither the Russian Formalists, Forster, Iser or Brooks could have incorporated into their theories of narrative structure and reading.

- *Challenge to plot*

Wolfgang Iser argues that whereas 'classical' forms of narrative 'offered a frame of reference that guaranteed a high degree of assurance' for the reader, (Iser 1976, p15) 'modern art' self consciously calls into question prevailing systems. It may be that hypertext is in the category of the questioning narrative, where structure is not of the 'classical' type.

Henry James believed that:

> Really, universally, relations stop nowhere, and the exquisite problem of the artist is eternally but to draw, by a geometry of his own, the circle within which they shall happily appear to do so (James 1934, p5)

James suggests that there are no rules beyond the need of the artist to find a way to create the 'geometry', the plotting of relations that the reader can grasp, and there is no reason, at least in the literature so far reviewed, why hypertext should not perform this artistic feat. Plot is merely a device among many, which the writer can utilise in any way he sees fit.

Indeed, Forster's important essay in *Aspects of the Novel* argues that plot is sometimes overbearing, beyond what can be considered believable: a different kind of

plot is required, one that does not seek to artificially structure, but allows the narrative to 'grow' (Forster 1927, p95). Forster, writing in the 1920's, a period which saw the publication of Joyce's *Ulysses* and Woolf's *To The Lighthouse*, wants to be rid of mechanical plotting because it oppresses character and the reality of life's experiences: 'As for plot – to pot with the plot! Break it up, boil it down.... All that is prearranged is false' (Forster 1927, p99). Forster might almost be asking for hypertext fiction...

Hypertext writers are using terms such as 'web', 'network', 'rhizome', 'patchwork' to describe their narrative products. And some critics are suggesting that plot itself now should be seen as a thing created by the reader. Nonetheless, Brooks argues:

> ...if plot has become an object of suspicion, it remains no less necessary: Telling the self's story remains our indispensable thread in the labyrinth of temporality. It is of overwhelming importance to us that life still be narratable (Brooks 1984, p285).

Readers, if Brooks is right, will always need to find the thread of meaning in the narrative, and it seems likely that the structure created by the author will always be highly influential in that process of reader-driven meaning-creation that Iser and others have described. But what happens when the structure is multiple, shifting, controlled at least to some extent by the reader? *Fabula* clearly still exists, assuming the author has a designing intention at all; but *sjuzet* is made very hard to pin down, and plot therefore becomes more shifty even than an object of suspicion, it becomes a chimera.

- *Endings and closure*

The Freudian analysis of the ending is vital to Brooks' theory: the drive of all life is toward its completion, death, and in narrative likewise, the drive is toward the ending. For the reader, in this view, the ending is an absolute, a law of nature: 'The telling (of a story) is always in terms of the impending end' (Brooks 1984, p52) just as all life is moving toward death. Reading a narrative is carried out in the expectation of the ending which will make sense of all that goes before. The reader needs an ending which will provide the closure of significance and meaning, just as Freud's mentally ill patient needs

a completed life narrative that will restore understanding to his troubled mind. Without an ending and therefore without closure, reading a narrative is a futile experience: 'the interminable would be the meaningless, and the lack of ending would jeopardize the beginning' (Brooks 1984, p93).

However, endings are not straightforward. Appearing to contradict or at least challenge the Freudian demand of a cure for the 'illness' of indeterminacy of which Marcus (1974) speaks, Brooks (1984) and Barthes (1973) argue that part of the pleasure of reading is the delicious journey, the pleasure of the text itself, the tantalising detour, the tension of expectation, (Brooks 1984, p104). The ending might even be a let-down. Brooks says, 'Our most sophisticated literature understands endings to be artificial, arbitrary' (Brooks 1984, p314). Forster similarly argues that 'nearly all novels are feeble at the end. This is because the plot requires to be wound up' (Forster 1927, p93). Endings might be desired, but in the narrative arts can sometimes be seen as part of the falseness of prearrangement, and therefore ultimately anti-climactic, less satisfying indeed than the *expectation* of the ending. Implicit within these views is the idea that endings in narratives are a structural or conventional expedient, but not actually essential if aesthetic satisfaction were to be gained in other ways. Perhaps hypertext fiction might deliver this 'other' kind of satisfaction.

It seems that endings are simultaneously desired, avoided, and finally also maybe false: writers and critics have struggled to know what to do about the point at which the book runs out of pages. Readers want an ending which gives meaning and significance to the preceding words; and yet in 1984, Brooks, despite arguing that readers need endings, was able also to say that modern day readers have become too sophisticated to fully believe in the artificial orderings of plot. Douglas (2000) suggests there might be a different kind of pleasure available, that which comes from the reader's imaginative and intellectual efforts to connect, associate, work out and make sense of the material presented by the novelist. But Brooks argues that despite experimentation, the dominant status of plot 'on principles little changed from the nineteenth century' (Brooks 1984, p 314) remains. Hypertext narrative structures may well be the kind of thing Forster wants, and that Brooks and Barthes admire, but can readers get on with it? These structures will be examined in depth in Chapter 3 and in the empirical study.

2.4 Summary: conceptual framework for an empirical study of reading.

The reading models outlined in the sections above have been selected because they display an interesting 'fit' with concepts important in hypertext reading, and because they provide conceptual clues which an empirical study can follow. To move the discussion now into a consideration of hypertext specifically, summary points are offered below alongside questions and comments in italics that highlight key areas of the hypertext debate.

- We enjoy reading narrative at many levels, including that of physiological arousal Nell 1988). *Does hypertext create arousal, and can it generate the 'lost in a book' effect?*
- Writing and reading both emerge from cultural contexts or communities, within which they are experienced (Fish 1980). Narrative can be enjoyed outside of the cultural context in which it was created (Iser 1976). A certain level of cultural understanding between writer and reader is assumed, for communication to take place (Fish 1970), but satisfying reading can also take place with texts which unsettle or challenge convention (Barthes 1973, Iser 1976) *Does hypertext destabilise the cultural basis for communication too much?*
- The text and the reader interact to produce a unique experience for each reader, and therefore we must take account of both text and reader (Fish 1970, 1980; Iser 1976, Richards 1924). *In hypertext, as in print, this relationship is therefore a focus of attention for an empirical study.*
- Narrative can unsettle our expectations, defamiliarise our preconceptions, and we also enjoy becoming familiar with the unfamiliar (Iser 1976, Miall and Kuiken 1994). *Hypertext would seem to be an ideal medium/form to offer this effect, but are readers coping with an 'overload' of unfamiliarity?*
- The blanks (differences between writer's and reader's understanding) and gaps (the implied connections between narrative elements) produce indeterminacy which each reader makes an imaginative effort to resolve (Iser 1976). *The hypertext link might appear to be the digital equivalent of Iser's 'gap', producing more blanks even than a*

a modernist narrative in print, perhaps fulfilling poststructuralist desires for a breaking down of determinacy in texts (Landow 1987). But is this hypertext's great success or its downfall as a potentially popular form?

- Narrative offers us a sense of order, meaning, significance which real life may not always provide Brooks 1984, James 1934, Richards 1924). Thus we need narrative's structuring of events. *Does hypertext offer this ordering, or does its multi-form structure remove this possibility for the reader?*
- Plot gives causality to the narrative, offers meanings and significances, and can break temporal and spatial barriers in order to present an interesting narrative (Brooks 1984, Forster1927). *Does hypertext fiction offer the causality and significance-building of familiar plotting designs?*
- The narrative's ending is desired for the satisfaction it provides (Brooks 1984, Nell 1988) but we can also enjoy the journey, and the text that draws attention to itself can be a pleasurable experience. (Barthes 1973, Brooks 1984, Fish 1970, Iser 1976). *In hypertext is the fascination of the exploration enough to counteract the 'disappointment' of the lack of a determinate ending?*
- Endings are therefore not the only element that can provide a sense of closure for the reader: the reader can gain satisfaction by his/her own building together of the narrative elements, even before the narrative comes to its formal end (Douglas 1994). *Does the new, reader-centred narrative experience of hypertext offer the satisfaction of closure?*

The overarching question (in research objectives 1 and 2) raised by this summary of the act of reading is 'does hypertext fiction generate states of reading pleasure?' In the next chapter we examine knowledge and theory about *hypertext* reading.

Chapter Three

The Pleasures of Reading Hypertext Fiction

3.1 Narrative tradition and hypertext

- *Non-linear narrative*

Bolter (2001) argues that the technology that facilitates hypertext actually encourages non-linear writing of all kinds, and non-linear narrative structures are indeed a notable feature of every hypertext fiction available today.

In general usage, and across a range of narrative media, 'linear' usually means chronological, i.e. that 'story order is the same as narrative order' (Walker 1999, p112). 'Non-linear' therefore is frequently used as a description of a story *(fabula)* which is presented out of chronological order via its narrative (*sjuzet*).

However, when we begin to consider hypertext fiction closely, we need to think harder about what we mean by non-linearity, not just in the context of story and narrative plotting, but also in relation to how it is experienced. A linear text, says Espen Aarseth, is one in which 'the convention is to read word by word from beginning to end' (Aarseth 1994, p51). This definition refers to the implied compulsory sequence that print organises, one in which the reader will read in the (only) narrative sequence offered by the author. Therefore, non-linearity in hypertext is not just a description of the way the story is delivered via the narrative structure. Aarseth says:

> a nonlinear text is an object of verbal communication that is not simply one fixed sequence of letters, words, and sentences but one in which the words or sequence of words may differ from reading to reading because of the shape, conventions, or mechanisms of the text (Aarseth 1994, p51).

In this definition, non-linearity is situated within the text and within the experience of the text, and it is only that experience that produces a narrative.

Even if we argue that any sequence is eventually linear, since it has to be read in lived chronological time, the experience of reading hypertext is unpredictable: the authorial intention, whether to create a chronological structure or not, is open to disruption by the possibility the reader has to choose links at will. Thus hypertext narratives 'play with the reader's notions of cause and effect' (Bolter 2001, p128). Hypertext presents the reader with a structure to be explored in any direction the linking system can allow, and while there may be literary themes or plotting devices (for example the quest theme in Michael Joyce's *afternoon, a story,* or the map metaphor in Moulthrop's *Victory Garden* and Heyward's *Of Day, Of Night*), the possibility to jump from place to place in directions or sequences that the author cannot predict, makes hypertext fiction different from any of its predecessors.

It is important to acknowledge this radical re-assembling of story, plot and reading when considering the factors that may make hypertext fiction enjoyable or not. Robert Coover, the novelist and well known commentator on hypertext fiction, points out that

> much of the novel's alleged power is embedded in the line, that compulsory author-directed movement from the beginning of a sentence to its period, from the top of the page to the bottom, from the first page to the last (Coover 1992 online).

The reader *expects* this continuity. Coover actually goes on to argue that hypertext promises an exciting and provocative future, but if Coover is right, we might find that many readers do not cope when faced with the 'poly-sequential' (Douglas 2000, p37) form, along with the new level of operating input which hypertext requires of them.

- *Non-linear narratives in print*

The attempt to examine and disrupt linearity did not begin with the emergence of hypertext: there are many well known examples from narrative's traditions, in particular the novel, where linearity has been played with. Even before the possibility of the electronic link, writers have experimented with the forms of their narratives, twisting, reorganising and fragmenting linearity in the sequencing of plots. The history of the literary non-linear

narrative is well documented (see Bolter 2001, Douglas 2000, Keep et al 2000, Landow 1997), and need not be repeated here. The point is that the printed narrative has continually attempted to stretch its own conventions. Hypertext can thus be seen as part of a continuum of this creative effort.

Aarseth notes that a hypertext novel such as *afternoon*

> does not represent a break with the *novel.* On the contrary, it finds its place in a long tradition of experimental literature in which one of the main strategies is to subvert and resist narrative (Aarseth 1994, p71).

J. Yellowlees Douglas (2000) and Bolter (2001) also point out that hypertext fiction follows on from some 20th and 21st century fiction which has included multiple perspectives, fractured structures, rejection of conventional endings, even alternative endings, non-linearity in fact. Modernist and postmodernist novels may be seen as the most radically disruptive of all narrative forms, until the arrival of hypertext, that is.

Novels by James Joyce, Cortazar, Borges and others are unconventional and enigmatic, but they can be enjoyed. Landow (1997) argues that the history of print fiction actually reminds us that readers are more far more familiar with open-endedness than is generally acknowledged.

It is also worth adding here that many successful mainstream feature films in recent years (Tarantino's *Pulp Fiction* or Gondry's *Eternal Sunshine Of The Spotless Mind,* for example) have played with linearity. We further know that the non-linear experience of computer game playing is hugely popular. Audiences 'know' what a non-linear plot is. Narrative that breaks with convention *can* gain its position in the canon, and be recognised and loved by audiences.

- *Hypertext and non-linearity*

It would seem unlikely therefore that non-linearity alone will frustrate readers: in fact, non-linearity can offer a pleasure in itself. On the other hand, as Keep et al (2000 online) point out, 'it could be argued that the achievements of the Modernists have made little

impact on the practices of reading and writing as those terms and activities are generally understood'. Modernism and its print offspring seem as disorientating now as they did when novels such as Joyce's *Finnegan's Wake* (1939) or Saporta's loose-leaf novel-in-a-box, *Composition Number 1* (1963), first appeared. The negative reactions to hypertext which we have noted already in this paper may be very similar in nature to these engendered by Modernist fiction, and Keep et al say that 'hypertext may find itself accused of the same elitism as its Modernist predecessors' (Keep et al 2000 online).

Brooks (1984), and Keep et al (2000) see that mainstream popular fiction relies on 'conventional' plot structures established in the 19th century heyday of the novel. Bolter admits that 'truly popular fiction is plot driven' (Bolter 2001, p137). Douglas also confirms this when she notes that experimental writers such as Sterne, James Joyce and Cortazar are 'difficult' because of their 'self-conscious absorption with the act of writing itself, and the problematic relationship among narrator, text, and reader' (Douglas 2000, p 52).

Gee (2001), concluding her small-scale empirical study of Bill Bly's hypertext fiction *We Descend,* states that 'perhaps authors should provide these new universes to their readers in a complete and linear fashion, rather than in pieces to be assembled' (Gee 2001, p15).

Is it that hypertext, with its non-linearity as well as it other unfamiliar features, is embedded too deeply in the realm of 'difficult' art, along with Joyce and Borges? When its practitioners run out of experimental creativity, will it only be considered of historical interest? Bolter summarises helpfully what seems to be a core issue:

> With bestsellers today, as with much fiction of the 19th century, displacement works as an ornament because it successfully plays with the reader's expectation of and desire for the linear. The difficulty with hypertext is that it does not offer alternative orders as mere ornamentation ... For hypertext displacement becomes the customary rhetorical strategy, whereas consecutive, chronological order is the exception (Bolter 2001, p137).

The empirical study therefore considers whether non-linearity as standard can be delivered in ways which readers find appealing.

3.2 Narrative in the interactive environment

- *Hyperlinks*

Mark Bernstein, Eastgate's chief scientist, comments that 'if links lie no one will trust them, if links are candid no one will follow them' (Bernstein 2000). It is hard to know where to place this section of the discussion because the link is part interface object, part activity, part design, and, from the reader's point of view, sometimes seemingly part chance occurrence. Hypertext writing operates around the insertion of links into the text and upon images: links allow readers to jump from scene to scene in a non-linear fashion. Writers must construct their narratives using links, creating what Douglas (2000) calls the 'intentional network', but also accept that they cannot know *which* links their readers will follow. Calvi argues that the dynamic nature of the reader's interaction through linking actually enacts the plot (Calvi 1999), and Murray agrees:

> The right stories can open our hearts and change who we are. Digital narratives add another powerful element to this potential by offering us the opportunity to enact stories rather than to merely witness them. (Murray 1997b, p170)

In her paper on Joyce's *afternoon* and Stuart Moulthrop's *Victory Garden*, Calvi (1999, p108) goes as far as asserting that the link is 'the carrier of meaning' in hypertext fiction, which would mean that conventional plotting, whether chronologically linear or not, is secondary to the choices the reader makes. The narrative is determined by the reader, although, as several critics point out (Bolter 2001, Douglas 2000, Kendall and Réty 2000, Miall 1998, 1999, Miall and Dobson 2000) the range of choices is necessarily determined by aspects of the author's design and the software's capability.

Whoever controls the link, it is clearly influential in the reading process. We noted in chapter 2 that Miall and Kuiken (1994) have put forward the idea of 'foregrounding'. Foregrounded features are special literary devices, such as metaphor or allusion, which simultaneously present familiar terms and unfamiliar potential meanings, which the reader will perceive, interpret and react to. Miall and Kuiken do not go as far in their 1994 study as making a connection with hypertext, and none of the hypertext critics so far reviewed appear specifically to associate theories of literary foregrounding with hypertext linking. However, the concept of foregrounding is implicit in much discussion of the hyper-link. Calvi, as we have already noted, suggests that the link may well be the carrier of meaning in hypertext, and Bernstein (1998) has written in detail about the narrative force of the link.

Kendall and Réty (2000) believe that since the author has created the underlying structure of links to exist in the first place, this structure must allow the reader to experience 'growth' (Kendall and Réty 2000, p163) as he proceeds through the narrative, no matter what links he/she chooses. The link suggests narrative progression, as Kendall and Réty explain:

> Literary structures are often deliberately ambiguous, and the process of how they reveal information to the reader is as important as the information itself. Elements such as suspense, foreshadowing and deliberately induced uncertainty make the reading process more than just a simple matter of knowledge acquisition (Kendall and Réty 2000, p 162).

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' and add that 'the reader is aware of whether the growth process is unified or chaotic, varied or monotonous, rich in surprise and suspense or predictable, fast or slow paced' (Kendall and Réty 2000, p163).

It seems reasonable, then, to suppose that the hyperlink would act as a foregrounded feature within the text; hot spots and menus draw attention to themselves, perhaps acting as metaphors, perhaps creating rhythmic patterns (Bernstein 1998), and at the same time causing the reader to participate in perception and interpretation.

It is clear that the link is a still-emerging part of the technology and lexicon of the digital book. Each kind of link comes with its potential problems, from various kinds of disorientation, fragmentation, cognitive overhead (Conklin 1987), and visual clutter (Landow 1997 p16); but the link nonetheless has narrative power.

- *The hyper-plot*

Hypertext theorists have attempted, using varying models and terms, to define the shifting nature of plots in hypertext (Bernstein 1998; Landow 1997; Ryan 2006). But, if, as Brooks (1984) says, the mainstream of contemporary readers expect a plot essentially modelled on 'principles little changed from the nineteenth century' (Brooks 1984, p314), hypertext structures will inevitably for most readers appear obscure. Even though we have already argued that readers have become familiar with non-linearity in print and film, that non-linearity almost always exists within an essentially Aristotelian macro-structure, whereas hypertext may well not.

Brooks says that 'we read in a spirit of confidence, and also a state of dependence, that what remains to be read will restructure the provisional meanings of the already read' (Brooks 1984, p23). Brooks, though he discusses at length the non-linear, 'hermenuetic' (enigmatic, puzzling) plots of 20th century fiction, cannot in 1984 discuss the additional de-constructing element of interactivity; but he says, 'the authority of narrative derives from its capacity to speak of origins in relation to endpoints' (Brooks 1984, p276). If hypertext plots are open, less determined by the author than the reader and the linking choices he makes, can we even speak of plot, and if so does narrative lose that authority?

Calvi (1999) argues that the plot in an hypertext fiction is 'actualized by the possible pathways selected by the reader', surely something print authors could not offer a reader. Analysing *afternoon*, she further comments that Joyce's hypertext narrative has no *fabula*, that is it has no story. If it has no story to tell, it presumably has no plot either, because plot is the structuring framework of the story to be told (Brooks 1984). Calvi suggests that in *afternoon* there is no 'episode centred' pattern, but a 'sort of indefinite association-driven magic' (Calvi 1999, 107). Neither Brooks nor Iser, theorising before hypertext emerged as a narrative medium, would disagree that the reader must always perform an act of

sense-making, and that this is more necessary in the fiction of writers such as James Joyce, Woolf, or Forster; so perhaps *afternoon* is essentially a Modernist work. Michael Joyce himself appears not to want to label his work as such, but he does say 'hypertext is a representation of the text that escapes us and surprises us by turns' (Joyce 1997, p 580), sounding remarkably like a description of many Modernist works. Shelley Jackson adds to this conception of plot and expectation when in 'Lives' (a page within *Patchwork Girl* 1995) 'she' (the fiction's narrator) explains

> Most of us do our best to adhere to the conventions of the genre and a kind of vertigo besets us when we witness plot developments that had no foreshadowing in the previous chapters; we protest bad writing (Jackson 1995).

The above is actually Jackson's narrator talking about the role of a character in the narrative, but she might easily be talking about the reaction of hypertext readers to unfamiliar plotting devices.

Others come to similar conclusions about plotting: Miall (2003 online) notes that in *These Waves of Girls* 'no single narrative lies behind the numerous lexias'. Coover notes that in *Victory Garden* 'there are nearly a thousand text spaces and over 2,800 electronic links between them' (Coover 1993) and in the course of his discussion of the narrative Coover works out three or maybe four possible 'plots'. There is, he says, 'really only one story here' (Coover 1993 online) but the reader has to find it amidst the links and hidden pathways. And, as Murray asks, 'How can a writer tell a connected story in so fluid an environment?' (Murray 1997b, p155).

Murray (1997b) and Ryan (2006) argue that in order to create satisfying plots and enjoyable reading experiences, the author must balance control over the story with offering the reader 'agency', i.e. reader input into the development of the narrative (see section 4.3 below). This is difficult of course because too much agency for the reader leads to loss of authorial control (and consequent problems of disorientation and cognitive overload as discussed above). But conversely, if agency is too restricted the interactor/reader is reminded of the 'fourth wall' (Murray 1997b, p191), i.e. he is no longer actively involved in the interactivity, the interface becomes too visible and thus distracting. Of hypertext

fictions specifically Murray says, 'the indeterminate structure... frustrates our desire for narrational agency, for using the act of navigation to unfold a story that flows from our own meaningful choices' (Murray 1997b, p 133). What Murray longs for are labyrinths that are 'goal-driven enough to guide navigation but open-ended enough to allow free exploration and that display a satisfying dramatic structure no matter how the interactor chooses to traverse the space' (Murray 1997b, p134). For Murray and Ryan the hyper-plot is possible, even if Ryan warns that 'it will... take a seamless (some will say miraculous) convergence of bottom-up [reader] input and top-down [author] design to produce well-formed narrative patterns' (Ryan 2006 p 99).

- *Closure*

Holland (1975, p14) states 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'. We have also acknowledged that mainstream audiences expect narratives to run along 'orderly' lines (Brooks 1984) towards the ending that provides catharsis and satisfaction.

Modernist and postmodernist fiction might view plot and closure with suspicion, but Brooks argues that these narrative foundations must still remain, albeit in forms that may challenge or frustrate readers' expectations, in order to carry reading forward (Brooks 1984, p 314/5). Hypertext author and software developer Robert Kendall says that 'successfully sustaining growth is ultimately important for achieving closure in a reading' (Kendall and Réty 2000, p167).

We have also seen, however, that some hypertext advocates have argued that closure may not be the be-all-and-end-all (literally and aesthetically) of narrative reading. 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 1997a) a kind of anarchic literary seamstress who defies plot, forever patching together pieces of narrative, motivated by associations, and dismantling the linear in narrative. Hypertext, she says 'is always at its end and always at its beginning' (Jackson 1997a online); 'hypertext doesn't know where it's going' and 'it isn't clear just where it ends' (Jackson 1997a online). It sounds poetic and dreamily attractive, but can it deliver the satisfaction of closure? 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 1997a online).

Jackson is anti-Freudian here, anti-nature even, if Brooks (1984) and Turner (1996) are right. If it is in our very being to create sense out of order, to fashion narrative sequence out of life's chaos, then Jackson's version of narrative literature is likely to be at best challenging to readers used to the clear 'end' of books and films, and at worst just baffling (Birkerts 1997).

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.

Douglas notes that, when reading Joyce's *afternoon,* her satisfaction of closure comes when *she* is satisfied that she has grasped enough of the narrative to feel content. Douglas is able to read 'wildly different versions of the narrative' (Douglas 1994 online), but she says she sensed closure when she became aware of her readings having 'satisfied one of the primary quests outlined in the narrative: what has happened to Peter's ex-wife and child?' (Douglas 2000, p101). She reaches a point when she perceives the whole structure of the work. There is no single end to the 'book' of *afternoon*. Similarly, Murray

(1997b, p174)) argues that closure in electronic narratives (including games in Murray's account), comes when the 'map of the story inside the head of the reader has become clear'.

Closure of the kind Douglas describes for herself is a different experience from that described by Brooks (1984). Douglas is not in essence arguing against Brooks, but she is saying that closure can be gained at different points in the telling of the story. Particularly in hypertext fiction, which has even less of an obvious 'end' than the most fractured of postmodern novels, readers 'must supply their own sense of an ending' (Douglas 1994 online).

Douglas concludes that readers do not necessarily need a 'definitive, deathlike ending' – she says, 'a plausible version or versions of the story among its multitudinous possibilities will suffice equally well' (Douglas 2000, p 122). But Murray would say that this is far less pleasurable than our 'traditional expectations of closure' (Murray 1997b, p174). She asks, 'how can we have catharsis in a medium that resists closure?" (Murray 1997b, p175), adding that

> The never-ending, ever-morphing cyberspace narrative is a place to revel in a sense of endless transformations, but in order for electronic narrative to mature, it must be able to encompass tragedy as well (Murray 1997b, p 175).

3.3 Reading and hypertext

- *Indeterminacy*

Douglas (2000) points out that readers create something of their own out of a blueprint provided by the text, but that hypertext readers must do something different:

> In print fiction, readers actualize a text by mostly unconsciously fleshing out adjectives, adverbs, and nouns, by making assumptions and inferences, and framing hypotheses about what is happening and what is coming next. Readers of hypertext fiction, though, perform something a bit more like an act of concretization, by

> blazing along trails through the dense web of possible hypertextual links, activating conditions with effects that the author may not have anticipated. (Douglas 2000, p31)

The indeterminacy of hypertext demands this 'act of concretization'. Hypertext is not entirely indeterminate – certain features, of the text and the available links, remain constant – but the reader has to do a lot of non-trivial work (Aarseth 1997), both physical and mental, to construct the narrative. Jill Walker says that in hypertext the conscious choosing of the next page causes her to pay more attention to the act of reading itself than to the subject of the reading. (Walker 1999, p112). Whereas, for Iser, a text leaves blanks and gaps which the reader must fill with his own imaginative library of denotations, connotations and associations, Douglas argues that the gaps and blanks in hypertext can become more demanding than the text itself.

In other words, in hypertext fiction there are all the indeterminacies that Iser identifies, plus the added 'liberation' (Douglas 2000, p67) of multiple pathways and therefore multiple potential gaps to be filled by the reader's responses. It follows from this that readers in hypertext must be more active than readers of print, because alongside the operational choices they must make to follow links, they must also process the gaps: (gaps exist because the reader cannot experience the text precisely as the author experienced it), connect the blanks (blanks are the implicit connections between different elements of the narrative) and follow and make sense of links (which suggest association but which may also defy it because they generate both gaps and blanks in Iser's use of the terms).

When we add this extra uncertainty to the fact of multiple beginnings and endings, along with the potential for lack of closure, we may begin to feel as if we are roaming around aimlessly. Jackson (1997a) comments that hypertext can be exhausting, 'like being in a foreign country' and she might well add 'without a reliable map'. Walker admits to giving up her first reading of *afternoon* in frustration after an hour, feeling totally lost (Walker 1999). She notes that when she followed links she 'usually couldn't understand the connection between the word (she) had chosen and the node to which it led (her)' (Walker 1999, p111).

However, indeterminacy does not have to be terminal, if hypertext writers acknowledge the reader's need for expected narrative hits such as narrative growth

(Kendall and Réty 2000), and closure (Brooks 1984, Douglas 1994, 2000). Kendall (1999a) argues that readers will enjoy a hypertext's indeterminacy if they feel they are getting somewhere: he says 'there is always room for subtlety and surprise' but there must also be a 'satisfying balance between continuity and variety in the unfolding text' to keep the reader 'hooked'.

- *Disorientation and cognitive overhead*

'More than two millennia ago, Aristotle pointed out that one thing audiences do is try to find a unity in what they see, a central theme or meaning or idea around which the various details of the play or story come to a focus' (Holland 1975, p 13). Even one of hypertext's most positive admirers, George Landow, acknowledges that hypermedia have the 'potential to dramatically confuse and confound readers' (Landow 1997, p115). In 1997, though Landow does rather dismiss the problem of disorientation by saying that expert users of hypertext do not find it a problem, he does also list orientation as one of four prerequisites for hypertext reading, the other three being 'navigation, entrance and exit' (Landow 1997, p124). By 2004 he is putting forward 'rules' for hypertext writers which suggest very strongly that ensuring the reader's sense of time and place, achieved primarily in Landow's view through carefully organised linking, is essential for 'good' hypertext fictions. (Landow 2004 online). Disorientation in hypertext narratives may well be open to creative and technical solutions, but it is still an issue that critics, both pro and con-hypertext, struggle to resolve (Coover 1993, Douglas 2000, Kendall and Réty 2000, Selig 2000)

Disorientation is the result of too much linking potential (Landow 2004), poorly structured linking (Kendall 1999), and poorly designed interfaces (Nielsen 1990), resulting in a reader becoming 'lost in space' as Conklin (1987, p38) puts it. The reader either does not know where he is in the network (the sub-structure of links devised by the writer) or he does not know how to navigate further. In the case of narrative, which Conklin does not specifically discuss, we must add the kind of disorientation that comes from 'losing the plot', a literal loss of the story's unfolding due to experiencing too many unresolved enigmas between linked pages. Conklin says:

Of course, one has also a disorientation problem in traditional linear text documents, but in a linear text, the reader has only two options; He can search for the desired text earlier in the text or later in the text. Hypertext offers more degrees of freedom, more dimensions in which one can move, and hence a greater potential for the user to become lost or disoriented (Conklin 1987, p38).

Conklin is talking mainly about non-fiction texts, but we can see that in a fictional narrative, given all the expectations readers will bring for cause and effect relationships, character development, excitement, anticipation, and meaningful conclusion, that disorientation could seriously threaten the reader's engagement with the story. In fact, as Douglas says, with all the choice available the reader risks 'being overwhelmed by cognitive overload – and of finding the narrative largely incomprehensible' (Douglas 2000, p 140).

Conklin suggests two solutions for disorientation; 'graphical browsers and query/search mechanisms' (Conklin 1987, p 38). The graphical browser is the interface, and Conklin's words in 1987 are completely relevant to this contemporary study:

> browser designers are able to create quite viable virtual spacial environments. Users orient themselves by visual cues, just as when they are walking through or driving through a familiar city. However there is no natural topology for an information space... so until one is familiar with a given large hyperdocument, one is by definition disoriented (Conklin 1987, p39).

Conklin concludes that the problem of disorientation cannot be solved by the browser alone, although more recently Kendall has argued for 'visual representations of hypertext patterns' (Kendall 1999) and it seems likely therefore that graphical help will certainly be an important orienting aid for most readers. Given our discussions above regarding the hyperlink, we can also see that carefully designed linking functions (Bernstein 1998, Kendall and Rėty 2000) will connect ideas, events, dialogues, characters

in a way that the reader can follow, and a clearly designed and organised interface should aid orientation as well.

Cognitive overhead and its related issue, cognitive overload, are potentially problematic aspects of hypertext reading which are closely related to orientation issues. We saw in chapter 2 that a certain amount of cognitive demand upon the reader is good, because it engages the reader's attention and catalyses the imagination (Barthes 1973; Brooks 1984; Iser 1976); too much is bad because it drains attention into problem-solving activity that reduces engagement and absorption (Nell 1988). Conklin observes that cognitive overload is both a result and a cause of disorientation: the complex structures of hyper-texts, combined with the unfamiliarity of the interface can lead to too much cognitive overhead, disorientation, and thus overload; in turn cognitive overload leads to concentration fatigue and thus disorientation. This is a problem for writers who have to design a structure of links and a structure of choices which their readers can follow, because these choices engender 'a certain overhead of metalevel decision making, an overhead that is absent when the author has already made many of these choices for you' (Conklin 1987, p40).

- *Immersion, engagement and flow*

Reviewing Jackson's *Patchwork Girl*, Robert Coover commented,

> Shelley Jackson's elegantly designed, beautifully composed *Patchwork Girl* [...] offers the patient reader, if there are any left in the world, just such an experience of losing oneself to a text, for as one plunges deeper and deeper into one's own personal exploration of the relations here of creator to created and of body to text, one never fails to be rewarded and so is drawn ever deeper, until clicking the mouse is as unconscious an act as turning a page, and much less constraining, more compelling.(Coover cited in Jackson, undated online)

There are many such laudatory reviews of hypertext fictions in the literature, and many discontented ones also, as we have already indicated. If hypertext fiction can involve

a ludic reader to the point of becoming lost in a book, then hypertext fiction has a future. But even the hypertext advocates cannot ignore the barriers of disorientation, cognitive overload, lack of closure that hypertext fiction may bring. If hypertext cannot overcome these barriers built into its very nature, then it may be simply, as Campbell (2003 online) suggests, that 'hypertext fiction, clicking on links, etc, ... is boring to most people'.

However, there are optimistic arguments for hypertext's potential to absorb: referring to Nell's 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 essentially 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. In the hypertext environment, they argue that 'the aesthetic remains largely immersive as long as the story, setting, and interface adhere to a single schema' (Douglas and Hargadon 2001, p158). They 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, p159).

The problem for writers of hypertext is that they may well want to follow neither predictable narrative structures or familiar interface designs, leaving the reader with no ready schemas to draw upon. But, assuming they find ways of merging the schemas of the narrative with the schemas of the interface, then hypertext fiction should be able to generate immersive experiences.

On the other hand, Douglas and Hargadon (2001) argue that hypertext fiction may afford engagement, a different kind of involvement from immersion. Engagement can be as deeply felt as immersion, but it occurs when the reader is actively wrestling with schemas that the text is challenging, much as Barthes' 'text of bliss' would do.

So far so good: readers can enjoy formulaic, schematised narratives in print or in interactive games; or they can enjoy schema-challenging novels and hypertexts. Douglas and Hargadon (2001) have to admit, however, that engagement is likely only to occur in

hypertext fiction for readers who are widely read, 'since they have access to a vast array of schema' (Douglas and Hargadon 2001, p161). Really what this means, if Douglas and Hargadon (2001) are right, is that hypertext fiction, as it stands, may not be able to attract an audience beyond its current somewhat confined territory.

Still, Douglas and Hargadon are thinking along promising lines, and the key to unlocking the states of immersion and /or engagement may well lie in a blending of schema theory with Nell's (1988) pre-digital theory of lucid reading and the associated concept of flow used in play and game theory, as elucidated by Csikszentmihalyi (1975). Flow, remember, is that finely balanced condition in the participant (here, the reader) where effort and reward are so closely matched that the reader becomes highly absorbed in the narrative/activity.

This of course takes us back to the consideration of links in section 3.2, and leads us on to the detailed discussion of the interface in chapter 4. If writers of hypertext fiction can balance their innovative narrative structures and interface designs with sufficient reference to narrative and operational conventions (schemas) familiar to readers, then flow, and the consequent enjoyment it generates, may begin to be a readily achievable state.

- *Interactivity and agency*

When Andy Campbell, the developer of the *Dreaming Methods* website, was asked how interactivity changes the reader's experience, he answered,

> If it worked, I think interactive reading would completely customise a reader's experience, give them the sense of having journied through a rewarding story and be excited about returning to it and going through it again in a different way or direction. Interactive reading would balance delicately between computer gameplay, multimedia encapsulation, the visual possibilities of language and truly new, dynamic and atmospheric storytelling (Campbell 2003).

Campbell's apparent scepticism about the likely future success of hypertext fiction nonetheless hints at a more positive perspective: if the unfolding of the story is, in

hypertext, much more in the control of the reader, then that control needs to be absolutely central to the writing and designing process. If engagement, immersion, flow, absorption (all the 'lost in a book' states that are so central to the various theories of reading we have examined) are to be available in hypertext, then the hypertext fictions must involve the reader through purposeful, progressive interaction, as well as through beautiful, artistic writing and narrative structures. As we noted earlier (see section 3.2 on hyper-plot) this involvement through interaction is called 'agency' by Murray: 'Agency is the satisfying power to take meaningful action and see the results of our decisions and choices' (Murray 1997b, 126).

But agency is not widely discussed in the literature surrounding hypertext fiction. It is as if hypertext fiction, because it is largely seen as literary, does not need to offer agency: 'we do not usually expect to experience agency within a narrative environment' (Murray 1997b, p 126). And yet, by its hyper-linking and visual nature, hypertext *appears* to be offering agency. Thus readers may expect hypertext to provide the experience of agency that games and web sites provide, along with the narrative movement of fiction in print or on screen. Hypertext hybridity may cause a confusion of expectation (Douglas and Hargadon 2001), or as Campbell (2003) believes, may make the reader stop reading very quickly.

Murray worries that what she calls 'postmodern literary hypertext' (Murray 1997b, p132) may fail because: 'the indeterminate structure of these hypertexts frustrates our desire for narrational agency, for using the act of navigation to unfold a story that flows from our own meaningful choices' (Murray 1997b, p133). Agency therefore must be integral to the development of an intelligible and satisfying narrative and Murray does at times wonder 'how can we enter the fictional world without disrupting it?' (Murray 1997b, p103). She also knows that, in many interactive games, immersion in the highly detailed visual *'place'* comes at the expense of immersion the unfolding *story*. Games have not been able to deliver truly satisfying narratives, Murray argues; on the other hand hypertext fiction (as distinct from digital fictions or games) is 'privileging confusion' (Murray 1997b, p133).

- *Reading for pleasure -v- hypertext*

Even though they acknowledge some of the current difficulties presented to the 'ordinary' reader, the likes of Coover, Douglas, Jackson, Joyce, Kendall, and Murray believe that engagement, immersion, absorption, could be available to readers of interactive fiction.

However, Laura Miller feels otherwise:

> Meandering through the lexias of hypertext works like Michael Joyce's "Afternoon, a Story," Stuart Moulthrop's "Victory Garden" (both published on floppy disks by Eastgate Systems) and even the floridly naughty "Grammatron" is a listless task...This process, according to Landow, makes me "a truly active reader," but the experience feels profoundly meaningless and dull. If any decision is as good as any other, why bother? (Miller 1998 online).

Feeling frustrated by *afternoon* also, Aarseth comments 'the unpredictable changing of scenes constantly undermines the would-be reader's attempt to identify with the narratee, as well as the identification of the narrator' (Aarseth 1994, p69).

David Miall has stated that 'literary reading is rendered incomprehensible by the model of reading put forward in hypertext theory' (Miall 1999). In a subsequent study, Miall and Dobson's (2001) empirical studies indicate that 'hypertext degrades the quality of readers' engagement during reading'. Miall and Dobson are not using the term 'engagement' to mean the same as Douglas and Hargadon (2001): in Miall and Dobson's usage engagement means captivation, the kind of involved absorption that Nell says gives pleasure. Miall and Dobson's important argument is that reading for pleasure is actually hampered by hypertext. In particular, the allegedly randomising effect of links disrupts and ultimately quashes the reader's personal interpretation and imaginative response to the narrative.

The advocates of hypertext, often referring to the ideas of Vannevar Bush (1945), argue that we think by association, and that the hyper-linking powers of a hypertext narrative allow that kind of thinking to happen more freely for the reader. The increased

control afforded to the reader, and the non-linearity of a hypertext is inherently more human, they would argue.

However, Miall counters that what the hypertext *author* sees as a significant association (and to which he therefore attaches a hyper-link), the reader may not see (Miall 1999). While Kendall argues that 'when words within the text serve as link anchors, the suggestiveness of these words directly bears upon the reader's sense of agency' (Kendall 1999 online), Miall counters that the reader might miss or ignore the link and thus be limited in his freedom of movement through the text. This accords with Douglas' (2001) more general point about hypertext sometimes freezing out the reader. Furthermore, when the reader does follow a link, the association signalled by the author may completely elude the reader, thus confusing and disorientating the reader. The reader doesn't know what he will get when he triggers a link, and he might not like it either! For Miall, association happens in the reader's imaginative mind — fixing the imaginative associations via hyper-links actually disrupts rather than enhances associative thought, and thus ruins the experience of literary reading.

Miall argues that the old model of the single, centred, authoritative author allows the reader greater freedom to engage imaginatively with the narrative. It is the intimacy with the author's voice that the 'ordinary' reader craves. Robert Coover asks, 'What's wrong with surrendering deferentially to the implacable linear flow of an author's creative thought, her own particular page-by-page artistic and narrative decisions?' (Coover 1993). Miall and Dobson concluded that hypertext fiction failed to be 'an effective medium for literary reading' (Miall and Dobson 2001 online), that hypertext hindered the very associative and imaginative processes for reading that hypertext advocates claim it encourages. They also found that 'the absorbed and personal mode of reading seems to be discouraged' (Miall and Dobson 2001, online).

However, there is no empirical evidence in any of Miall's papers that proves that hypertext links would *necessarily* disrupt imaginative flow any more than the 'link' between one page and the next in a printed novel would do. Murray, Kendall and others have pointed out that the link is as much part of the artist's design as is the 'jump' from one paragraph to the next on a printed page, or from one chapter to the next. If the author has

designed the hypertext, with all its potential pathways, skilfully, why should there not be the potential for a satisfying narrative for the reader, whichever way he/she chooses to go?

It has also to be pointed out that Miall and Dobson's empirical study was not of a native hypertext but a printed short story which they converted to hypertext by the adding of links at points *they* selected: whilst they do acknowledge this limitation, they rather skip past it. Still, their conclusions are challenging, and in the context of this study must be investigated further.

3.4 Summary

From the above discussion of hypertext fiction, we can highlight several key understandings about hypertext reading, raising questions which the empirical study investigates:

- Interactive plots *can* be simultaneously multiple and coherent (Murray 1997b). A careful and powerful authorial design is nonetheless required (Murray 1997b, Kendall 1999). *Are hypertext fictions currently available balancing interactivity with coherent underlying structure?*
- Readers of hypertext fiction are faced with sometimes quite radical non-linearity as well as interactivity (Aarseth 1994, Calvi 1999, Douglas 2000, Murray 1997b). *Is non-linearity in itself a block for readers of hypertext, or can non-linearity be as pleasurable as it evidently is for audiences of successful non-linear narratives in other media, such as film or games?*
- The author must design the linking network so that the reader experiences something with order and import no matter what sequence of links he or she chooses (Bernstein 1998, Kendall 1999a, Kendall and Réty 2000, Murray 1997b). *Does the existence of links add to the reader's enjoyment of an already indeterminate narrative structure, or is it simply a confusing factor?*

- Miall and Dobson (2001) contend that hypertext hinders the associative and imaginative processes of ludic reading that hypertext advocates claim it encourages. *Is the act of reading disrupted in hypertext?*

- The concepts of schemas (Iser 1976) and flow, (Csikszentmihalyi (1975, 2002) offer a point of connection between literary reading and human-interface behaviour. Flow may well be a valuable indicator of reader-absorption in hypertext (Douglas and Hargadon 2001). *Do readers of hypertext fiction experience flow-like states when reading, and is the experience of flow enjoyable?*

Chapter Four
The Interface

4.1 Overview

Skopee (2003, p 8) states that the interface is 'the dimension in which the interaction between body, tools, (hard- as well as software) and behavioural aim are structured'. Thus the interface would seem to be unavoidable in a discussion of hypertext reading, presented as it is via the interface.

In order to read a hypertext narrative, the user/reader must first know how to operate a personal computer (the hard-tools), and then must operate the interface (which the software provides). The interface is the software-generated tool-kit which enables a reader to interact with the hypertext piece, to move around its created world, and to gain access to the virtual thing which is the aesthetic reading experience (Iser 1976). The interface attempts to afford the reader an enjoyably easy and purposeful movement around the work (Nielsen 1990), whether that be an information-giving website or a hypertext fiction. The interface is the contents page, the chapter-titles, the page-turning device, the book-mark, the presenter of the structure of the hypertext narrative. In this way the interface is surely integral to the act and experience of reading hypertext fiction.

There are strong arguments that the reading experience is influenced by the material form of the 'book' that makes manifest the text to be enjoyed (Cavallo and Chartier 1997; Bolter 2001). Furthermore, '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' (Wright and Monk 1991, p55). And yet, the interface, the material form of the *digital* book, is almost completely ignored in systematic discussion and research around hypertext. Two notable hypertext software developers, Mark Bernstein (1998, 1999, 2000) and Robert Kendall (1998, 1999a, Kendall and Réty 2000) have written about the potential and problems of hypertext navigation, and they acknowledge the significance of the interface, but give it sparse coverage, and have apparently not conducted empirical study of readers' reactions.

In this chapter therefore the digital form of the book is reviewed. The conventions of 'book' design influence the reader's interaction with and appreciation of the narrative, and, as Coover (1992), Douglas (2000) and Murray (1997b) all point out, the conventions of hypertext fiction design are in flux, creating problems for readers.

Secondly, a review is provided of published studies in hypertext fiction that *do* consider the interface: it is necessary to understand the current state of the debate, in order to provide a conceptual and practical framework for this project's empirical study

Finally, interface design conventions are examined: in the literature, only one empirical study (Gee 2001) is specifically aimed at relating hypertext reading to interface ergonomics. Therefore, the literature reviewed in this section (4.3) is largely in the field of software and interface design from commercial disciplines, since so little useful material exists specifically for hypertext fiction design.

4.2 The Digital Book

- *The form of the book*

In their study of the history of reading, Cavallo and Chartier (1997) contend that 'no text exists outside the physical support that offers it for reading' (p5). 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 (Bolter 2001, p77).

Murray argues that technology, specifically 'the dizzying physics of the twentieth century' (Murray 1997b, p34) drives development in narrative forms, whilst writers exploit the artistic possibilities thrown up by the new 'book' that is the computer and the monitor. 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 a 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. (Cavallo and Chartier 1997 p29)

It is significant that historians and theorists alike associate the physical form of the book so closely with the content it delivers. The physical form of the book is surely of significance in the study of hypertext reading because, as Cavallo and Chartier argue, writing, reading and the technology of the book have always been intimately intertwined. Likewise, Bolter believes that, 'the materiality of writing matters, as much for electronic writing as for earlier forms' (Bolter 2001, p17). 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 online).

Hypertext fiction looks and behaves differently from any previous incarnation of the book, and this impacts upon the kinds of stories that can be told and the experience of reading those stories. David Miall, often a critic of hypertext fiction, says,

> it is clear that the material or technical media of hyperfictions play a significant role since, unlike the incidental process of turning the pages of a linear narrative in a printed book, the reader must interact deliberately with the medium itself in order to continue reading (Miall 2003 online).

Gutenberg's press did not radically change the appearance and functioning of printed volumes (Cavallo and Chartier 1997), but the digital medium changes both. Murray points out that,

> hypertext fiction is still awaiting the development of formal conventions of organisation that will allow the reader to explore an encyclopaedic medium without being overwhelmed (Murray 1997b, p87).

Murray's contention is true ten years on, and suggests part of the problem that this study seeks to investigate. Interestingly though, in the era of hypertext fiction, the form of the digital 'book' does in some examples refer to its printed ancestors. The *Dreaming Methods* website offers some hypertext narratives that, whilst making sophisticated use of the power of digital hardware and software, are in many ways still referring to books in print. Current titles on the *Dreaming Methods* website are *A Dream Journal*, *Book of Waste*, and *The Diary of Anne Sykes*. However, *Dreaming Methods* does not present books of paper, but animation, sound, mobile text, and a wide range of choices about what to read. This is clearly a new kind of 'book', and there are no studies at this point to indicate whether this looking-back is a benefit or a hindrance to hypertext's progress: the empirical study discussed later in this thesis looks for clues in this regard.

- *Deciphering the book*

The computer and the almost unlimited range of textual and visual elements available in a modern interface, make this digital book very different from anything that Gutenberg could have created. Bolter himself touches on the nature of the debate and suggests an area of investigation for this study when he says, 'Reading in the electronic medium can be challenging as well, for readers must decipher the system as they read' (Bolter 2001 p38). Deciphering 'the system' is not a challenge the first readers of the Gutenberg Bible had to face; and so we might well agree with Murray's thought that part of the 'problem' with hypertext fiction is that this extra challenge (a challenge beyond that of engaging with the narrative content) is too much for some readers.

Robert Coover argues that this new material form of the book 'seems to be fragile and short-lived' (Coover 1998), creating potential for confusion and blockage in readers. This transformation of the book must, if the arguments of Bolter, Murray, and Cavallo and Chartier are valid, affect the reading experience: the transformation is so fast, and as yet so unstable moreover, that readers may find themselves presented with something very unfamiliar, not at all the experience of readers of the first Gutenberg Bibles, who,

Cavallo and Chartier (1997) point out, essentially recognised the volume in their hands and knew what to do with it.

The digital book does not look or behave quite like a book: so we have to adjust our sense of 'book' when we come to a hypertext, and if we are not prepared for that adjustment, the art may seem evasive.

Games have made the transition from board to screen more readily it seems, and that is partly because they largely use the look and genres of film (Douglas and Hargadon 2001). Films are watched on screens, games are played out on screens, and there is thus no radical readjustment for the user of a game. To play *The Phantom Menace* in its Playstation form is almost to watch the film *The Phantom Menace*, but with added role-playing involvement.

Non-fiction seems ideally suited to hypertext. For example, users of digital encyclopaedias do not have a problem because the interactive encyclopaedia is read in the same way as the printed version: the reader looks for terms or items he requires and can click on references and notes just as he would follow footnotes or other 'links' in a printed version (Bolter 2001, pp87-91). The form, organisation, content, and use of encyclopaedic texts make transfer to hypertext appear very natural.

But although hypertext fiction is to some 'the most convincing expression of the idea of hypertext' (Bolter 2001 p 121), and although 'print forms the tradition on which electronic writing depends' (Bolter 2001, p46), to read a hypertext narrative is not the same as reading a printed one.

When one opens a hypertext fiction one is confronted with something not seen in the world of books, films or plays: choice, and choice destabilises our perception of 'book'. Murray (1997b) and Douglas both warn that hypertext is a 'medium lacking stable conventions to curb its creators and guide its consumers' (Douglas 2000, p125). Petersen (1998 online) notes that 'the lack of conventions also prevents users from decoding perceptual cues as in well-known genres'. Form, presentation and content are all changing so quickly that readers may feel baffled. Miall and Dobson point out quite reasonably that 'differences in design principles between hypertexts make it less likely that learning will generalize from one hypertext to another' (Miall and Dobson 2001, online).

So, it seems clear that we must examine the physicality of the hypertext 'book' if we are to understand better the reading experience associated with the text. The physical form of the book, and the visual presentation of the text has been influential upon and influenced by the reader's experience, and this will be an important consideration in the empirical part of this research effort. Cavallo and Chartier say:

> ... the form of a publication transmits how the person who created that text or that book perceived the reader's abilities; second, that same form dictates a way of reading the text and of creating comprehension and controlling interpretation (Cavallo and Chartier 1997, p 35).

Murray also makes the case for the element of determinism: the computer allows 'the expansiveness of the novel with the rapid intercutting of the film' (Murray 1997b, p 157). In turn, it is therefore argued here that the interface, the determining physical operating factor in hypertext fiction, should therefore be an integral part of studies of hypertext fiction and reading.

- *The book-in-the-pocket factor*

'Book' is more than just the physicality of the pages and the cover, and more than just a commonplace term for the form of the art, because it expresses something about the experience and the activity of reading too. Murray feels that 'we cling to books as if we believed that coherent human thought is only possible on bound, numbered pages' (Murray 1997b, p 8). She does not argue that hypertext will do away with printed books, but she does believe that digital media offer a new environment in which to create and experience narrative. Bolter argues that 'digital media are refashioning the printed book' (Bolter 2001, p 3). The advent of digital technology has allowed writing itself to be 'remediated' – interactivity, multi-layering, collaboration, non-linear sequencing, and multi-media elements such as animation and sound, are all part of story-telling in the new writing space. 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, p8).

In a study of readers' reactions to a new story telling form and the medium which delivers it, we cannot ignore these objections, even though Bolter and other hypertext advocates (Landow 1997) largely do. Bolter easily imagines a digital book as light and portable as a printed one (Bolter 2001, pp8/9), and it is true that hand-held units such as the PlayStation Portable or iPod Touch do allow wireless internet access. But those units do not yet support all software packages (Flash is used extensively by some hypertext fiction writers, for example), and their screens are obviously very small, so most hypertext fictions, whether online or CD-delivered, have to be read at a desktop or laptop computer screen. That initial physical 'un'-comfort may be the first objection raised by even keen readers of fiction. This is another objection that Bolter acknowledges and quickly dismisses when he points out that volumes before the advent of mass printing were very large, and had to be read at lecterns. He 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, p9), but he cannot provide evidence.

- *The books of Eastgate Systems*

It is notable that most of the literature concerned with studying hypertext focuses on the publications of Eastgate Systems, which uses its own Storyspace software. Eastgate is the major producer of what we might call 'published' hypertext (as opposed to hypertext that is available freely on the web).

Eastgate Systems publish 'serious hypertext' (eastgate.com). What Eastgate mean by 'serious' is not explained, but there is a clear enough suggestion throughout Eastgate's

website that their hypertext is literary, experimental, and weighty. Currently Eastgate has titles which are sold in disk and CD format, packaged in a booklike case. We can see quite easily what Bolter means by remediation when we open one of Eastgate's hypertext novels. There are many elements of 'book' about them, but equally as many that challenge our expectations of what a novel will offer.

Mark Bernstein, Eastgate's software innovator says, 'We need to interrupt, to arrest the eye, to invite the reader to reflect' (Bernstein 2000), and when we open an Eastgate hypertext that is certainly the case. For example, the opening 'page' of Shelley Jackson's highly regarded *Patchwork Girl* (1995) seems familiar, in its typeface and layout – it looks something like a book, but it does not work like a book. Instead of turning to page 1 and starting to read, the reader has a choice to make. There are five possible beginnings: 'a graveyard, a journal, a quilt, a story, & broken accents' (Jackson 1995).

On the opening page of Michael Joyce's *afternoon*, before the story can begin, we read a series of pages explaining how hypertext works. Even though *afternoon* was published in 1987 this explanation is still necessary because the Storyspace interface that delivers Eastgate hypertext is so unlike anything else users will come across.

A third oft-critiqued Eastgate example is Stuart Moulthrop's *Victory Garden* (1991). The opening page of this hypertext is like Joyce's, an explanation of how to 'use' this book. If one clicks through the most simple sequence using the return key, after five clicks one comes to a map graphic, and then navigation becomes a matter of many choice points on each screen.

These are not books, but they bear so many echoes of books we know that we will inevitably look for book-like forms and functions. The pages are almost always simply windows of text, black letters on a white background, we read each lexia left to right, top to bottom and at the end of each lexia we naturally look for the next page. But to find the next page in an Eastgate hypertext we have to explore the text with the mouse, clicking to see what, if anything, will happen. This is an unfamiliar activity, not what we do when reading a book in print. Referring to an exercise she carried out with students, Douglas (2000) remarks that her participants, frustrated by the lack of recognisable conventions to help them navigate the hypertext under scrutiny, relied on the simplest 'page-turning' device they could find: the arrow keys on the keyboard. In other words, they wanted a

computer equivalent to turning the page, and eventually they chose to ignore the author's built-in linking system for something they felt more comfortable with.

'Obsession with "friendliness" is a childish reflex that merely reflects our anxiety about these strange new machines', argues Bernstein (2000), but ultimately that is for readers to decide. We cannot afford to rather snobbishly say, as Landow (1997, p117) suggests, that 'expert' users will not worry about unfamiliarity and disorientation. Champions of hypertext such as Landow may be pleased that hypertext books dispense with all traditions of print, but if readers fail to engage with the new kind of books, then the objectors such as Miall and Birkerts will have their way and hypertext fiction may fade into the obscurity of Saporta's book-in-a-box experiment, *Composition Number 1* (1962).

- *Online hypertext fiction*

The visual possibilities for hypertext are not extensively explored by Eastgate's roster of writers, apart from Megan Heyward, but online hypertext is different. Able to use any software they choose, as long as it will run on the web, online writers are employing more multimedia elements, especially colourful graphics.

Bolter devotes a chapter of *Writing Space* (2001) to what he calls the 'breakout of the visual' arguing that books always were very visual, from cave drawings as narrative, to illuminated manuscripts, through Blake's illustrated books, to the Internet. Visual elements need not threaten the 'book' but with digital technology the book can do many more things than it can in print. Barrett (2000) goes even further, arguing that graphics are the future for interactive storytelling: he believes words can never be flexible enough to allow the reader/user full interactivity, whereas graphics are the key to harnessing the 'powerful emotional effects possible in interactive stories' (Barrett 2000, p7)

On the other hand, Miall and Dobson (2001) do not like the visual elements in hypertext, arguing that they block imaginative engagement with the narrative. But it is clear that internet writers have quickly become more than mere wordsmiths: visual elements are used more and more extensively, but with text still being a major expressive code.

Caitlin Fisher's *These Waves of Girls* embeds text within a graphics-based page layout. Movement through this particular book is certainly never a traditional page turning process because there is no default passage through the narrative, such as is achieved in an Eastgate hypertext by using the return key. This hypertext won the Fiction award of 2001 conferred by the Electronic Literature Organization and is thereby labelled as 'literature'. However, 'using' this book much more like surfing the web, though the reader is still trying to gather consistency, to use Iser's (1976) concept, trying to find the thread of thought, action or consequence that would make this a narrative (Brooks 1984).

The digital fictions on the *Dreaming Methods* website may well be the least booklike of the hypertexts currently available, despite overt visual references to books in several of the pieces on show. There is no discussion of *Dreaming Methods'* work in any of the academic literature reviewed, and yet this collection of hypertext fictions represents as viable a potential for hypertext fiction as the Eastgate list.

Dreaming Methods' hypertexts use Flash software, and although they often tell their story via texts, they do not behave as any book in print. Each piece has a musical soundtrack, and animated visuals that react to mouse movement tell the reader that this is something other than a book.

The web developer/author at *Dreaming Methods*, Andy Campbell, believes that the book is still the main point of reference for fiction in the minds of most readers (Campbell 2003 online), but that new media writing must be much more than print on a screen if it to find a 'realistic readership' (Campbell 2003 online). The insistence on print as the starting point for digital fictions is not what Campbell sees as a viable future, and so the book in Campbell's view will eventually become irrelevant to new media writing, or in fact new media writing itself will become irrelevant:

> 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 online).

We are left with the question still of how a ludic reader will make sense of these departures from printed books, whether on CD or online. The book is somewhere in the frame of reference of many of the hypertext pieces presently available, and yet the book is being revised and even left behind: texts are no longer only read, they are 'used'. The interface is the place where the reader and the text come together in this digital 'book'.

4.3 Hypertext fiction and the interface

- *Storyspace*

Mark Bernstein says that the genesis of Michael Joyce's *afternoon, a story* was 'tightly bound to the original development of Storyspace (Bernstein 2002, p172). That single statement suggests an intimate interdependence between hypertext fiction and the software that delivers it, and therefore an intimate relationship between the reader and the interface he/she must use in order to read the hypertext.

Storyspace can justifiably be called the first dedicated hypertext fiction delivery platform: it was first demonstrated in 1987 (Bernstein 2002). It is a simple and cheap software application, and it has provided a base for a particular style of hypertext fiction to evolve over two decades. Storyspace has certainly been an influential development in hypertext writing, and more research around its particular interface would be useful.

Gee (2001) does provide some empirical data from her study of readers of Bill Bly's *We Descend*; she notes that readers failed to find back buttons, struggled to find the map view, and met with confusing behaviour when opening text windows from the map view. One reader, who could not open the text window she wanted 'became confused and disoriented' (Gee 2001, p12) and could not complete Gee's navigation task.

Gee also notes that the readers in her study preferred to use the return key or just random mouse clicking to move forward through the lexias. Jill Walker (1999), reporting on her experience of reading *afternoon*, notes that she relies on the 'default' sequence which she finds by using the return key solely, ignoring the other navigation tools provided in the Storyspace interface. These reports on Storyspace functions, though obviously limited, suggest that Storyspace's on-screen navigation tools remain unused

because, as Gee points out, they are at times obscure and confusing, often even baffling. Gee makes quite explicit the significance of the interface in hypertext reading experience when she says of her participants that 'dislikes were exclusively focused on the interface' (Gee 2001, p14).

Storyspace looks dated and decidedly non-intuitive by the standards of most website and other interface design. For example, Studio 7.5 note that 'a decisive criterion for good orientation is the presentation of the context' (Studio 7.5, 2002, p 34). Hypertext fictions running under Storyspace can make context difficult to see: the various available graphic representations of Storyspace structures available to readers should allow the reader to see the context, in terms of the story structure, of any page he/she is reading, allowing the reader to 'make a mental model of the whole content' (Studio 7.5, 2002, p 34). And yet, as Bernstein notes, 'the graphic representation of some link networks can nonetheless prove incomprehensible' (Bernstein 2002, p174). As Bernstein goes on to say, some writers actually remove from readers the facility of the map view, perhaps the most comprehensible context-giving tool on the Storyspace interface: it may be, as Bernstein says, that some writers want to enhance the reader's sense of confusion; but it may also be that confusion, combined with the required effort of learning and using the interface might tip the balance of reward and effort towards disinterest, as many theorists and critics have reported (Douglas 2000, Murray 1997b, Nell 1988, Walker 1999).

- *Connection Muse*

The Connection Muse authoring software has been developed around the central concepts of software adaptivity and narrative progression: Kendall and Réty (2000) argue that in order for the reader to feel that the narrative is unfolding in an interesting way the software needs to be able to adapt the availability of links and consequent narrative elements to the reader's knowledge.

The aims of the Connection Muse developers are admirable: for example, they argue that to sustain structural growth it is 'important that a reader be able to uncover implications in textual passages that weren't apparent upon first reading' (Kendall and Réty 2000, p167). This would aid the reader's involvement in the storyline, and support

orientation within hypertext narrative and site structure. But when the practical results of those aims are seen in the interface itself, it is not perhaps so easy to gauge the effects upon readers, and Kendall and Réty provide no empirical data of reader reaction to their ideas and interface functionalities.

In Kendall's hypertext poem *Penetration* (http://www.eastgate.com/Penetration/Welcome.html), different colours of links are used to distinguish between different categories of nodes (Kendall and Réty 2000, p167). Though the aim here is to aid readers in their understanding of their journey through the narrative, there would seem to be two potential difficulties in practice. There is no way for the reader, apart from deduction, to know what these colours indicate, and even if there were, it remains doubtful that a ludic reader (as opposed perhaps to a student or academic intent upon close analysis of the poem's operation) would readily understand how identification of these link categories would enhance their enjoyment of the poem. On the other hand, it might be that the functioning of these link-types, invisible to the reader, still add to the development of a coherent narrative.

Another claimed feature of Connection Muse is a feedback system to tell readers how much they have read and what is left to read. However, reading Jackie Craven's *In The Changing Room* (1998a http://wordcircuits.com/gallery/changing/), it is not at all clear where these feedback features are or how to find them. Craven's hypertext does offer a history upon re-opening the hypertext, but that history page disappears once a reading is begun, and can only be seen again by using the browser back-button in a strictly linear way. When Kendall and Réty say of *In The Changing Room* that 'a reader can be assured of easily finding every node in the work by simply returning to the map repeatedly' (Kendall and Réty 2000, p168) it is not clear what they mean, since the only 'map' available appears to be the opening menu, and this does not show every available node, just the available 'chapters'.

Craven herself explains the problems, as she sees it, of designing a usable hypertext:

> I learned that my own work of hyperfiction, *In the Changing Room*, baffled some readers. Although I had created a default story line which followed my characters

> in more-or-less chronological sequence, I had not clearly informed my readers how to find that path. Lacking a compass, some readers meandered aimlessly through the work, missed key passages, and became frustrated.
>
> Consequently, I have now revised *Changing Room* to include clearly labeled navigational buttons and an expanded introduction with guidelines for readers. Links have been adjusted so that readers who follow the default path will reach critical spaces. The concluding node in each narrative strand now links back to the opening menu. (Craven 1998b online)

George Landow cites *In The Changing Room* as an example of a hypertext fiction that fulfils one of his 'rules' for a good hypertext, that of providing 'a sitemap, introduction, or other starting point' (Landow 2004 online), but the opening menu that Craven offers is simply a list of chapter headings, arranged and accessible in an undetermined order, with no clue as to their relative status in terms of narrative structure. Nonetheless, there is a recognition in Craven's words that hypertext, when poorly presented, can disorientate and frustrate.

- *Metaphors*

Visual metaphors are a staple part of the design of interfaces for use on the Internet and other software applications: the most familiar example is the trash icon used by Apple Macintosh interfaces to facilitate the task 'get rid of this unwanted document'.

In hypertext fiction metaphors are equally an important way to transfer instructions and behaviours from a familiar world to a still relatively unfamiliar one. Landow notes that 'The kind of textuality created by linking encourages certain forms of metaphor and analogy that help organize the reader's experience in a pleasurable way' (Landow 2004 online).

Landow refers to Jackson's *Patchwork Girl*, which uses *literary* motifs such as scars and stitching to both structure and reveal narrative themes. These metaphors in *Patchwork Girl* are mainly a textual device; but Jackson also hints at the concept of using the interface itself to support and sustain the literary metaphor, by providing a graphical

menu of a woman's stitched-together body as her opening menu. There is also the quilt-like graphic map of text windows (Fig. 1 below), which the reader can access.

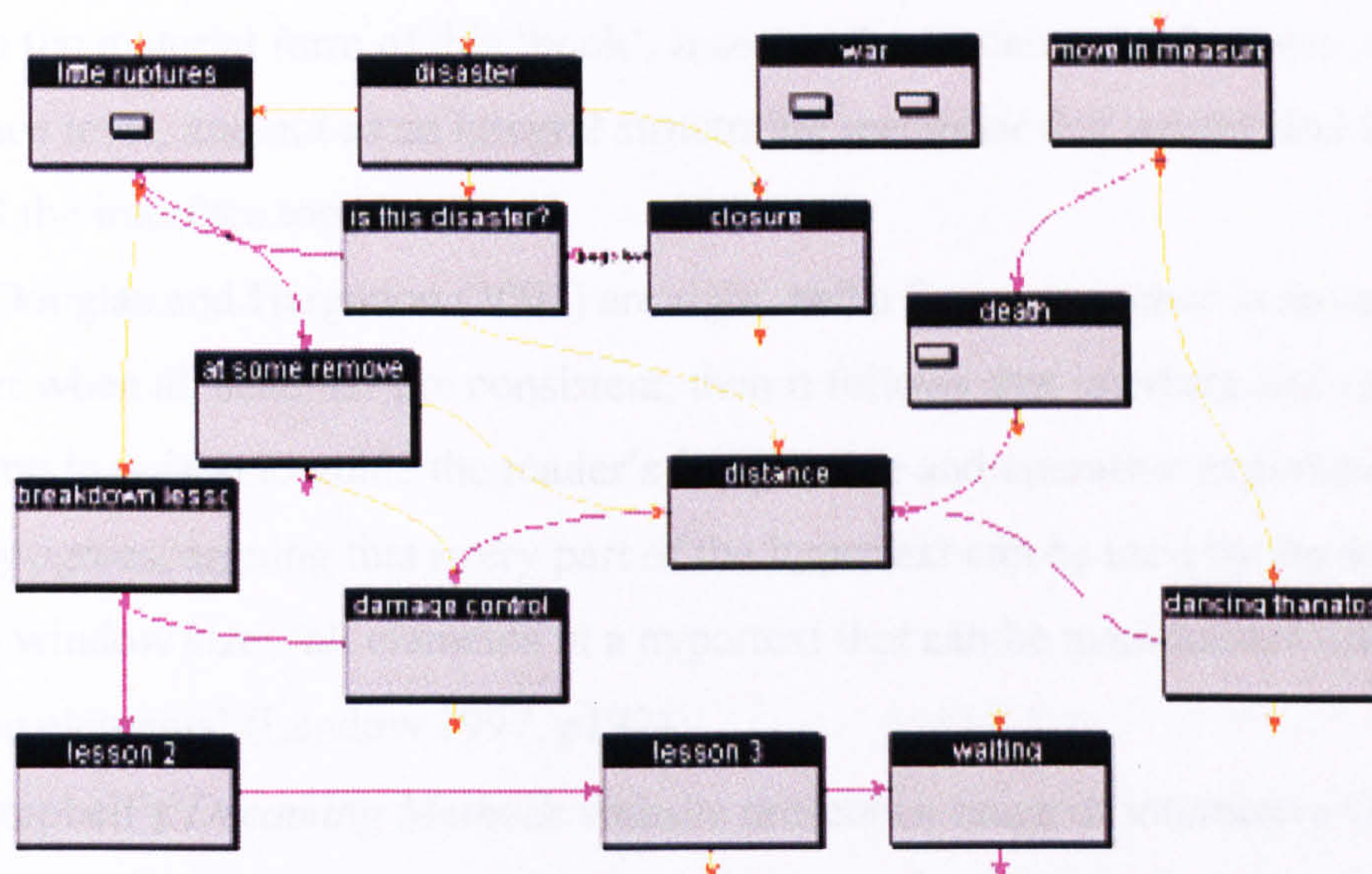


Figure 1: part of the map in *Patchwork Girl*

It is debatable whether Jackson has completely integrated the interface with the narrative however, because the quilt 'map' view can be frustratingly hard to locate once reading has begun, and the body graphic disappears after the first lexia has been selected. Nonetheless, the idea of integrating text and interface is there: the form of the 'book' itself is mirroring at least to some extent the content of the story.

Landow also cites David Yun's *Subway Story*: it uses a subway map as an interface design, and the routes of individual trains as 'as link paths that create narrative arcs' (Landow 2004 online). Landow argues that *Subway Story* is an example of a good hypertext fiction because its spatial metaphor is fused to its narrative metaphor. Conceptually this sounds logical, and artistically appealing, but Landow does not comment on its success as a narrative. Perhaps implicitly negating his own point of praise for the piece, Landow seems to separate the interface from the narrative.

Other metaphors found include the labyrinth of Moulthrop's *Victory Garden*, where the garden is a map the reader can navigate, and a place in which the story is enacted. However, the garden map is not visible for the great majority of the reader's encounter with the piece, and so it might be argued that the metaphor is unlikely to be grasped by

the reader. The process of roaming around *Victory Garden*, once past the garden graphic, is the same as roaming around any Storyspace hypertext, and it might be felt that they are all labyrinths of one kind or another: there is no sense for the reader that the garden is central to the material form of this 'book'. It seems the garden metaphor was only applied at a surface level, and not as an integral structuring metaphor that would bind both the story and the interface together.

If Douglas and Hargadon (2001) are right, and a flow experience is more likely for the reader when all schemas are consistent, then it follows that interface and story should be working in unison to guide the reader's imaginative and operative experience. Landow implicitly agrees, arguing that every part of the hypertext can be used by the writer, from layout to window size: 'all elements in a hypertext that can be manipulated are potentially signifying elements' (Landow 1997, p172).

Campbell's *Dreaming Methods* website presents a range of interactive fictions that use metaphors from print and other media to experiment with connecting narrative and interface: *The Diary of Anne Sykes* looks like a collection of diary entries, scribblings, postcards and objects on the screen, animated and noisy; *Inside: A Journal Of Dreams* is an interactive animated notebook of jottings, imagery and sound, where everything active on screen is part of the journal; *The Incomplete* uses an animated laptop graphic to tell its story, which the reader will discover in a discarded corrupted floppy disk. The *Dreaming Methods* output is moving *towards* this unification of interface, metaphor and narrative theme.

Campbell's use of interface metaphor is clearly not discarding all references to paper, but he argues that the screen must not be a slave to print:

> The greatest thing I can think of to achieve with a piece of online fiction is to capture something that, through words in conjunction with multimedia and interaction, would be impossible to capture through the traditional writing method. (Campbell 2003 online).

In this regard Campbell is echoing the view of interface usability expert Jakob Nielsen who in 1990 was already advocating that the book metaphor is best avoided in

hypertext design 'because it seems to limit the conceptual models of the searching potential of hypertext and non-linear navigation of the information space' (Nielsen 1990 p300). The use of the print metaphor in Campbell's work is a way, perhaps unconscious, of looking backwards and forwards simultaneously, doing what the theories of Iser (1976), Douglas (2000), Douglas and Hargadon (2001), and Murray (1997b) suggest would be effective, findings ways of allowing readers to use known schemas for narrative and interface, alongside extensions and even challenges to those schemas. Campbell's interface designs do at times display an over-enthusiasm for multimedia effects, and at times the visual clutter on-screen does not advance the narrative; nonetheless Campbell is attempting to balance the known with the new. Campbell argues at a pragmatic level:

> The theory behind this is to try and capture the attention of readers who are unfamiliar with reading text straight from the screen and to get them interested in the work through the more easier-to-evoke senses; strong, striking graphics and sound; animation; the temptation to click and explore (Campbell 2003 online).

The empirical study, reported in chapters 5 to 10, looks for evidence that readers can engage with and enjoy hypertext fiction more readily when the interface 'helps' them to overcome the natural schema-busting awkwardness that hypertext raises.

4.4 Interface Design and Navigation

Though it is difficult to find material that can guide a hypertext author to write with the interface in mind, there are acknowledged and accepted interface design 'rules' for website and software developers that could be utilised, and certainly these can be examined in an empirical study of hypertext fiction.

Jakob Nielsen is widely quoted and referenced as the 'guru of web page usability' (Richtel 1998). Although Nielsen published 'The Art of Navigation Through Hypertext' in 1990, it is still relevant today because it identifies core and key *principles* of interface design that apply no matter what developments in software may offer. They are essential principles of screen-based communication and it will be shown below that hypertext

concepts we have already reviewed are illuminated in the context of Nielsen's ideas. It is also important to note that Nielsen was not talking specifically about hypertext *fiction*, and thus only issues considered relevant to fictional narrative have been identified and examined below.

- *'True hypertext should make users feel that they can move freely ... according to their own needs' (Nielsen 1990, p298).*

We have seen in previous chapters that readers of narratives need to feel that they are progressing through a narrative towards a conclusion that will satisfy the anticipation and fascination of the fictional world (Brooks 1984; Douglas 2000; Iser 1976; Kendall and Réty 2000; Murray 1997b) whether in the realm of print fiction or hypertext. Alongside this need is a potential for pleasure in the fabric of the text, the exploration (Barthes 1973; Douglas 2000; Iser 1976; Jackson 1997a; Murray 1997b; Nell 1988), again a pleasure which in theory can be found in hypertext as in print. Nielsen's argument for permissive interface design seems to be completely consistent with these reader-needs.

To achieve this easy movement, Nielsen advocates an interface that imposes low cognitive loads upon the reader/user, and the view that cognitive overload is a danger to fluent reading is supported elsewhere in the literature, as we have seen in chapters 2 and 3. (Conklin 1987; Nell 1988). The theory of flow (Csikszentmihalyi 1975, 2002; Douglas and Hargadon 2001) is closely related to this view, and also seems to this researcher to be likely to be a significant element in hypertext reading pleasure.

Studying the behaviour of web users, Pace finds that the balance between effort and reward is key to a flow experience, and that interface design is a factor in this: good interface design will minimise the demands on attention 'thus freeing the user to concentrate on the task at hand' (Pace 2003, p351). Thimbleby similarly argues that good interface design empowers users, 'giving them confidence and mastery' (Thimbleby 2000, p333). Though Pace does not reference Nell, his findings are significantly close to Nell's theory that reading pleasure comes when attention is fully given over to the reading and distraction is negligible. We may therefore expect that interfaces which do not impose unrewarding demands upon the reader's attention capacity will lead to more

enjoyable, flow-like experiences, maybe even the trance-like absorption that Nell (1988) characterises as the deepest state of reading pleasure.

A final, more pragmatic point is that interactive elements in the interface should always be identifiable as such (Studio 7.5 2002), and since the conventions for hypertext fiction design are in an early stage of evolution (Douglas 2000, Murray 1997b), it follows that adopting website conventions for interactivity would help the reader/user to move easily and with reward.

- *'To help users navigate the hyperspace we must help them understand and recognize their present location' (Nielsen 1990, p299).*

Nielsen notes that readers of hypertext often report that they have become lost in the hyperspace, and we have seen that this is a problem acknowledged by many writers on hypertext and interface (Conklin 1987, Kendall and Réty, 2000, Smart et al. 2000). Smart et al (2000) attribute disorientation to ineffective site structure and associated interface design. Thus, every interface should provide the reader/user with a clear and easily accessible sense of place, both in the site and in the narrative. This could be provided by navigation aids such as 'image maps, pull-down menus, pop-up windows or labels, navigation bars, indexes or menus, and virtual reality landscapes' (Smart et al 2000).

Furthermore, Gee (2001, p5) 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'. This may be debatable in itself, but it is a logical enough assumption to suppose that a reader will approach a hypertext fiction with expectations as to how a page may 'work': it will be presumed to operate as a book might, or perhaps as a website might.

Thus, if the expected locating devices from books (e.g. chapter headings, page numbers, the ability to bookmark) are not available, and if expected locating devices from websites (e.g. maps, hierarchies, indexes, page or section icons) are also not available, knowing one's location within a large hypertext may be extremely difficult, heaping undue cognitive load upon the reading activity.

Typography and colour could also be used to indicate to the reader/user different sections of a site (Nielsen 1990; Smart et al 2000), and this principle might well apply to hypertext narrative structures as well, for example using various fonts to differentiate between characters or narrators.

- *'Avoid the book metaphor' (Nielsen 1990, p300)*

Nielsen believes that continued reliance on the book metaphor restricts the development of new and perhaps more appropriate search and navigation models (Nielsen 1990 p300), better suited to the non-linear structures that hypertext allows. Campbell (2003), Murray (1997b) and Douglas (2000) have similarly argued that hypertext has yet to find its own, truly comfortable conventions: while this is the case, and while the book is still the main reference point for hypertext fiction, it may be that new navigation metaphors will be slow to evolve. On the other hand one may speculate that the development of interactive software and the internet, alongside the continuing growth of hypertext fiction itself, will lead to navigation conventions emerging that will 'settle' into acceptance in the wider context and therefore be assimilated into hypertext fiction interface designs.

And, though Nielsen wishes that the book metaphor could be avoided, it seems that in hypertext fiction at least, the book is hard to avoid, and there may be good reason for using the book metaphor, in terms of offering the reader some familiarity of operation amongst a wealth of unfamiliar narrative features.

- *'Address the issues of overview in large information spaces' (Nielsen 1990, p300)*

A site map, or some other form of comprehensive menu of navigation choices is a classic design feature in almost every website (Studio 7.5 2002). Smart et al (2000) point out that website structures should be created with interactive behaviours in mind, not just imported structures from linear print documents. For hypertext fiction authors too, it is thus necessary to design the interface, especially those with complex multi-threaded plots, as a 'site' so that an overview of the narrative 'space' can be offered (Landow 2004).

Storyspace hypertexts do sometimes offer a map view showing all the available spaces, but not always, and we have already noted that even when available, it is not always easy to access. Other current web-based hypertexts neglect this 'standard' of interface design: for example, *In The Changing Room* (Craven 1998a), and *Lasting Image* (Guyer and Joyce 2000) neglect to offer an overview of any kind, leaving the reader with no choice but to move around, as it were, blindly. *My Body* (Jackson 1997b) offers a site map at the start, but this map is not available apart from by linear backtracking after the first link has been chosen. It is interesting to note that Gee (2001) suggests that the Storyspace map and chart views should actually be removed, arguing that they appeared to reduce the 'fluidity of reader movement' (Gee 2001, p14).

There is no published empirical research to indicate whether this lack of an overview in hypertext narrative is a problem for readers, but the literature of interface design (Nielsen 1990, Smart et al 2000, Studio 7.5 2002) suggests that it would be.

These overview facilities are so important because 'users need context' (Nielsen 1990, p304). The preservation of context is 'a decisive criterion for good orientation' (Studio 7.5 2002, p34) also, so it is not just a question of offering choice, it is a question of keeping the reader/user 'placed' in the site, and by extension, in the narrative itself.

Nielsen also talks about the difference between 'context-in-the-large' and context-in-the-small', and the need to be able to display both. In terms of hypertext narrative this would mean the facility for the reader to see where he/she was locally (i.e. which page had just been visited) and where he/she was globally (i.e. how far into the narrative he/she had progressed, and how much was to come).

If we refer back to theories of the act of reading, we would expect that the context in which each part of the narrative is read will be of significance in imparting meaning and sense to parts already read and parts to be read. In hypertext there are the added potential problems of multiple narrative sequences, and the issue of the reader not being able to find where he has already been and thus being unable to refer back readily to earlier parts of the narrative. The loss of narrative context may be a serious issue for readers wanting to become absorbed in the spell of a finely-crafted plot.

The History tool in standard web browsers can show a reader what has been read before, but this usually presents a linear path in terms of the order of *reading*, not in the

order of the *narrative* itself (assuming there is any one order: with hypertext there may, of course, be many). Another, more non-linear approach is the browsable book image used by Campbell and Alston (undated online): in *Inside A Journal Of Dreams.* Here the reader can 'flip' through the pages of the book with the mouse, locating any page.

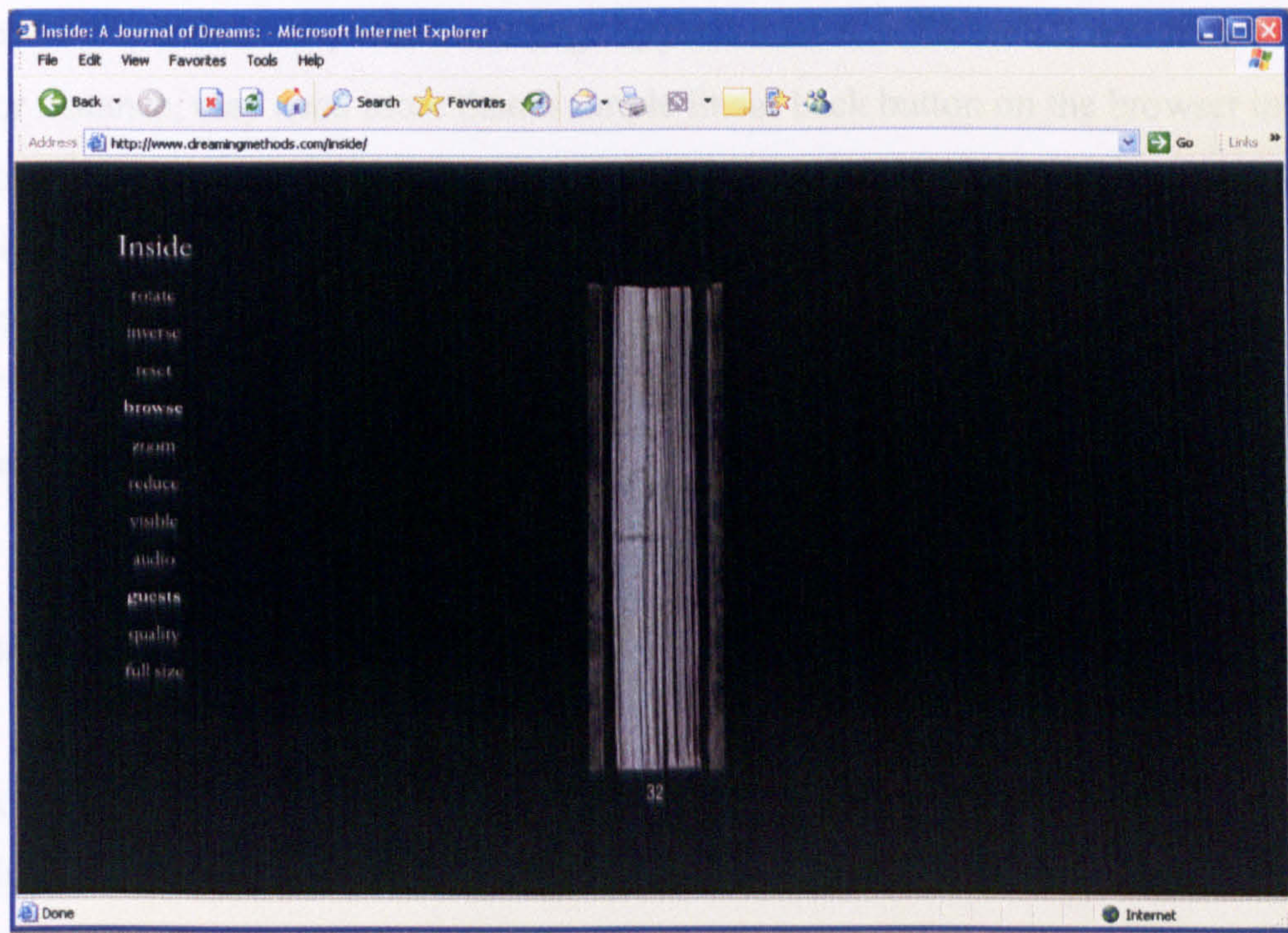


Figure 2: browse device in *Inside: A Journal Of Dreams*

It may be that creative devices such as this, allied to familiar metaphors/schemas (despite Nielsen's preference) could aid the reader to navigate, keep context, and feel oriented.

- *'Backtrack facilities need to be simple and consistent' (Nielsen 1990 p 302)*

The potential for non-linear movement through a hypertext narrative suggests strongly that backtracking facilities would be extremely important in the interface design, and yet we see that this is not always built in. The History tool in Storyspace offers some non-linear movement backwards to previously visited nodes, and conventional WWW

browsers offer a History function too, though the history is not saved from session to session and thus a break in reading, if accompanied by switching off the computer, will cause a break in the reading history.

If a hypertext fiction did not allow freedom of movement back to previously read pages, backtracking in a hypertext could therefore be considerably more awkward than in a printed novel. A densely packed and large hypertext such as Fisher's *These Waves Of Girls* for instance, may need more than a simple linear back button on the browser in order to allow readers to keep their 'place' in the narrative.

Nielsen's concluding point on this feature is that backtrack facilities should act 'as a lifeline to get out of trouble' (Nielsen 1990 p 302), that trouble perhaps being, in the case of hypertext fiction, disorientation, loss of narrative progression, or the need to pick up the reading again after a break.

4.5 Summary

The above discussion of interface issues relating to hypertext fiction design suggests the following summary points and associated key questions that need to be incorporated into the empirical study of readers' responses to hypertext narratives:

- The book is being remodelled by the digital medium in which hypertext exists. *Is the reader 'seeing' a book or website, when he approaches an hypertext fiction?*

- Navigation facilities should enable free, contextual and orienting movement around the virtual space and the narrative. *What tools for movement through the space and narrative aid or hinder the reader in practice?*

- Metaphors can be used to unify content and interface. *What metaphors help or hinder the reader's coming-to-terms with the new style of reading that hypertext generates?*

- The interface can facilitate orientation. *Is orientation within the narrative and the hyperspace (the 'site') a key to reading pleasure?*

- Interface design can actively affect the reader/user's experience. *What design features enhance or hinder reading? Which add unhelpfully to cognitive load? Which aspects of interface design appear to contribute to a flow experience?*

- 'New' media fiction will work best when it exploits features that cannot be provided in print. *Do multi-media elements enhance the reading experience?*

Part Two

The empirical study

Chapter Five
Methodology

5.1 Overview of the approach to empirical reader response research

In the Introduction to this thesis the need was established for empirical research into readers' responses to hypertext fiction. In chapters 2 to 4 we have looked into issues relevant to the current status of hypertext fiction: the importance and nature of narrative, the influence of the form of the digital 'book' and its human-computer interface, the role of the author and reader, and the act of reading itself. Some 'gaps' and inconsistencies in the current range of understandings have been suggested, indicating areas needing to be investigated further. We now come to the empirical study of readers' responses to hypertext fiction, a study designed to explore these issues and gaps.

The empirical research effort involved the following phases (explained in section 5.2 below) of participation for readers:

1. An orientation phase in which the hypertext and interface was encountered for the first time.
2. A period of 'free reading'.
3. Following the free-reading, completion of a simple questionnaire.
4. A focussed discussion.

Below is a detailed explanation of the development and justification for this sequence of data collection and the combination of methods.

- *Audience research traditions*

There would seem to be similarities between a hypertext audience and audiences of mass communication: the members of mass audiences are widely dispersed, members do not necessarily know each other, and they could not readily 'talk back' to the senders of media messages (McQuail 2000). McQuail notes that 'the reality of people's experience

of mass print and film was always very diverse' (McQuail 2000, p 362), and it is clear that this would be the case with hypertext readers.

However, in audience research tradition, the specialisation of roles of authors, performers and spectators has been seen as central, whereas in hypertext fiction, we have already argued that the boundaries of these roles have been modified, if not entirely removed. In relation to new media, which is clearly where hypertext fiction is located, McQuail argues that

> the audience member is no longer really part of a mass, but is either a member of a self-chosen network or special public or is an individual. In addition, the balance of audience activity shifts from reception to ... interacting (McQuail 2000, p120).

Livingstone has also pointed out that whereas research into audiences of mass communication has found it difficult to access the private reactions of individuals, 'in an interesting reversal of the trend, it seems that now, in the new media environment, reception may be once again gleaned... from an analysis of use' (2004, p85).

Hence, the way to approach the experience of the hypertext fiction 'audience' would seem to be to move very close to the individual audience 'member', to treat the relationship as a participative, choice-driven one, much more like the relationship between a reader and a book than that between a viewer and a broadcast television product. Livingstone (2004, p84) in fact argues that audience research itself should move more towards an audience-as-reader/user model if it is to adapt to digital media: new media technologies are 'text-centred' and analysis should be 'text-reader' oriented.

Finally, the literature reviewed in Chapters 2, 3 and 4, all situate the examination of hypertext fiction in the fields of literature and/or human-computer interface studies. Therefore, although audience research traditions have been acknowledged, the methodology for this empirical study has largely been built from understandings in literary studies and human-computer interface research.

- *Literary studies*

Since this study is concerned to find out whether 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, a methodology was sought from the literary world, and particularly the reader-response field, where the reactions of the ludic reader are of high significance. The definition of literature is modified by the very subject matter of this study, but nevertheless, hypertext fiction is, in the main, created by a single author and it is a form that has to be read.

Thus the overarching philosophy was to treat the empirical study as a reader-response study, and work by Richards (1929), Holland (1975), Iser (1976), Fish (1970, 1980), Nell (1988), and Miall and his colleagues (1994, 1995, 1999, 2001, 2003) was interpreted and modified to devise an empirical methodology to record reader-response to hypertext fictions.

- *Interactivity, and usability studies*

However, it has been argued that 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. It has also been shown (Cavallo and Chartier 1997, Bolter 2001) that the materiality of the 'book' is an important influence upon the reading experience.

Thus, a methodology was required which could identify the active factors in interface design that influence the reader's progress through the narrative. 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, p84). Livingstone also contends that 'new interactive technologies put ordinary people's interpretive activities at the very centre of media design and use' (Livingstone 2004, p75).

Therefore, 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 reviewed (see Chapter 4) and modified to suit hypertext reading, and combined with the approaches gained from the literary field. This is an approach to reading studies that, to the researcher's knowledge,

has not been tried before, but it is believed that reliability and validity are assured due to the long tradition of methods from both disciplines (see also section 5.6 below).

- *Combined approaches*

Denscombe argues that combining research methods is 'likely to improve the quality of the research' (Denscombe 1998, p84). What Denscombe calls the 'multi-method approach' (Denscombe 1998, p84/5) allows a 'more rounded and complete' (Denscombe 1998, p84/5) understanding of the topic than would be the case if just one method were used. Denscombe further argues that to do so can increase validity, since the researcher can have confidence that the data is consistent across a variety of methods and not tied solely to one method. In the field of interface studies specifically, Ebling and John (2000) report that 'usability analysts trying to improve the design of a system should routinely collect multiple types of empirical data in any usability test' (p 295).

Denscombe and other researchers see the benefit of combining qualitative and quantitative methods. In empirical literary studies, Miall and Dobson (2001) combine quantitative measuring of reading speeds along with a qualitative discussion using extracts from readers' comments.

For the present study, data was needed about the experiences and interpretations of individuals, but on a large enough scale to enable useful conclusions to be formed. As Lindlof points out, 'one does generalize in qualitative research, but not in a way that tries to attain the scope of a universal law' (Lindlof 1995, p57). A package of data gathering tools that offered a view of individual experience (Iser's 'real reader' [Iser 1976]) and an approach to an understanding of a wider phenomenon (the varying forms of hypertext narrative) was therefore needed.

Huberman and Miles (1994) argue that qualitative research designs should be custom built, and so the four-phase sequence detailed in 6.2 below was designed to suit this study's research objectives.

5.2 Methods

- *Observation of readers' activities using 'think-aloud'*

The use of a 'think-aloud' technique as the starting phase for the empirical study was selected, having considered various ways of gathering and recording data from reader-participants. Richards (1929) asked reader-respondents to comment in writing upon selected poems; Holland (1975) used semi-structured interviews; Nell (1988) observed readers; David Miall has developed his Literary Response Questionnaire with Don Kuiken (1995); Eva Thury (1998) observed users' browsing behaviour when using websites; and Sonia Zyngier has used her 'quasi-essay questionnaire' (Zyngier 2003 online) to elicit reader's responses to literary texts.

However, the significance of the interface in this study also prompted investigation of research methods used in the field of human-computer interaction (HCI), and Nielsen et al note that think-aloud can be employed by 'non-usability specialists (2002, p102), suggesting its transferability to a project such as this current study. Think-aloud is a standard and key method in usability testing (Kjeldskov et al 2004, Nielsen et al 2002). Nielsen et al note that think-aloud is often referred to as '*the* usability method and used both in laboratory settings, workshops and field testing' (Nielsen et al 2002, p 101). Ebling and John (2000) audio-taped their participants using a system of 'thinking aloud' to elicit user reaction to interface elements. Ebling and John (2000) contend that this method gathers more valuable data than any other. Kjeldskov et al (2004, p233) say that it is 'well-known that while being more time-consuming, user-based evaluations (e.g. using the think-aloud protocol)...tend to facilitate identification of a higher number of problems and more relevant problems'. 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. Such a method could therefore productively be applied to gather data about a reader's reactions to the hypertext*fiction* interface.

Ebling and John (2000), Gee (2001), and Kjeldskov et al (2004) use a task-driven approach to think-aloud, but this was not considered helpful for the present study,

particularly since a reader cannot be expected to approach reading for pleasure as a task. Nonetheless, the idea of allowing the reader some interface-learning time seemed beneficial and this was borne out in the pilot study: readers did at first find themselves concentrating more on the interface and its idiosyncrasies than the story itself. Thus unobtrusive audio-taping of a short think-aloud session was employed in the initial participant phase of the study.

Wright and Monk (1991) report that in their think-aloud sessions, used by the actual designers of interfaces, 'the users are told to think of themselves as co-evaluators of the system' (Wright and Monk 1991, p 55). Since connections between the interface and the readers' experience of reading were being sought, it was logical and natural to ask the reader to feel involved in this initial evaluation process, especially because the subsequent activities were focussing heavily on aspects of reader involvement in the narrative. Therefore occasional questions were asked of the user to 'find out about their understanding of the operations available, their interpretation of the screen and so on' (Wright and Monk 1991, p 55).

- *Potential problems with think-aloud*

A potential problem in think-aloud is the extra cognitive load required of a reader who is perhaps struggling with the interface itself, and simultaneously having to verbalise those struggles. However, Nielsen et al (2002, p105) say that reader-users 'can verbalise what (they) are perceiving while in the process of perceiving'. Furthermore, the use of think-aloud at the initial stage of interface familiarising was likely to be the most complete and detailed description of reader's use of the interface (Ebling and John 2000; Kjeldskov et al 2004; Nielsen et al 2002).

Therefore, though the tendency in think-aloud for two cognitive processes to compete (Nielsen et al 2002) is recognised, it was considered that think-aloud would gather very illuminating data at a particular point in a reader's encounter with an interface-driven narrative form.

- *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. In order to find out what readers felt at an imaginative and emotional level about the fiction they were being asked to read, it was necessary to build into the empirical study a time and place for ludic reading to take place. Various options were considered:

Usability studies do not conventionally concern themselves with the user's appreciation of a narrative structure and an aesthetic experience (Gee 2001). Literary studies (Nell 1988, Miall and Dobson 2001) *have* provided readers with a distraction-free environment in which to read whilst the researcher records and/or monitors their progress; but the laboratory environment used by those studies was considered too artificial and restricting to satisfy the research objectives of this study.

Gee's study is of particular interest and relevance since she herself points out that 'little research exists that focuses on usability studies of online text designed for pleasure reading' (Gee 2001, p3). Gee allows 'free-reading' (Gee 2001, p10) time, albeit within a laboratory environment, and with a 20 minute time limit on the reading. The laboratory setting was perhaps necessary for Gee because she wanted to observe reader's reading rates, but this is not an objective relevant to the present study. Gee does not explain what effects the apparently very tight time limit would have upon her readers' appreciation of the narrative, but there would seem to be no good reason to impose this restriction upon readers, if a more natural time span could be offered.

However, the free reading phase seemed likely to be very productive in a study of ludic reading responses. Therefore, the reader was asked to 'take the fiction home' and read at will over a longer period, in an environment of the reader's choosing. The benefit of this phase of the study was that it allowed each reader, having been familiarised with the potentially disconcerting interface, to thoroughly engage with the narrative itself, in circumstances as near as possible to those they would choose when reading a conventional fiction.

Two weeks were allowed for readers to read the hypertext, which was considered enough time for any of the selected hypertexts to be 'completed', or of course abandoned if the reader did not enjoy the experience.

- *Potential problems with free-reading*

There was no way of monitoring what kind of 'effort' each reader was prepared to give to the reading of a piece they may already have identified (in the think-aloud sessions) as difficult or unappealing.

It is therefore acknowledged that the free reading time may have actually been a very short amount of activity indeed, or a complete exploration of the hypertext in question. This actuality of individual reader's behaviour is of course significant, and although it presents some awkwardness in terms of standardising the test, it also allows readers to truly interact with the hypertext in their own way, which more fully meets the requirements of the research objectives. It is important to note also that the questionnaires and discussions are able to get at these individual differences and uncover the possible reasons for them.

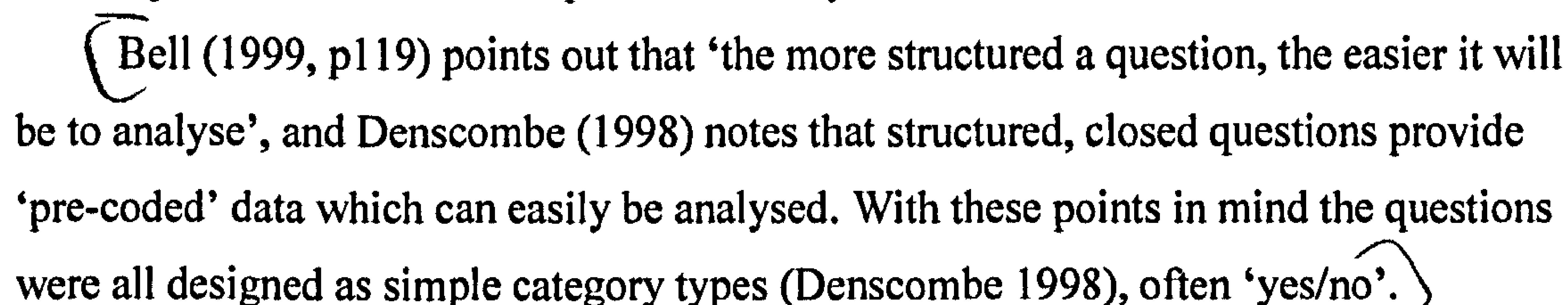
- *Questionnaires*

Several of the empirical studies from literary research and usability studies have used post-reading questionnaires as a way of structuring the gathering of data, helping to reveal patterns of user behaviour and themes in readers'/users' concerns (Miall and Kuiken 1995, Muylle et al 1999, Nell 1988, Wenz 1999, Gee 2001, Kjeldskov et al 2004). These uses of questionnaires bridge the critical and methodological 'divide': for example, Miall is interested in response to literary features within writing, while Gee is concerned with responses to interface functions. Nielsen et al (2002) note that in the HCI community, think-aloud is often combined with questionnaires. It seemed reasonable, given the research objectives of this study, that post-reading questionnaires could offer an insight into readers' reactions to their hypertext piece, and build usefully on the data gathered via the think-aloud sessions.

The use of the questionnaire was thus an attempt to capture affective responses to the narrative and more fully developed cognitive responses to the interface. Furthermore, from the questionnaire data, key emerging themes of concern to readers could be ascertained and then probed more deeply in the discussion.

- *Questionnaire design and usage*

Zyngier (2003), in an empirical study of readers' attitudes to literature, uses a 'quasi-essay questionnaire' designed to allow participants to express themselves freely, but it was felt for the present study that freedom of expression was substantially allowed for in the think-aloud and discussion sessions; so, the questionnaire used here was built around closed questions for ease of response and analysis.



Bell (1999, p119) points out that 'the more structured a question, the easier it will be to analyse', and Denscombe (1998) notes that structured, closed questions provide 'pre-coded' data which can easily be analysed. With these points in mind the questions were all designed as simple category types (Denscombe 1998), often 'yes/no'.

Denscombe notes that questionnaires are useful when the data required is brief and straightforward, and when there is a need for standardised data (Denscombe 1998, p88). The point of the questionnaires in themselves was not to provide large-scale quantitative data which could be extrapolated out to the general population of all readers everywhere; it was hoped to provide quickly visible trends within the participants' responses which could be explored more deeply in the subsequent discussions. Thus the kind of data returned by the questionnaires was appropriate for this phase of the study.

The key elements of the questionnaire were built from the literature review and from the pilot study.

The empirical work of Nell (1988), and Miall and Kuiken 1995 and 1999), and the theoretical reading models of Nell (1998), Iser (1976) and Brooks (1984), provided items for Part 1, looking at the reading experience generated by literary texts.

The usability studies of Nielsen (1990), Kendall (1998), Ebling and John (2000), Barrett (2000), Gee (2001), Nielsen et al (2002), and Kjeldskov et al (2004) contributed to part 2 items, examining the interface design and user-friendliness.

Part 3 was to some extent experimental, designed by the researcher as an original contribution to the understanding of story-interface dynamics: the purpose of Part 3 of the questionnaire was to investigate the specific 'special' features of hypertext fiction, such as navigation, multi-linear structure, the hyper-link, and closure, drawing on the critical material of, amongst others, Bernstein (1998, 1999), Douglas (1994, 2000, 2001), Murray (1997a, 1997b, 2001), Jackson (1997a) and Joyce (1997). See appendix 8 for full specification of questionnaire.

- *Potential problems with questionnaire use*

The obvious limitation in the use of the questionnaire is that it restricts the answers able to be given by participant readers. However, the design of each item allowed respondents to expand upon answers of they so wished, and the discussion phase was able to 'open out' readers' responses.

Bell (1999) speaks of the risk of non-response to mailed questionnaires, where the questionnaire is the main or only point of contact between researcher and respondent. But since all participants were already 'known' to the researcher, through the introductory emails, presentations, and think-aloud sessions, and therefore rapport and participation already established, questionnaires could safely be distributed and returned via email.

- *Focussed discussion*

The group discussion is of course a staple of reading groups and book clubs and classrooms: one argument for using such a tool therefore is that it would be a familiar and unthreatening way to involve readers in an exploration of their reactions to the piece they had read.

Furthermore, in order to more fully understand readers' responses to the interface and the narrative, it was clear that a final phase of investigation would be necessary, at a point when each participant had completed their reading. A fuller picture of their reactions, from initial encounter, through free reading, to reflection on the whole experience, would thus be gained.

In a more general social science context, Puchta and Potter note that focus groups are commonly used in a 'final follow-up phase that pursues exploratory aspects of the analysis' (Puchta and Potter 2004, p7). They also point out that focus groups can be used 'as an adjunct to other research methods such as individual interviewing' (Puchta and Potter 2004, p7). Lindlof argues that focus groups can 'create settings in which diverse perceptions, judgements, and experiences concerning particular topics can surface' (Lindlof 1995, p174).

Referring specifically to usability research, Nielsen says that focus groups alone are inadequate and that 'the only proper methodology is to sit users down, one at a time, and have them use the system' (Nielsen 1997 online). However, assuming that other methods of data collection are in place, Nielsen indicates that 'focus groups… can help you assess user needs and feelings both before interface design and long after implementation' (Nielsen 1997 online), and it can reveal what users want from a system.

Appropriately therefore, think-aloud, free reading and questionnaires were 'rounded off' with focussed discussion sessions.

Effectively the focus groups were 'semi-structured', in that the think-aloud and questionnaire data were used to suggest key issues or themes for discussion, but the researcher allowed participants to develop aspects about which they felt strongly. Puchta and Potter (2004) state that the moderator's (researcher's) task is to balance control of the discussion, discouraging irrelevant material, whilst encouraging participation. In practice, this last duty was a fairly easy job, since all the participants, by the time they reached the discussion phase, were very keen to have their say!

- *Potential problems with discussion groups*

Nielsen (1997) points out that focus groups can only elicit what people say, and that there is a difference between what people say and what they do. It is also possible that participants will be influenced by other group members to say certain things. To counter this risk, during the discussion sessions the researcher ensured that each group member had a chance to speak, and that individual opinions were always given credence. A further precaution against these potential deficits was the implementation of the

individual think-aloud observations and the individual, anonymous, responses to the questionnaires.

Given that the themes explored in the discussion were actually raised by the readers themselves via the think-aloud sessions and questionnaire returns, it is believed that researcher influence was reduced to an acceptable minimum.

5.3 Procedure

- *Pilot study*

During December 2005, a pilot study was run, employing and testing the methods and sequence already outlined.

Six participants were chosen, all familiar with computers in everyday use, but not computer or interface specialists, to fit in with the 'experienced' category of Ebling and John (2000). Participants chose their narrative from a range of offered hypertexts, in order to enable readers to match themselves to a piece they might enjoy (Nell 1988).

The hypertexts studied were *Lasting Image* by Michael Joyce and Caralyn Guyer (chosen by two participants), *The Diary of Anne Sykes* by Andy Campbell, *My Body* by Shelley Jackson, and *These Waves of Girls* by Caitlin Fisher (two participants).

It became clear that the think-aloud sessions could run on into very lengthy 'conversations', which, although enjoyable, would eventually place an impracticable burden of time upon the researcher, and may produce unfocussed transcripts. For the full study therefore, the think-aloud phase was restricted to discussion only of the interface, and avoided entering into ad hoc conversations about the narrative or hypertext in general.

The questionnaires proved to be useful as guides to emerging areas of interest or blockage for participants, and so, following a few small changes to wording and content, the questionnaire was used as in Appendix 8.

The discussion session was arranged at a time convenient for all participants, and proved to be enjoyable for the participants and productive for the researcher.

- *The full study*

1. Readers were asked to read part of a single hypertext while the researcher observed and recorded their use of the interface. Readers were prompted to give 'think-aloud' responses to the interface as they used it for the first time. Each reader read only one text, though a range of different 'types' of hypertext was studied across the whole participant sample (see 5.5 below for hypertext sample). These sessions took place at participants' regular meeting venue (e.g. writers' group met at local library).

2. Following the think-aloud session, readers were asked to read the hypertext 'freely' (Gee 2001, p10), in an environment they were comfortable in (cf. Nell 1988). Readers were either given a CD with the selected hypertext on it, or they were provided with the website address (URL) so that access would be simple at their home computer.

3. Participants were provided with a post-reading questionnaire via email, or in some cases a paper copy. These were emailed back to the researcher, posted in prepaid envelopes, or collected by the researcher.

4. At a pre-arranged point, given that everyone in the participant groups had read their texts and returned their questionnaires, discussion groups were organised. Discussion sessions were always arranged at the participants' 'home' venues.

In five instances, participants who could not attend the discussion group session were interviewed singly, and in two of these instances had to be interviewed by telephone. It is considered that the slight lack of standardisation in these readers' experience of the research process was outweighed by the benefit of 'finalising' their feedback. In terms of satisfying research objectives, key themes and issues raised by the think-alouds and questionnaire returns could still be pursued.

5.4 Participant Readers

50 readers volunteered to take part in the study, with a total of 36 readers completing the full empirical study of four 'phases' of reading and discussion. The data from the 14 readers who took part in the first phase but did not return questionnaires or attend the final discussion has been noted but not used in the formal analysis presented in Chapters 6 to 10 below.

- *Defining the reader*

Silverman (2005) points out that 'many qualitative researchers employ... purposive, and not random, sampling methods. They seek out groups, settings and individuals where... the processes being studied are most likely to occur' (p48). The readers who took part in this study were 'chosen' purposively for various key 'qualities' which it was considered would best suit the research objectives.

Gee (2001) defines the typical hypertext narrative reader as 'someone who enjoys reading as a hobby, is familiar with Windows, and spends approximately one hour on the Internet a day' (p8). It is logical that participants should be at least keen readers of fiction in print, or there is likely to be no interest in hypertext fiction at all; and a base line of familiarity with computer operating systems (whether Windows or Mac OS is irrelevant here) would be essential if the study were not to become bogged down with a lengthy process of instruction in the basics of computer operation.

However, Gee's prerequisite of one hour a day on the Internet is not supported in any of the other literature concerning empirical testing of interfaces, and there does not seem to be any reason either why this should be a determining factor upon the enjoyment of hypertext fiction. Accordingly this criterion was not adopted.

The 'sample' for this study was therefore confined to those readers with a keen interest in and appreciation of print fiction who were 'experienced' computer users (Ebling and John 2002); these should also be readers who, once introduced to the objectives of the project and the basic nature of hypertext, were open to the idea of reading something 'new'.

All readers should be competent ludic readers, using Nell's definition of this (Nell 1988). A competent reader for Nell is one who has read enough fiction to be aware of and react to the various narrative cues and plot conventions used by authors. Although this study did not set down any hard and fast criteria to define competence, beyond an informal ascertaining that each reader was a regular and keen reader, it is interesting here to refer back to the literature around reader response research, and note that Richards (1924), Iser (1976), and Fish (1970) all give, in varying degrees, status to the 'informed' reader. This researcher does not argue that only 'informed' readers' views can be considered valid in the study of literary responses, but for this study's objectives to be met, it was necessary that readers did know something about fiction, because it would be extremely difficult for them to comment on the perceived differences, good or bad, between print fiction and hypertext if they did not have some prior understanding of the way narratives work, and in particular how narratives have worked on *them*.

- *Forming participant reading groups*

Reader 'groups' were identified, either by the researcher approaching already established groups, e.g. local book group, or by forming a group from positive responses to requests for participation, e.g. Masters students at Bournemouth University. Each group was allocated one hypertext fiction. (see 5.5 below)

In the case of the already established reading groups, the researcher visited the group's regular meeting place, e.g. group organiser's home, and gave a short presentation about hypertext fiction and the aim of the research project. Willing readers were then able to come forward and be contacted subsequently to arrange the think-aloud sessions.

When attempting to form reading groups, the researcher looked for already existing situations where groups regularly met to discuss fiction, or where they worked together:

1. Bournemouth University academic and support staff – group of six read *afternoon, a story*
2. Bournemouth University academic staff – group of four read *These Waves of Girls*

3. Bournemouth University Masters students – group of six read *The Virtual Disappearance of Miriam*
4. The Arts Institute at Bournemouth (two students), and Ensbury Park Library reading group (two) formed a 'group' of four, and read *253*
5. Purbeck Upper School – four sixth formers read *Amelie*;
6. Strouden Park Library Writers Circle – group of six read *L0ve0ne*
7. Southbourne Book Group – group of six read *Of Day, Of Night.*

In every case more readers began the study than finished it, which accounts for the varying group sizes. It is acknowledged that this lack of consistency of group size might be seen to 'skew' data, but it is difficult to see how 'complete' participation could be assured.

Matching readers to hypertexts was seen as an important but awkward aspect of the study. Nell (1998) speaks of the significance of readers' understanding of their own preferences, and it would clearly influence the data to be gathered if readers were faced with genres of fiction they would not normally read. It was however extremely difficult to match reader and text entirely according to reader preference, given the geographical and practical factors involved in accessing readers in workable groupings. Thus a 'best guess' approach had to be adopted.

For example, *Amelie* was given to sixth formers since it is a light-hearted love story, and a film adaptation, which might appeal to younger readers; *L0ve0ne,* on the other hand, was given to the Strouden Library-based group, and the researcher had no control over which readers from the group at that venue would come forward to participate in the study.

5.5 Selected Hypertexts

- *Game, literature or something else?*

There is no clear definition in the reviewed literature as to where interactive games end and literary narratives begin, but a selection criterion for this study was the 'literariness' of the narrative. Clearly, this is a highly subjective and contentious concept, but narratives were chosen that display the features of novels, e.g. plot, characters and character development, thematic ambition, dialogue (Forster 1927, Watt 1957, Baldick 1990). This set of criteria alone would not preclude *all* interactive games, but computer or console games involve the taking on of a character role of some kind, (an 'avatar' in computer game parlance), the gathering of points or the overcoming of obstacles, towards a final result. Interactive narratives of the type this study has been discussing do not feature any of those 'gaming' elements. The reader is in the role of audience, a participating audience certainly, but not a player.

A judgement also had to be made as to which available hypertexts were actually 'any good' and which would best move the study toward a fulfilment of the research objectives. The researcher considered critical reviews, coverage in the academic literature, the profile of the writers involved, and finally his own sense that the pieces chosen, as a set, offered as many variations of writing and interface styles as could be accommodated within the constraints of time, resources, and the demands of analysis.

One unpublished piece was included: *Amelie* (2005), by Izaro Ansotegui. This was a Masters project, created at Bournemouth University, under this researcher's supervision. It may be considered 'risky' to include an unreviewed and 'amateur' piece in the study, but it was believed that this narrative demonstrated, at a high level of expertise and creativity, one potential way forward for hypertext in its blend of text and images adapted from a well-known feature film.

- *The delivery platform as a selection factor*

We have already seen that empirical studies of user activity in relation to hypertext fiction are very limited. Kendall (1998) describes a brief survey of hypertext writers in which he outlines the varied informal testing methods used by writers. Gee (2001) is the only empirical reader-study specifically directed at a native hypertext fiction, and Gee's is the only study that attempts to relate narrative appreciation to interface elements.

However, Gee's study only looks at one hypertext (Bill Bly's *We Descend*) and only considers the Storyspace interface, a particularly idiosyncratic platform that does not represent the full range of possibilities for interface design in hypertext fictions.

Therefore, in order to test a range of interface features, seven different hypertexts were examined, using different delivery platforms and interface design approaches. This study seeks to understand how readers react to a new form of literary narrative, and so examples that feature audio, visual and animation elements were included in the empirical tests.

A 'continuum' of hypertext styles was selected so that some sense of the comparative advantages and disadvantages of the text/interface/multimedia balance might be assessed. The hypertexts chosen for study were:

Afternoon, a story (1987) by Michael Joyce

LOve One (1994) by Judy Malloy

253 (1996) by Geoff Ryman

These Waves of Girls (2001) by Caitlin Fisher

Amelie (2005 unpublished Masters project) by Izaro Ansotegui

The Virtual Disappearance of Miriam (2000) by Martyn Bedford and Andy Campbell

Of Day Of Night (2004) by Megan Heyward.

Details and screen illustrations follow overleaf:

Afternoon, a story (1987) by Michael Joyce. Presented on CD-ROM, and uses the Eastgate Systems unique Storyspace interface. It is entirely text on plain backgrounds, in short chunks or 'lexias'. It is widely considered to be the first hypertext novel, and is examined extensively in the literature (see especially Douglas 2000, and Walker 1999). Michael Joyce has written extensively on hypertext fiction theory and practice.

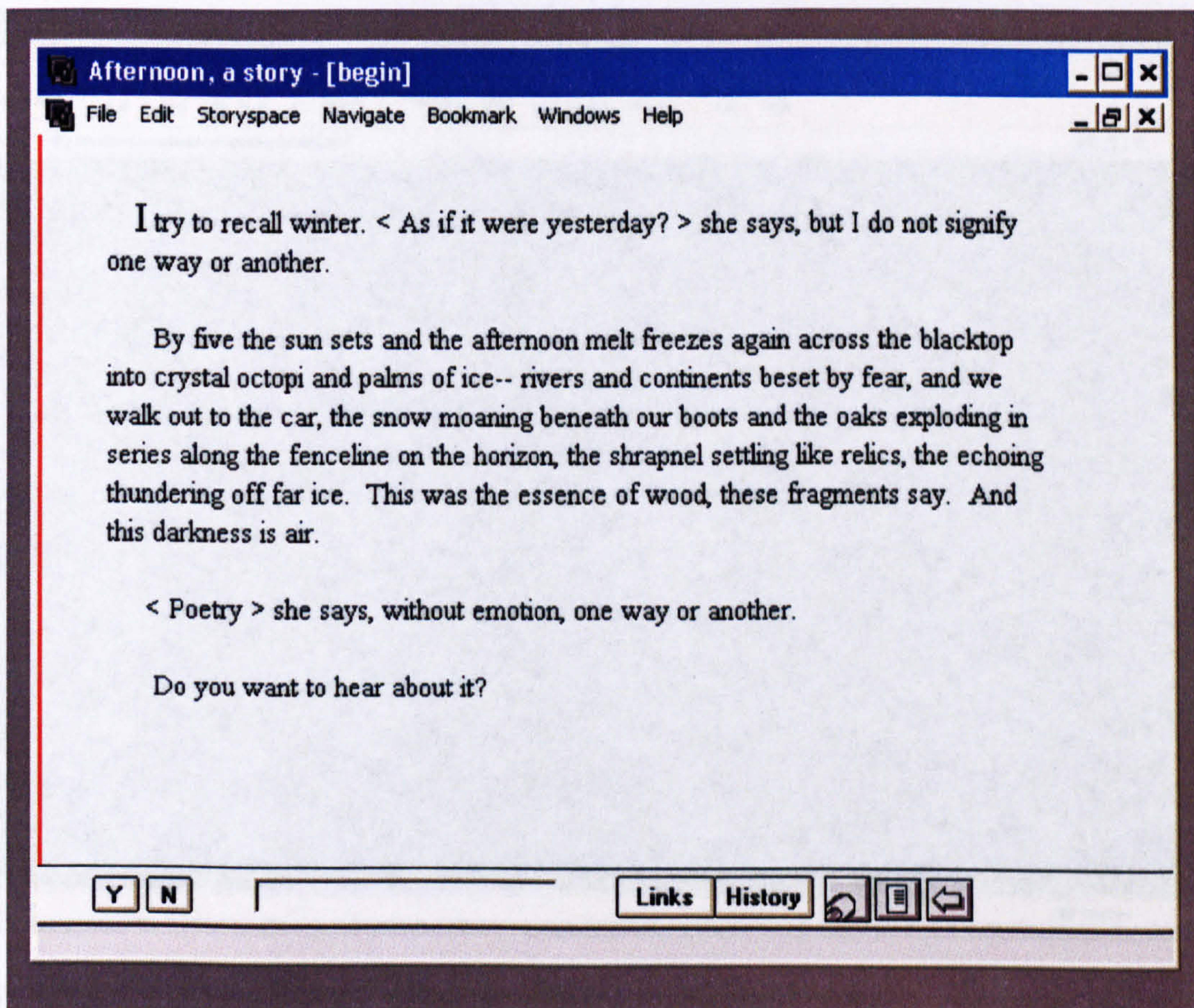


Figure 3: screen from *afternoon, a story*

LOve One (1994) by Judy Malloy, at http://www.eastgate.com/malloy/welcome.html. A text-only piece, which uses an unusual linking system of coloured lines, and various frames options to vary the on-screen display of the text. Molloy has written several other hypertexts, published by Eastgate and is active in the online writing community, currently editing 'Words on Works' in *Leonardo Online* (http://mitpress2.mit.edu/e-journals/Leonardo/isast/wow274.html).

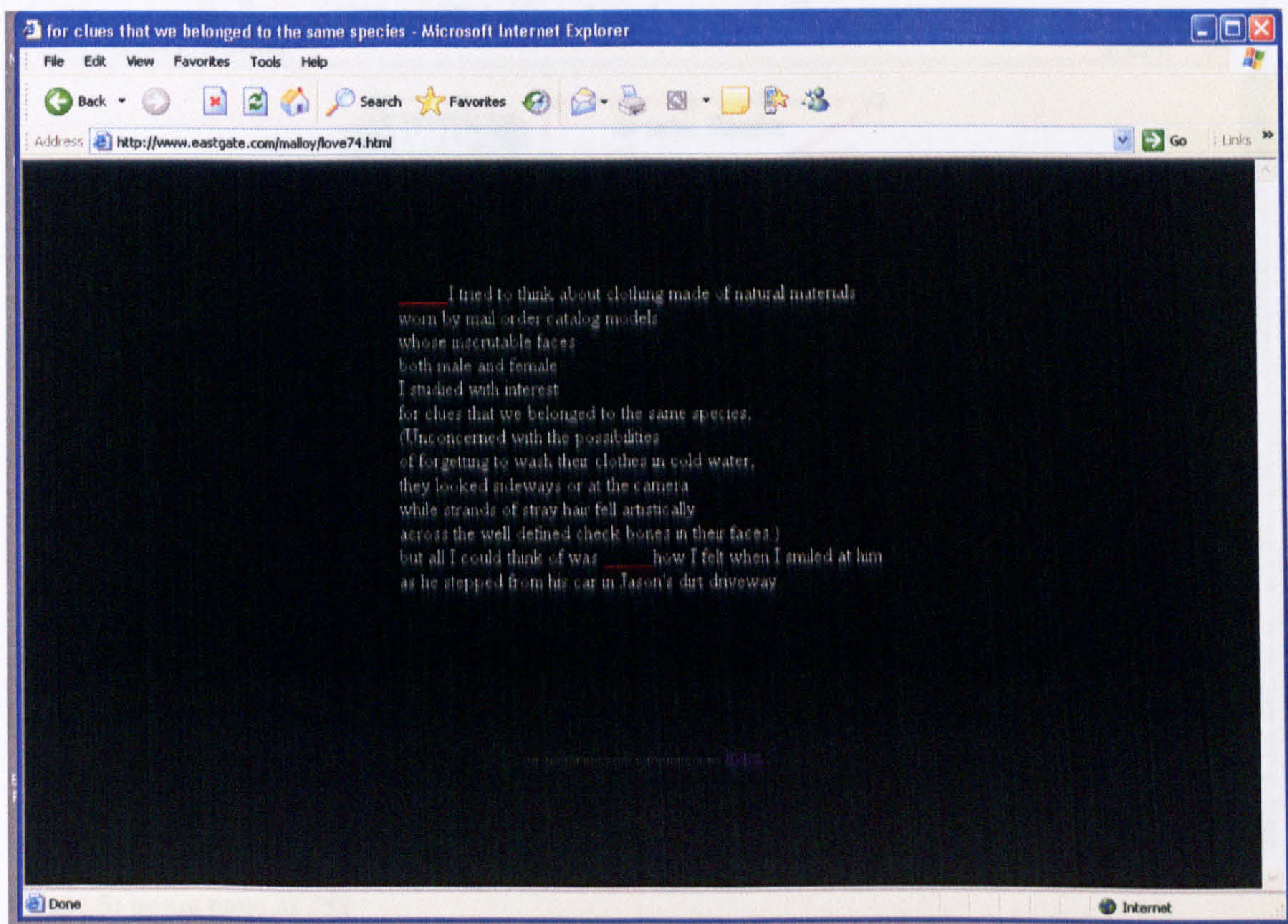


Figure 4: typical screen from *LOveOne*, showing two hyper-links in red

253 (1996) by Geoff Ryman, at http://www.ryman-novel.com. This is organised entirely around plans of tube train cars. It is text-only, with one graphic menu at the start. Ryman is widely published author of print fiction. This piece has won several awards, including interestingly, the 1998 Philip K. Dick award, in a conventional (linear) book version.

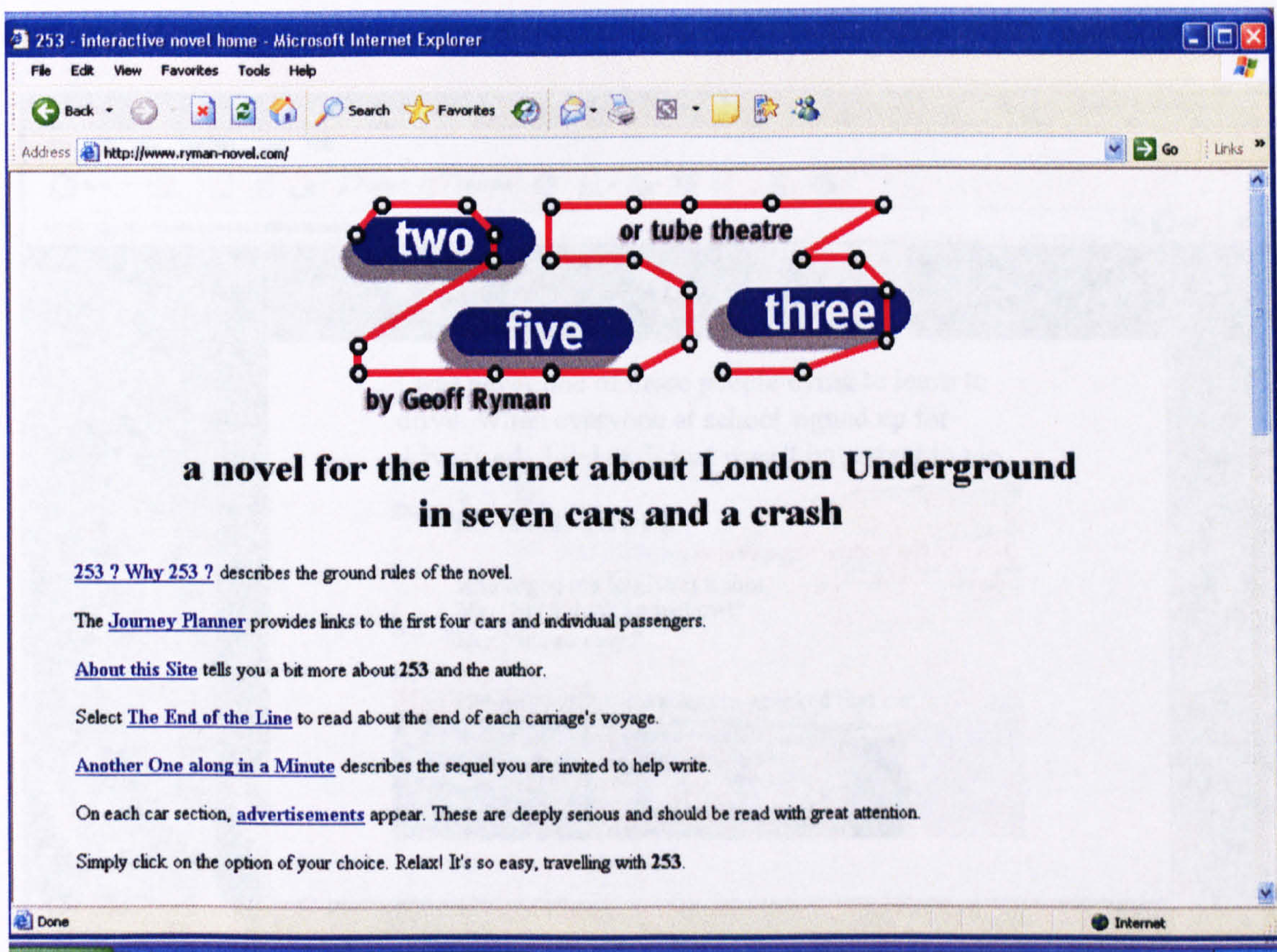


Figure 5: home page of *253*

These Waves of Girls (2001) by Caitlin Fisher at http://www.yorku.ca/caitlin/waves/navigate.html. This piece features long or short screens of text, combined with images and sounds. It won the 2001 Electronic Literature Award for Fiction, and has been widely praised by amongst others, David Miall (2003). Fisher is active in research and critical writing around hypertext.

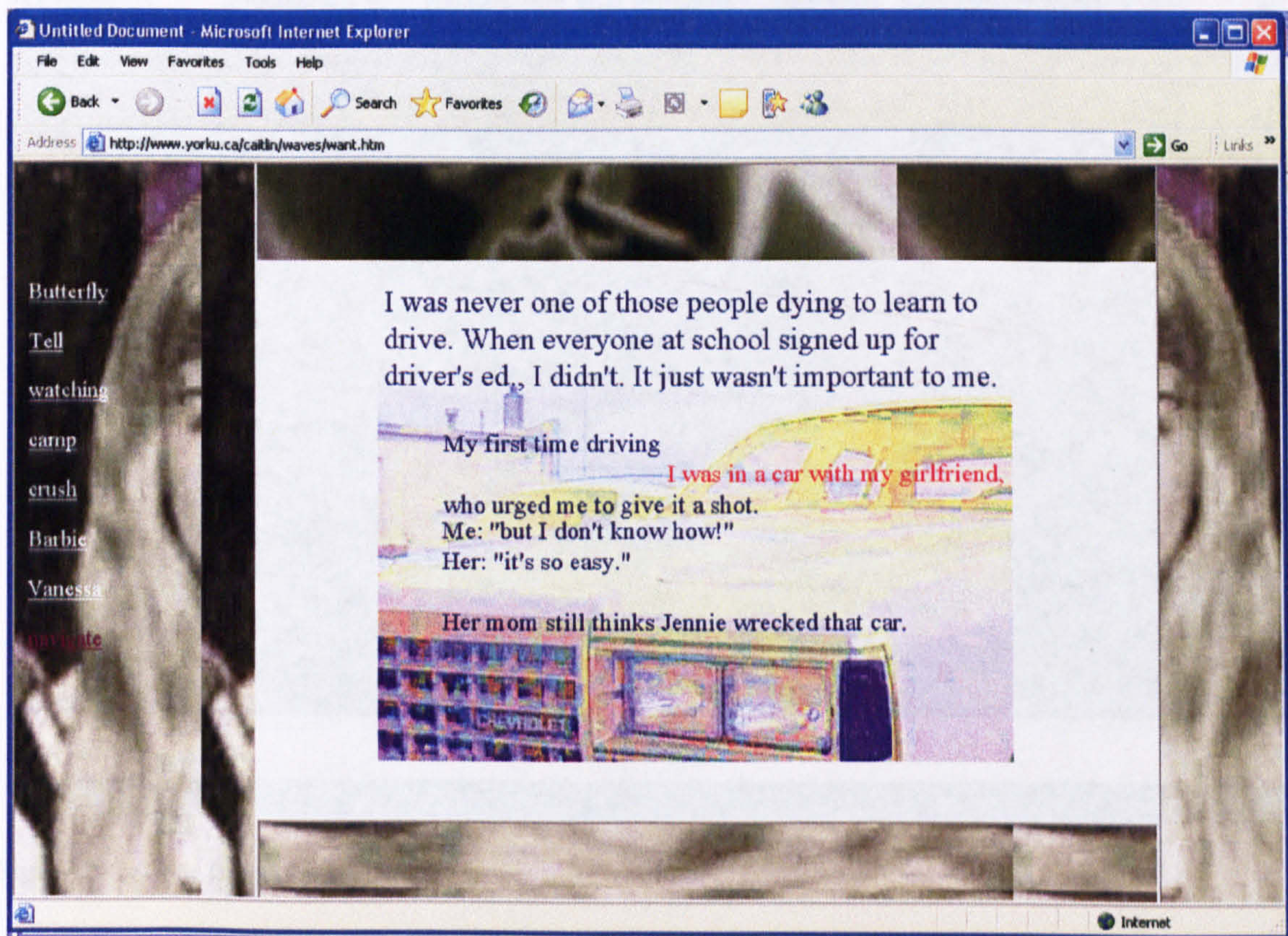


Figure 6: screen from *These Waves Of Girls*

Amelie (2005 unpublished Masters project) by Izaro Ansotegui. A Flash generated piece, running on Windows Media Player or Real Player, on- or offline. It is mainly text, with photographic illustrations and an interactive menu bar which offers an ‘alternative’ narrative structure.

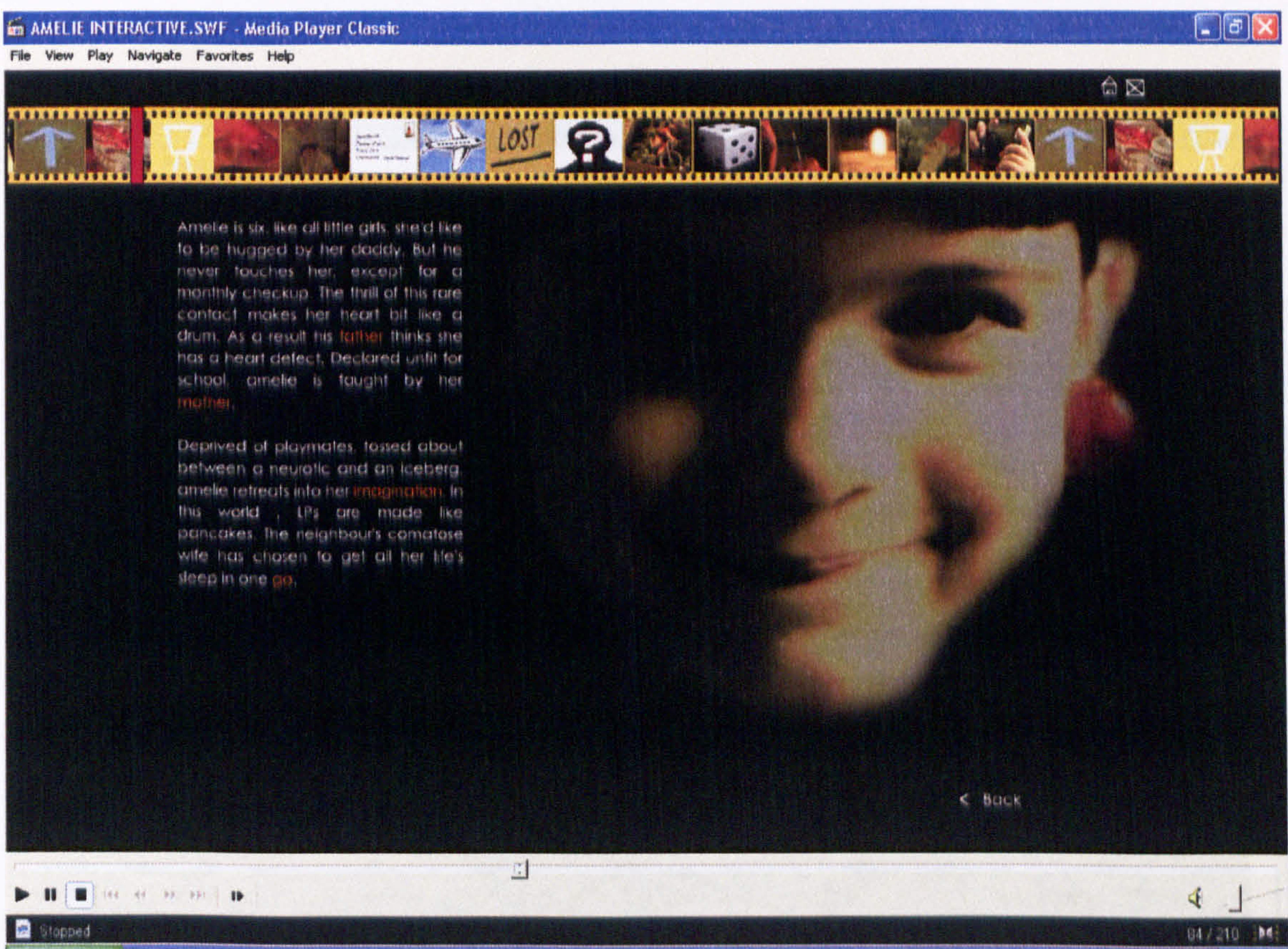


Figure 7: screen from *Amelie*

The Virtual Disappearance of Miriam (2000) by Martyn Bedford and Andy Campbell at http://www.dreamingmethods.com/miriam. Highly interactive with animated words and images, as well as sounds and musical backing track. Campbell is the main writer/ developer at *Dreaming Methods*, and presented a paper on new media writing at *Incubation 2*, Nottingham Trent University, in 2002.

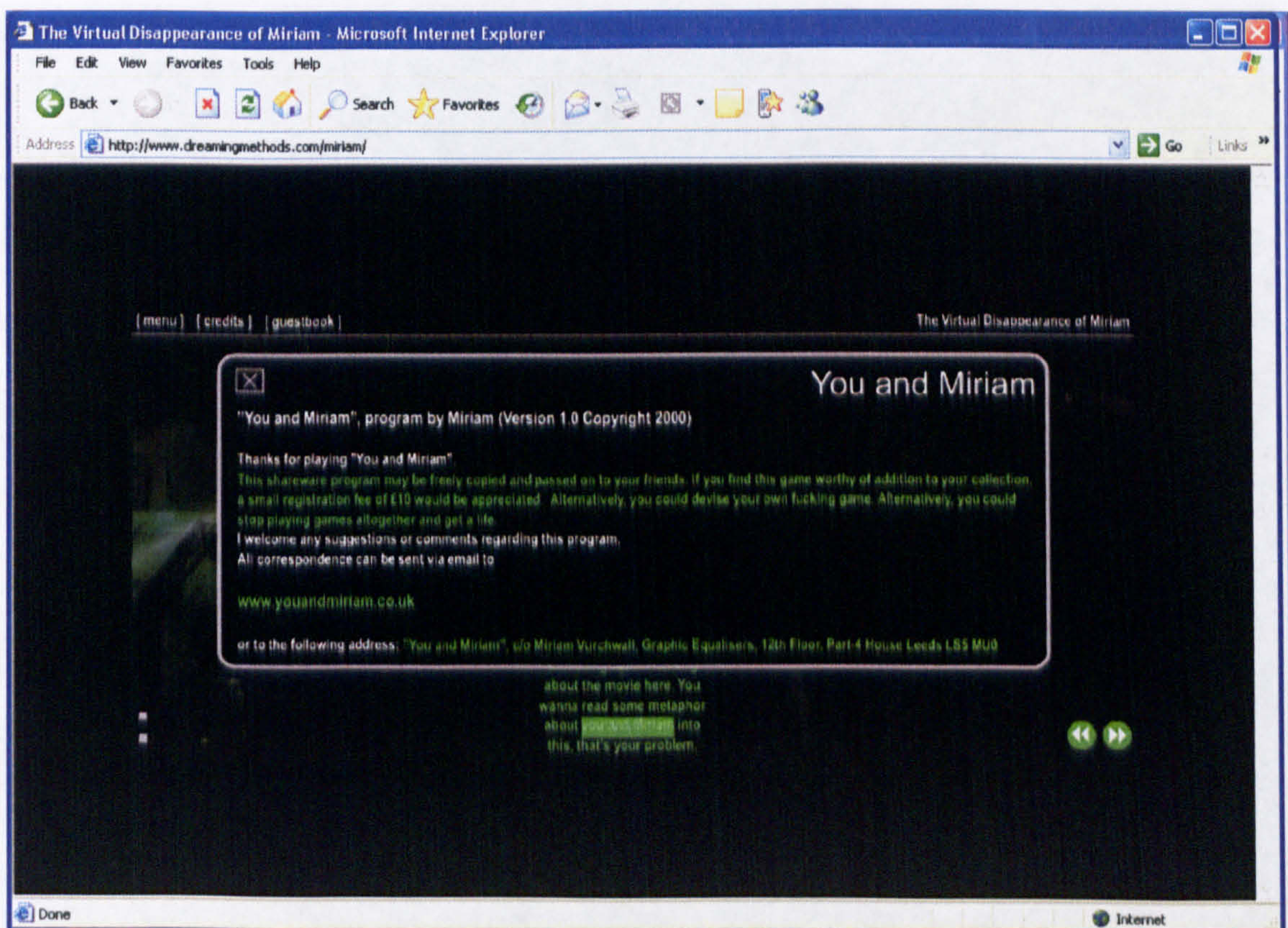


Figure 8: screen from *The Virtual Disappearance Of Miriam*

Of Day Of Night (2004) by Megan Heyward. A CD-ROM delivered piece. Heyward received funding from the Australian Film Commission to make *Of Day, Of Night*. It is highly visual, with words, images, video, and sound, and is also the first 'hypertext' to be published by Eastgate using Director, rather than Storyspace, as a delivery platform. Heyward is a well-known new media 'artist'.

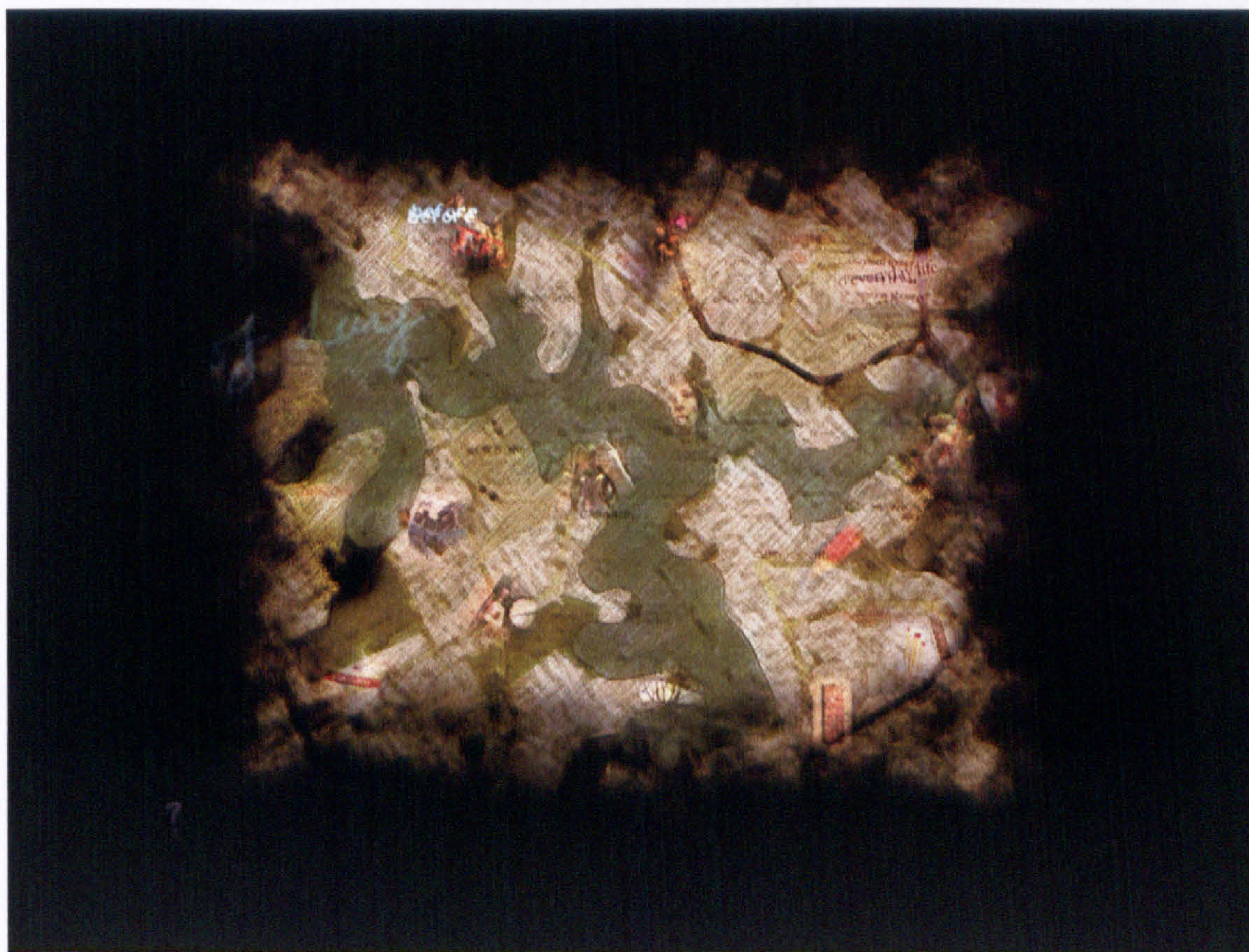


Figure 9: the interactive map graphic in *Of Day, Of Night*

5.6 Analysis

- *Overarching philosophy and practice for analysing qualitative data*

This research is at its heart a reader-response study and an approach to analysis was required that allowed that response to generate the findings, and to 'direct' the analysis. Silverman (2005) notes that the 'narrative' approach to data analysis sees 'respondents' answers as *cultural stories*' (Silverman 2005, p154). This idea fits very well with core reader-response concepts as discussed in Chapter 2, and places belief in the authenticity of experience (Silverman 2005).

The study collected 36 think-aloud transcripts, 36 questionnaire returns and 12 discussion transcripts, a total of 84 individual documents describing the experiences of the readers who took part, reporting on seven hypertext fictions. The discussions alone accounted for around 58,000 words to be read, interpreted, analysed and discussed. From this bulk of all-potentially-useful data, the problem is how best to 'distil' a large amount of 'raw' material into useful conclusions.

Huberman and Miles (1994), explain their 'data reduction' approach. This sequence, which includes each step from initial research planning to eventual conclusions, very logically moves the data from its bulky, unprocessed state into smaller, usable chunks which more easily lend themselves to analysis and discussion. A customised version of this process is outlined below, showing how use was made of Huberman and Miles' 'tactics' for this study's particular needs, in order to 'generate meaning' (Huberman and Miles, 1994 p432):

1. 'Noting patterns and themes', 'seeing plausibility' and 'clustering' by 'conceptual grouping' were used to begin to interpret the data from the think-aloud and discussion transcripts.

2. 'Making contrasts and comparisons' was a way to identify what might be seen as simple differences between individual readers and which were differences between hypertext features. Similarly this tactic allowed common threads to be more clearly seen.

3. Examining variables to 'unbundle' those that might have been prematurely grouped, 'subsuming particulars into the general', and noting relations between variables

were necessary analytical procedures in the effort to find significant connections between the three data sources.

4. 'Building a logical chain of evidence' was the overall goal of the preceding stages of analysis. A sequence of analysis, following the chronological line from think-aloud to discussion, looking for patterns and themes, contrasting and comparing, relating variables, should all lead to an eventual 'conceptual/theoretical coherence', reflecting the data and the relevant literature already reviewed (Huberman and Miles 1994, p432).

- *Thematic analytical coding*

In order to begin to analyse the qualitative data, 'analytic coding' (Denscombe 1998, p211) was carried out, following stage 1 of the data reduction process outlined above: this places the data in more viewable chunks or categories. Coding of qualitative material along thematic lines is a 'well-established' practice, (Silverman 2005) but the disadvantage of this approach is that it can deflect attention away from non-categorised elements. Given that coding in itself is a selective and interpretive exercise on the part of the researcher, there is also the risk, sometimes seen as a weakness of qualitative analysis, that a few telling examples might be used to support analytical argument (Silverman 2001), rather than allow the reader to 'see' in full the data that was generated. To minimise the risk of the researcher 'pre' coding by subjective selection of data elements, categorising of the think-aloud and discussion data was allowed to develop from the data itself, by initially noting *every* substantive comment made by a respondent. Each substantive comment was referenced to indicate its original location in the transcript, and then initially placed in a category. These initial categories were suggested by the gradual occurrence and recurrence of respondents' comments, and were continually modified until the researcher was satisfied that the categories (or analytic codes) made sense in terms of the literature review and, more importantly, in terms of common and key themes respondents were themselves raising.

If a response emerged that could not easily be dropped into an existing category, a new category was created under a newly devised heading, such as 'typeface' or 'sound effects'. Such particular categories were eventually subsumed (as suggested by

Huberman and Miles 1994) into larger more general categories which could be readily linked to the questionnaire data and the key themes that had already emerged from the literature review, for example the high relevance of the flow concept. Of course, some entirely unexpected areas for analysis were raised from the think-aloud and discussion data, for example the connections between site and story orientation, and these may represent a development in knowledge, which this study might claim to have generated.

Ebling and John (2000), in coding their think-aloud data, define evidence of a usability problem as 'a notable utterance made by one or more users, such as expressions of surprise or frustration' (p 291) and this was a useful definition and practical approach for the current study, since the most common type of adverse comment made by participants were exactly those of surprise or frustration. However, positive comments were sought too, because it was not assumed that the empirical test was only looking for usability *problems*: thus comments around pleasure at design elements or ease of navigation were also noted as evidence.

- *Validity and reliability*

This study has proceeded from a set of research objectives, which were motivated by the overall aim. The validity of the research method is believed to be strengthened by the careful referencing of earlier relevant empirical studies and to the fitting, at all stages of the project, of the method to research objectives. To summarise that validity, section 5.7 matches method to objective.

The researcher is also aware of the risk of what Silverman (2005, p211) calls 'anecdotalism', the use of a few carefully selected extracts to 'prove' an argument. The nature of this study is such that there was, from the start, no argument to prove, no hypothesis to defend. The study was inductive insofar as the researcher had questions which demanded an answer, and to that end the data has been *examined*, rather than utilised in the service of a preferred view or set of views. The researcher has been prepared throughout the study to refute any conceptual assumptions or theoretical standpoints, even his own, if the empirical data suggested a different 'truth'.

The conclusions in this report (chapter 10) reflect the natural endpoint of a journey which the researcher has taken, from a set of questions, leading to objectives, leading to a literature review, leading to a research methodology and fieldwork. It is hoped that this approach regarding any findings lends to this study the reality of readers' own responses to a literary text. That is the overall aim of the study.

In qualitative studies, the researcher should acknowledge and work with the fact that he/she is part of the research. In the case of this study, it is clear that the researcher's presence in the think-aloud and discussion sessions, for example, would influence to some extent what was said by participants and therefore what data might be gathered. The design of the questionnaire was clearly heavily influenced by researcher decisions. These aspects of the research design might be seen as threats to reliability.

However, Silverman (2005) suggest some safeguards against poor reliability which this researcher has implemented:

Full transcripts are in appendices 1 to 7 and it is believed that this to some extent can reassure an interested reader that categories of evidence, interpretations of data elements, and conclusions can be 'trusted'.

Verbatim presentations of participants' reactions in the face-to-face sessions have been used, rather than an anecdotal paraphrasing, in the Findings and Discussion chapters.

A constant aim was to record accurately and comprehensively everything that occurred in the face to face sessions, and to include every added respondent note or comment in the questionnaires (usually entered in the 'other' category following the listed answer options). This research aimed to get as close as possible at all times to the actual words of the participants, not the researcher's hopes for their responses.

5.7 Summary: Matching Research Aim and Objectives to Methodology

Aim

To find out how readers of hypertext fictions interact with the narrative, in terms of:

- their imaginative, aesthetic response to the fiction itself

and

- their interaction with the electronic interface.,

The overall aim was approached by addressing the objectives. Therefore below the objectives are matched with the relevant methods used.

Research Objectives

1. To understand how hypertext fiction is read.

The literature review sought to evaluate the current 'state of the debate', looking for understandings of the act of reading, the relationships between reader and text, and the functionality of human-computer interfaces. The combination of think-aloud, questionnaires and discussions elicited readers' responses at initial contact, immediately post-reading, and after a period of reflection.

2. To discover whether hypertext fiction presents narratives that satisfy readers' expectations of what a 'good story' should offer, or whether it offers something new.

The literature helped to describe what literary theory has to say about narrative conventions and its effects on readers. The questionnaires in particular get at readers' views about their understanding of a 'good read', but the discussions also allowed readers to express their views about hypertext fictions compared to print fictions they are familiar with.

3. To investigate how the interface influences the reader's experience of the narrative.

The literature around hypertext and the human-computer interface was examined in order to gain an understanding of the current state of the art in interface design and usability. The think-aloud sessions, followed up by the questionnaires and discussions gathered data about this aspect of hypertext fiction.

4. To evaluate how far established theories of reading and interface design can explain readers' reactions to hypertext.

By reviewing the literature of reading theory and research, and then reflecting on that knowledge in the light of the data gathered, extant theory could be evaluated in terms of hypertext reading.

READER RESPONSES TO HYPERTEXT FICTION

This section (chapters 6, 7, 8, 9 and 10) presents the responses of the reader-participants to the hypertext fictions they read, and discusses key findings and themes generated by the reader response data.

To reiterate the approach taken to data collation and analysis: the data presentation that follows uses categories that the researcher developed from analysing the think-aloud responses, the questionnaire returns, and the discussion transcripts. In order to allow for ready distinction between the different hypertexts examined, data is presented separately by hypertext, and then discussed around key emerging themes.

It should be noted at this point that the interface as a significant influencing factor in readers' responses is 'ever-present': it is impossible to isolate comment about narrative structure, for example, entirely from reactions to interface features, because very often in the data, they are tightly connected. However, in order to present data and discussion in a coherent fashion, chapters 8 and 9 focus specifically on interface issues: chapter 8 considers reactions to navigation systems, and chapter 9 examines responses to interface design. It is intended that this somewhat artificial separation of factors is resolved through the discussion sections and in the conclusions (chapter 10).

Questionnaire data has been selectively referred, to or shown in bar-chart form, where it bears helpfully on key points emerging from the think-alouds and discussion.

NB. References in brackets refer to think-aloud transcripts (e.g. E/T line 20), questionnaire data (e.g. W/Q item 2.4), or discussion transcripts (e.g. M/D line 15). All transcripts can be found in full in appendices 1-7..

Chapter Six

Reading

6. 1. *afternoon, a story*

- *The readers*

There were six participants in this group (Bournemouth University academic and support staff), and all six stated that they were regular PC users (A/Q item 1). The group could be characterised as proficient users of interactive media. Three of this group had specialist knowledge of interactive media (A/Q 2), though not specifically hypertext fiction.

It is significant to note that when discussing their reading of this piece, these participants were often cross-referring to other aspects of the hypertext, and we quickly begin to see here how interdependent are narrative form, reading pleasure, and the operational features of the digital interactive medium.

- *Reading and hypertext*

In the think-aloud sessions, all the participants commented on the newness and awkwardness of the experience. The reason for this reaction was the large influence exerted by expectations based on familiarity with other media: for example, participant HC said, 'I'm trying to resist putting it into a frame of what's already established. I'm trying to keep an open mind. But we do react to things on the basis of what we know' (HC/T line 118). Another participant (SB) commented that his expectation was to do with control of the reading process: 'When I read a book I'm used to having control over everything, the pace, being able to go back and re-read if I've forgotten it. I can leap to the end if I want. It's a medium where you can choose' (SB/T 51). Participant RS felt that he expected control over the typeface:

Can I make this bigger? Can I increase the text size? I would like to be able to. Not with a book, but here because I'm familiar with changing the font (RS/T 59).

Prior expectations caused uncertainty as to how to approach the piece, as expressed by participant DL: 'I guess I'm expecting it to do something else but I'm still trying to read it as a book. There's something different about it, but I'm not sure what' (DL/T41). SB mentioned one reading difference which became apparent in the first viewing of the piece: 'It's a different sort of reading… I can't do the sort of reading ahead leaps you make when you're reading a book' (SB/T 27).

Figure 10 below (A/Q 1.2) indicates the range of expectations for a 'good read':

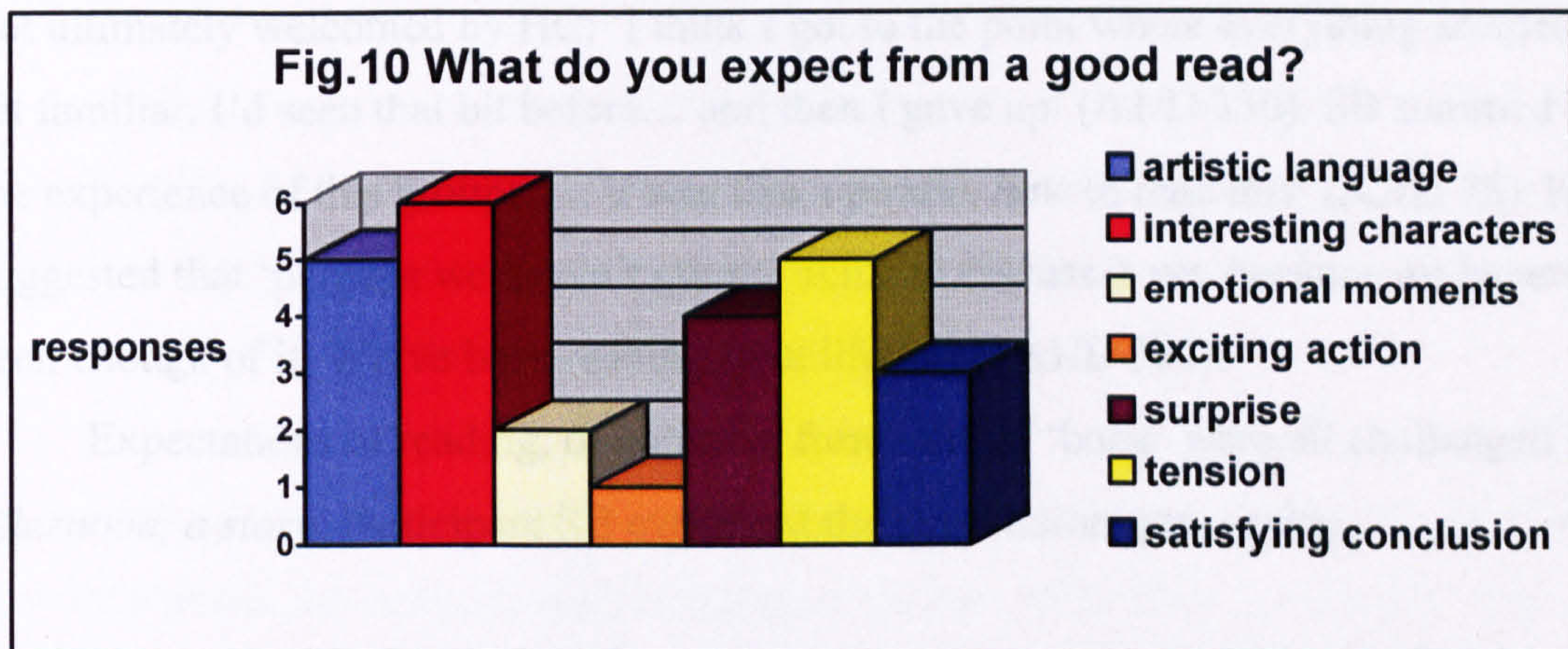
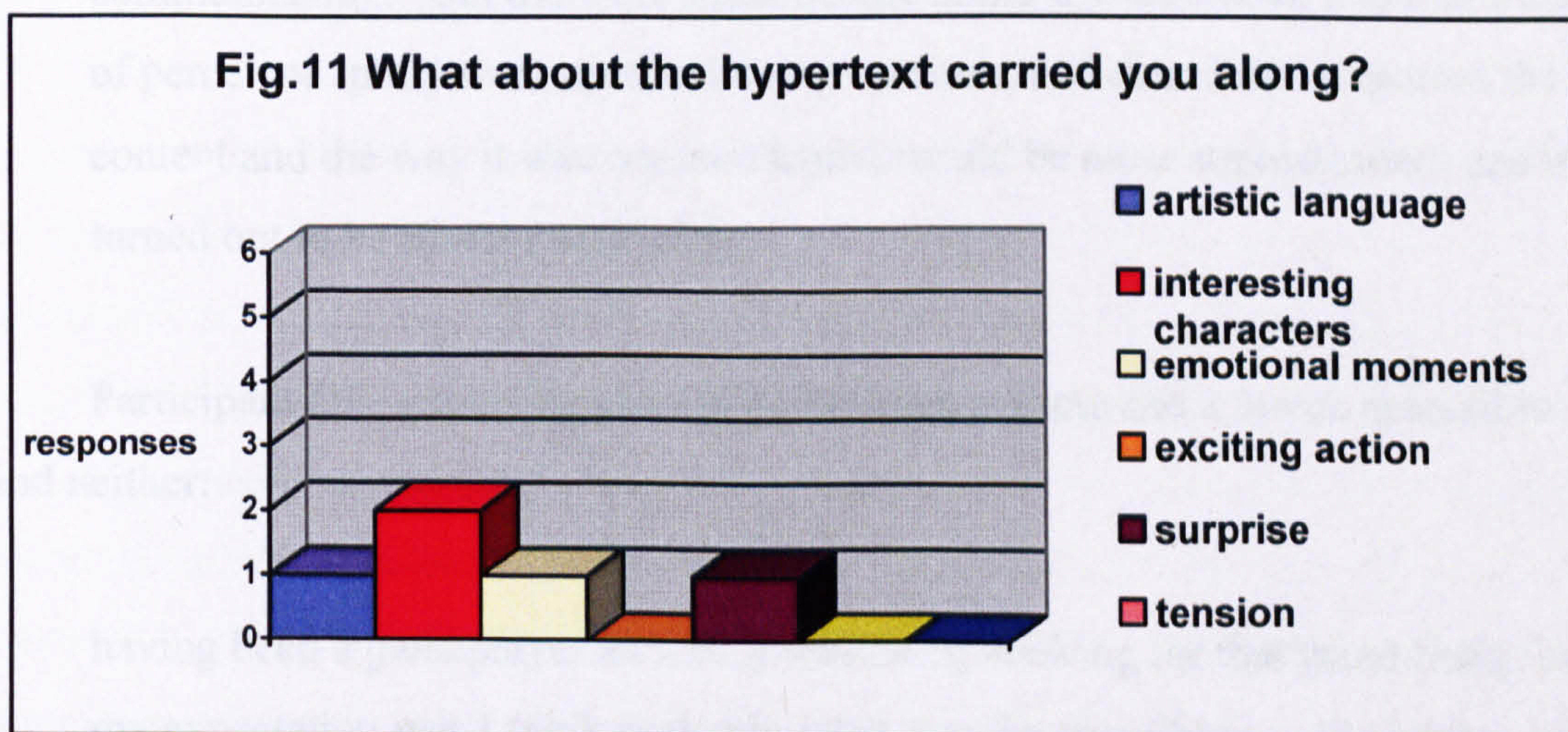


Figure 11 (A/Q 3.2) compares prior expectations with the readers' responses to *afternoon, a story*, having read it over a two- or three-week period:



It can be seen from Figures 10 and 11 that *afternoon* only provided interest in four of the eight aspects of expectation, and then only for one or two participants in the aspects that *were* indicated.

By the time of the discussion sessions, the overall attitude was that, despite this group's openness to new forms of writing, *afternoon* did not deliver a satisfying reading experience of the kind that they would look for in a printed fiction. HC commented that 'a good book can take me out of a bad mood, but this made me more irritable!' (A1/D 198). Only three of the six participants said they would read another hypertext novel of this kind (A/Q 3.14).

Reading this hypertext was 'confusing' and 'annoying' for KH (A2/D 235), partly because of the navigation design and partly because of a perceived poor 'match' between the genre and the structure. The need to re-read sections (lexia) was not ultimately welcomed by HC: 'I think I got to the point where everything seemed a bit familiar. I'd seen that bit before... and then I gave up' (A1/D 336). SB summed up the experience of this group: '... it was like a puzzle, *how* to read this' (A2/D 75). HC suggested that 'perhaps we haven't got the skills to discuss it yet, because we haven't seen enough of it. We've been reading for a lifetime' (A1/D 365).

Expectations of reading, of narrative form, and of 'book' were all challenged by *afternoon, a story*. Participant SB explained the expectation-gap, saying,

> Because this is literature, I expect it to be deeper and more satisfying, and it wasn't, so I was disappointed. This was one of the things I found quite surprising, because I thought "Well, there's these games people are doing, there's popular stuff, and I think it's a new art form, and it's a good way of communicating." But there are these people doing it with words, and that's kind of perceived in my own mind to be more serious, and therefore I expected the content and the way it was communicated would be more sophisticated, and it turned out to be trivial (A2/D138).

Participant DA, expecting something between a game and a novel, seemed to find neither:

> having been a gameplayer as well, I was partly looking for that game thing, but my expectation was I think probably more, maybe something... it's hard to say

> like a traditional novel because you think of things like *Tristram Shandy* or *Swim Two Birds* – you think of those slightly unusual novels in the way that they will go off into little corners of their own (A2/D 190).

Ultimately for the members of this group, expectation appeared to play a significant role in their reaction to the experience of *literature* on a computer, summed up by SB: 'Because it was presented to me as a novel… that affected my, I was prejudiced by what I was anticipating I would get' (A2/D 243). Participant KH made a related point: 'Doesn't it say when you open up that it's a hypertext novel? That straightaway puts you in a particular (context)' (A2/D 251).

Participant DL saw a way to balance the competing forces of expectation:

> If you are developing a new medium you need some form of familiarity. If you're going to take someone who's used to reading a book, and say "Right, read this," you need to take somebody along gradually. You can't introduce them to something that's completely different and just expect people to accept it as being "ooh, it's so new so it must be great" (A1/D 373).

Participant KH expressed a similar view that writers should work with designers who understand the conventions of interactive media (A2/D 286). It indicates how delicate is the balance between innovation and convention for the enjoyment of narrative reading in this medium, adding empirical weight to the thinking of Gee (2001), Murray (1997b) and Douglas and Hargadon (2001).

- *Book versus computer*

The medium of the PC and the nature of hypertext raised several comments around the issue of reading a book versus reading on a computer. SB was conscious of being 'interested in whether it feels different to the way I read books' (SB/T 55), and DA said, 'There isn't a lot of the element of book in it, in that traditional sense. It might be more a case of "well, what's in here?"' (DA/T 33). There were several comments around the physical attributes of the medium: 'I think I'd like more packaging or blurb' (DA/T 86), and 'I'd like to know more about what the story is, like it's the front cover of a book, but it isn't giving me the flap' (RS/T 7).

This perceived need for a familiar form of presentation, even down to the packaging, is not discussed as significant in any of the literature, and yet we will see that it recurs as an issue for many of the readers across the whole study, not only for the *afternoon* group.

Other differences between book and 'hyper-book' were mentioned that were intrinsic to the hypertext form. HC said, 'Is there an estimated reading time? Because when you pick up a book you can see if it's a whopper. Usually you know what you're going to get' (HC/T 110). SB said that 'with a book, it reveals itself as it goes along' (SB/T 44), whereas *afternoon* did not appear to be doing that, at least at this initial reading.

In the discussion sessions, the transition from book to computer was again raised. Overall, there was no objection to the computer, however, some important book-like features were seen to be missing, and a digital equivalent of these would help ease the reader into the new medium. Participants SB (A2/D 354) and KH (A2/D 345) found no inherent difficulty with the computer or the interactivity, but would present the piece to manage audience expectations more effectively. The inclusion of a recognisable first page (A1/D 253), and some indication of the size of the work (A2/D 113) would also help the transition across media.

Participant RS suggested that the use of more multimedia elements would help his engagement (RS/D 212), reflecting a point made by HC that this piece wasn't, for her, working as either a book or a website (A1/D 217). Overall though, all the participants in this group indicated that they would accept the newness of the medium, and the difference in the reading activity required, if the *story* had the power to pull them in and draw them along: 'that's the crux of it, you're not engaged with it, you don't care about the people' (A1/D 227). Responses to the story itself are discussed in Chapter 7.

6.2 *LOveOne*

- *The readers*

Five of the six participants in this group (Strouden Park writers' circle) were regular PC users (L/Q1), though they all were familiar with PC interfaces and the functions of

hyperlinks, browsers and menus. All six were keen readers of fiction, and five of the six were members of a writers' circle.

All were interested in the prospect of hypertext fiction, though one participant displayed quite notable cynicism from the start of the think-aloud, and it is not surprising that his responses throughout the phases of reading were generally negative towards any new forms of writing or reading. Nonetheless, there is a notable level of agreement and consistency within this group, which provides interesting leads for discussion.

- *Reading and hypertext*

In the think-aloud sessions, comments on the act of reading itself were few, with participants mainly interested in the newness of the form and the interface. There was an initial expression of unfamiliarity, and some fascination. JP felt that she was 'not really reading it that much, I'm bothering about how to get it together' (JP/T 155), while KL said, 'I suppose you have to get used to reading by clicking the red bit instead of turning the page' (KL/T 25). Participant MH quite quickly realised that for her, a new kind of reading strategy would be needed:

> I'm someone who, I do wander off down different tracks because I'm very curious. ... I suppose the way round that would be to read it through straight first of all, then read it through again and do your wandering... (MH/T 188-193).

Within MH's thought there is of course the presumption of a 'straight' reading, which at this phase, she expected to be able to find. Participant CL saw that there might well be no linear structure at all: 'It looks to me like there's an endless string of things' (CL/T 57), but he was 'almost excited to play with it' (CL/T 168). Similarly JP said, 'I will have fun with this' (JP/T 237). Another expression of interest in the newness of the form came from RF, who said, 'I'll have a go, I'll see if I can change, because we're all set in our ways' (RF/T 183).

However, we can also see the beginnings of frustration: participant KL said, 'This is bitty, it's too bitty' (KL/T 36), and RF commented that, despite his

willingness to try, 'I can't see myself doing it' (RF/T 184), that he would prefer 'simple' text with not too much to do (RF/T 109-111).

The questionnaires returned that all six readers did not become engrossed in their reading (L/Q 3.13), and whereas all six said they would be prepared to go along with a difficult plot to see how it unfolds (L/Q1.7), all six also said they were unhappy with the ending to this narrative (L/Q 3.12). In the discussion, the act of reading was discussed mainly in relation to the development of the narrative (see chapter 8), but KL made the interesting point that she is prepared to spend time at a computer screen if she were information seeking (KL/D35-8), as opposed to reading fictional narrative on-screen:

> Some websites are poor, but I need to get the information, and I'm interested in the end product. But, whereas this, it just didn't interest me so I switched off fairly early really (KL/D48).

Evidently, the *motivation* to keep reading is significant for KL. For others, while reading print fiction was seen as a 'relaxing pleasure' (L1/D 291-9), reading *LOveOne* 'wasn't relaxing, it was like a task to do' (L1/D 312). CL similarly felt that when at a computer he switches into 'work mode' (CL/D59) and reading *LOveOne* did not lead him into the 'pleasant dreamworld' he enjoys when he reads fiction in print (CL/D 54).

- *Book to computer*

Expectations again played a significant part in readers' initial reactions to the medium. This group were all approaching the experience of reading hypertext as if it would be akin to reading a book in print. Consequently, the difference between reading a book and reading an interface was quickly an issue for these readers, even though they were used to PC browser functions: many comments in the think-aloud sessions referred to concepts and practical aspects of book-reading, as a way to discuss what was happening during computer-reading.

The theory developed by Cavallo and Chartier (1997) and the arguments of Bolter (2001) seem particularly apposite here; but where Cavallo and Chartier argue for the inextricable link between medium and reading activity, Bolter tends to be such

an advocate of hypertext that he glosses over the impact on reading pleasure of the new medium. The data here suggest strongly that the change to the medium has a very powerful effect on the whole activity of reading, not just in terms of operating the medium itself, but also in the cognitive and aesthetic workings of the readers' imaginative minds. Participant CL said that he wasn't in book-mode because he was still trying to find the story (CL/T 45), KL said that black type on a white background would be more 'booky' (KL/T 72) and therefore easier to read, while MH asked, after seeing a few initial screens, 'So is this actually the beginning of the book?' (MH/T 45).

Some further comments highlighted the perceived clash between media:

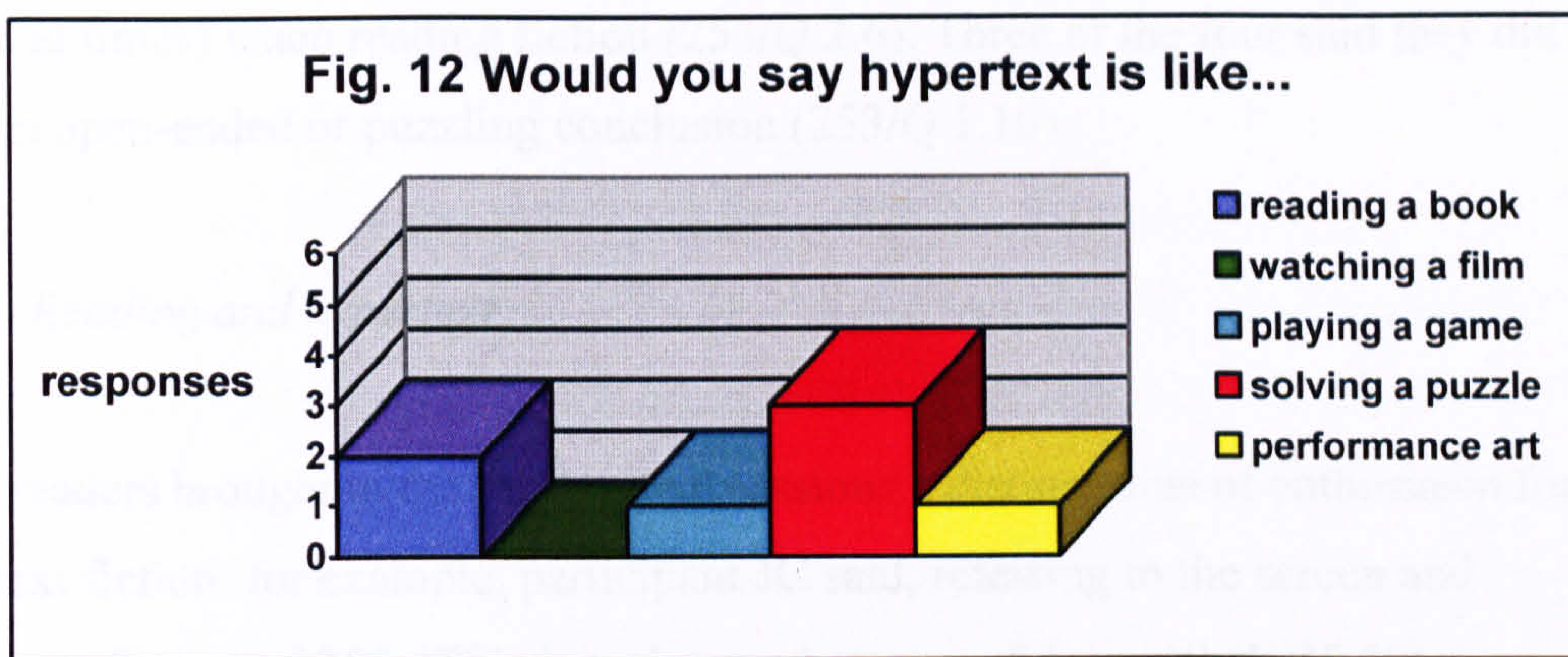
> I mean, my first impression... is that there are elements of this particular one that just don't fit good web design, and you're more web designing now than book designing (CL/T 176).

KL was specifically looking for book-like elements, almost as if these would be necessary for her to know what to do with the 'thing' in front of her:

> KL: There's so little information on it really – you expect something at the top like a page number or a chapter... like a book.
> Researcher: Ah, so are you in book mode at the moment?
> KL: I'm having problems switching over, really (KL/T 19).

RF said that with a book you can see how far you've gone through it, the absence of which was a concern (RF/T 128), while MH ultimately felt, '...nothing can take the place for me of holding a book, and the smell of the paper, and being able to go back to it...' (MH/T 259).

By the time of the discussions, these observations had become much more pressing barriers to enjoyment, expressed in varying ways by the whole group. Questionnaire item L/Q 3.1 (Fig.12 below) suggests this sense of displacement from the familiar 'book' environment:



Of the six participants, only two said the experience was like reading a book.

The technical aspects of screen versus book were discussed, but were not generally seen as an insurmountable obstacle to enjoyment. CL mentioned the difficulty of reading for prolonged periods on a pixellated seen (CL/D 67), as did both MH (L1/D 305) and RF (RF/D 349). The comfort factor was also mentioned: 'When I read, I usually read in bed, to go to sleep, and I am very relaxed' (L1/D 309). RF similarly said he simply preferred to read in his armchair (RF/D 334). Overall though, the general consensus was that the physical and technical obstacles might well be overcome if the content were interesting and gripping.

6.3 *253*

- *The readers*

This set of four readers (Arts Institute students/Ensbury Park library book group members) stated that they were regular PC users (253/Q 1), and all four used computers as an integral part of their work. Two were studying multimedia within the context of art and design, though this did not show itself as a significant factor in their responses. It is however interesting to note that despite their technical expertise and knowledge of multimedia applications, these two readers had not come across hypertext fiction before.

All four participants said that they were prepared to work at reading a story in order to find out how it ends (253/Q 1.7), and all liked a challenge (i.e. to be puzzled or even

baffled at times) when reading fiction (253/Q 2.6). Three of the four said they did not mind an open-ended or puzzling conclusion (253/Q 1.10).

- *Reading and hypertext*

These readers brought to the think-aloud sessions a distinct tone of enthusiasm for hypertext fiction: for example, participant JC said, referring to the screen and navigation format of *253*, 'This is an interesting way of doing it' (JC/T 59). Participant JH said, 'It's fun in a way. You're sort of in control of it' (JH/T 147).

All four began by exploring the screen. Reading was secondary to learning the operation of the interface, and expectations from computer use appeared to override expectations from book-reading, as indicated by PC: 'I thought I'd just play around and see what comes up, to start with, because that's what I tend to do on a website' (PC/T 50).

Likewise, JH said, 'It's quite exploratory' (JH/T 143), and, 'I quite like that...it's more adventurous like this' (JH/T 202).

On the other hand however, expectations from print reading did also create a tension with the behaviour the piece seemed to demand, again appearing to support the schema theory of Douglas and Hargadon (2001). The unusual mix of media created tensions between schemas which might otherwise have helped these readers within any of the media forms they had already encountered. JH enjoyed the adventure of exploring the textual space, but she had begun to realise that the storyline was not emerging as it would in a more traditional linear reading experience (JH/T176-252). JC made the reader/user dichotomy explicit:

> I think the initial screen needs a bit more. It didn't really read as a piece of fiction. And again, if you come into this half way through, then again you might have a bit of a problem seeing it as a piece of fiction (JC/T 135).

Fighting against the web-browsing model, apparently offered by the layout and navigation system, was the need to nonetheless read the piece for its narrative: 'You definitely need to read it from the top of the page down' (JC/T 138). JH said that she liked the idea of 'doing both' (JH/T 191), i.e. reading in a linear fashion and exploring

according to her own choices, but JC is already suggesting that the two might not easily combine.

These readers all said in the questionnaires that they usually enjoyed the sensation of being 'lost in a book' (253/Q 1.1), but they also all reported that they had not experienced that absorbed mood when reading *253* (253/Q 3.13). They all said that reading *253* was more like solving a puzzle than reading a book (253/Q 3.1), and that might go some way to explaining why they did not become engrossed in their reading here.

The question of what might be hindering the absorbed mood was followed up in the discussions: JHG noted that 'usually when I read a book, I'm getting lost in it, if someone was talking to me I don't hear them. But I was very much aware that I got distracted quite easily.' (253-1/D 41), and she thought that might be because she 'knew' what the ending was going to be. JC felt that his reading was less absorbed because of the need to choose and follow links (253-1/D 26). Similarly, PC said

> I think it comes down to the fundamental issue of when you're being in a novel or story, it's an immersive feeling, that you just let yourself go, you don't really have to make decisions or something (253-2/D 144).

In terms of Nell's absorption theory (1988) we are seeing that response demands are outweighing the psychological rewards of the narrative experience. The concept of flow (Csikszentmihalyi 1975; 2002) is also suggested here as a useful explanatory model for what is going on with these readers: conflicts between skills, goals and reward feedback are disrupting flow and therefore reading pleasure.

There were other indications that this group's reading behaviour was different from their activity with printed fiction. Reading was limited to fairly short sessions: JC said that he read the piece in 'half-an-hour chunks' compared to the three-hour sessions he would typically give a print novel (253-1/D 87), or the two-day sessions he devoted to Harry Potter books (253-1/D 107); JV read *253* in two lots of an hour, compared to reading the whole of *The Da Vinci Code* in two days (253-1/D 105). Participants PC and JH said they had remained interested only for about an hour in total (253-2/D 102-105), and this may have been because, for them, it was so different from anything they'd seen before that 'it was hard to get on with at first' (253-2/D 135).

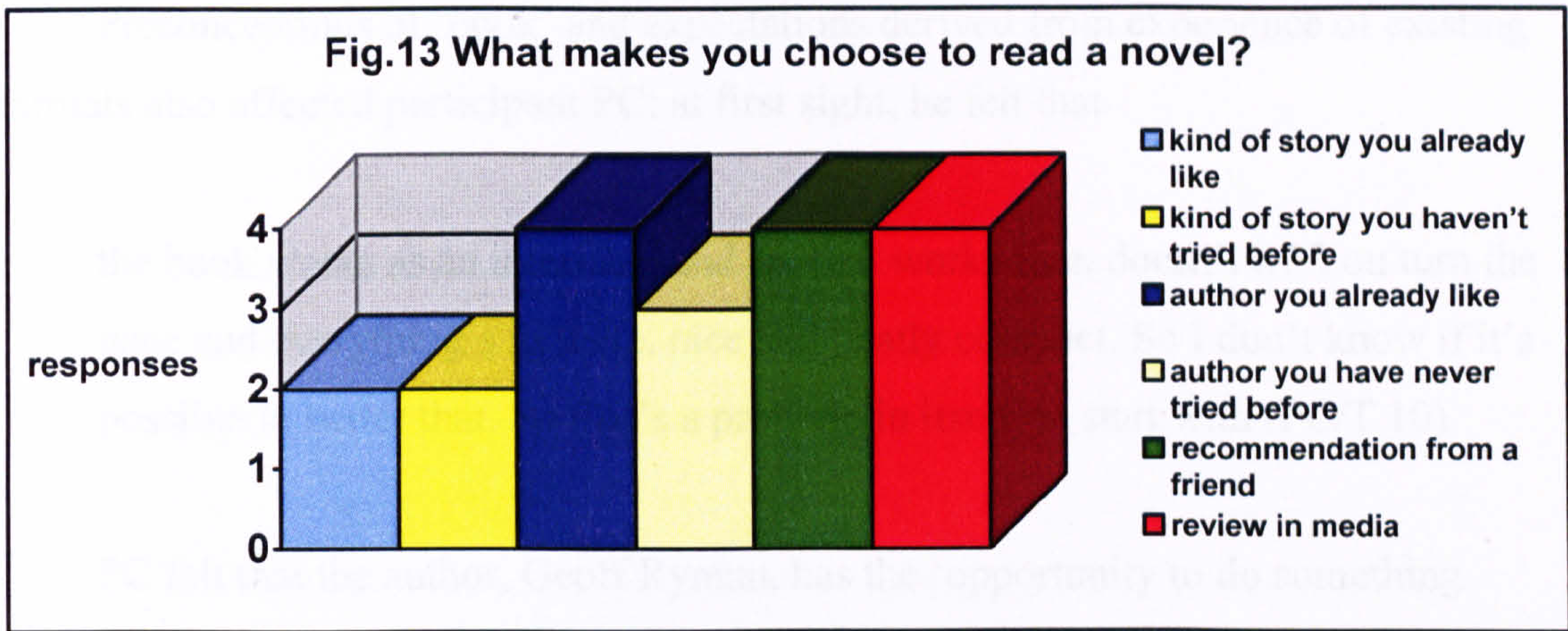
JC suggested that the shift of medium might be partly the cause of his much shorter attention span: 'I didn't feel like I was reading a story. I felt like I was just surfing around the web' (253-1/D378). The mere fact of being able to make hyper-jumps led to a different approach to reading:

> Even in the best books, there'll always be an odd patch where you think, "Well..." You know, it will either slow down or the narrative will go quiet. Um, but you've got to stick with it because you've got to follow it through to get to a better bit. But with this story, if it goes a bit quiet, you don't tend to follow the character on – you think, "Well, I don't need to read that, I'll go off and start another character" (253-1/D 315).

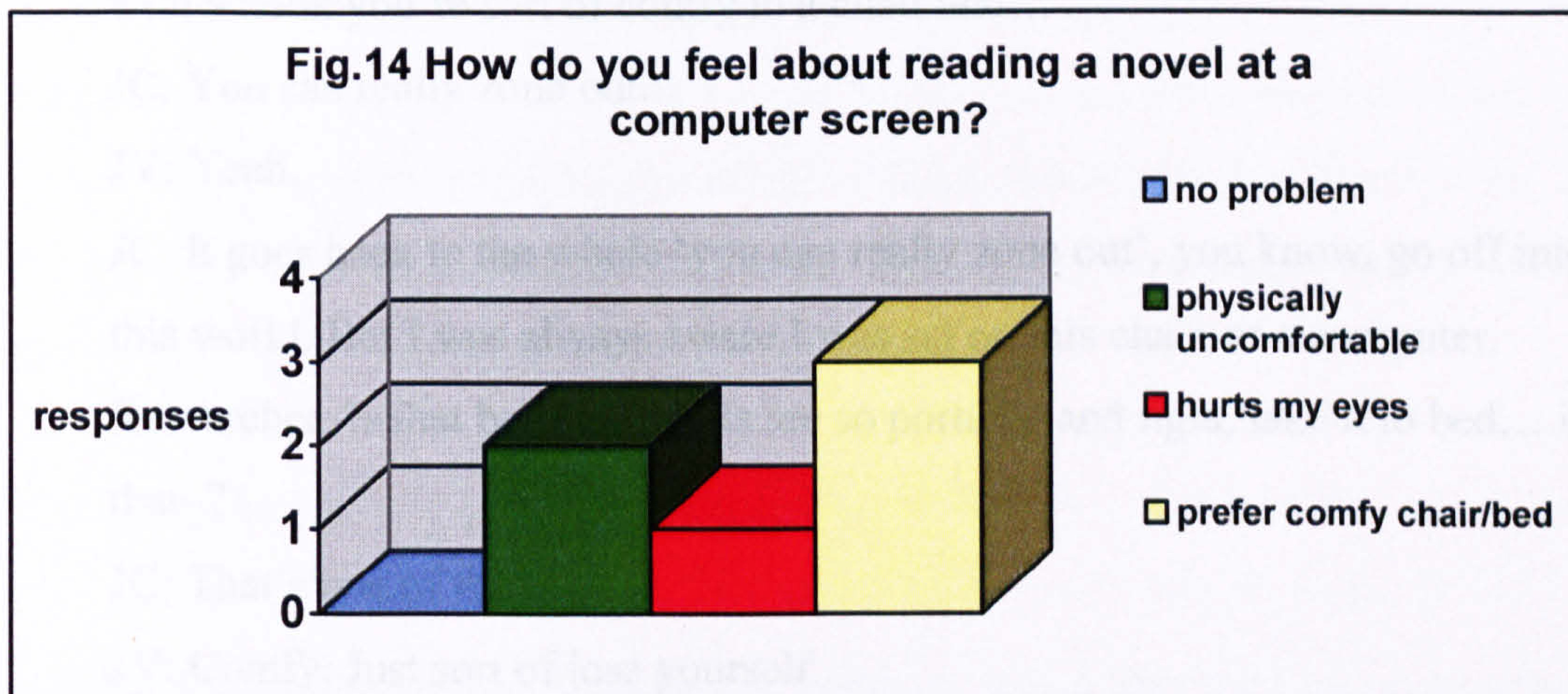
- *Tension between book and computer*

Implied in many of the comments above is the tension between book and computer, and this was explicitly remarked upon several times in the think-aloud sessions. Firstly, hypertext fiction is not easily seen or found by potential readers, because it is not presented to the public as books are. JV mentioned that she relies on book-cover blurbs, newspaper reviews and perhaps the internet, to see if she likes the sound of a book (JV/T 49): these points of access are not readily available to her for hypertext. Participant JC said that 'coming to this from a search engine, or coming to this from a link, I wouldn't immediately think, "This is a story."' He suggested 'some kind of heading, some way of identifying this is actually a story as opposed to a web page...' (JC/T 33).

Figure 13 (253/Q 1.2) below shows the range of factors that enable these participants to choose which fiction they read:



We can see that these readers would not find their habitual routes to fiction open in the case of hypertext, except possibly in the case of a friend's recommendation. Added to that 'barrier' to access, these readers also reported negatively on their feelings towards reading fiction at a computer screen (253/Q2.1):



Uncertainty regarding the form of this new kind of 'book' was expressed by participant JH:

> I came to it thinking not exactly a book or website, but um, I did actually think it might be something where you could just switch it on at any link you want and it would all make sense… I didn't think it would be like a huge story, I just, I didn't think it would be website style either (JH/T 143).

Preconceptions of 'book' and expectations derived from experience of existing formats also affected participant PC: at first sight, he felt that

> the book works as an interface, and so, that works fine, doesn't it? You turn the page and everything's in there, nice and neatly compact. So I don't know if it's possible to better that. So that's a problem in itself, to start with (PC/T 10).

PC felt that the author, Geoff Ryman, has the 'opportunity to do something different' (PC/T 119), an opportunity which PC considered hadn't been fully grasped.

The discussions were able to dig a little deeper into these reactions. The familiarity and perceived physical comfort of the traditional paper-bound book was seen as an important issue for readers:

> JV: I was always aware I was at a computer. I couldn't sort of – when you sit with a book you're sort of comfy in a chair and...
> JC: You can really zone out.
> JV: Yeah.
> JC: It goes back to the whole 'you can really zone out', you know, go off into this world. But I was always aware I was sat on this chair, at a computer.
> Researcher: Is that because books are so portable and light, take it to bed... is that–?
> JC: That's one of the issues.
> JV: Comfy. Just sort of lose yourself.
> JC: You can't curl up in bed with a laptop, can you? (253-1/D 406-422).

A book was seen as 'simple', you can take a book on holiday, you can sit with a book 'anywhere you want', and 'if you lose it, you can buy another one, not like a laptop' (253-1/D 432-439). 'Until you can have the internet on a small, that's cheaper, that works properly, it would be very difficult for it to take off,' JC considered (253-1/D 590).

Despite these reservations, overall *253* seemed to raise optimism for the form, and to generate constructive suggestions for development: it was felt that we do not need to totally remove all ideas of 'book', if we 'get away from the boundaries of the

square screen' (253-2/D 460), and use interaction's capabilities more fully (253-2/D 492).

6.4 *These Waves of Girls*

- *The readers*

The four participants (Bournemouth University academic staff) all stated that they were regular PC users (W/Q 1). One member of this group was a multimedia designer, and her specialism is regarded as a significant factor in her responses; important aspects of her reactions will be noted in the presentation of data that follows.

Three of the four participants said enjoyed a challenge in their reading (W/Q 1.6), but they were split 50/50 on the issue of whether they enjoyed unfamiliar plotting (W/Q 1.7). Although it is not the intention to track individual readers' responses across the whole study, it is worth noting that the differences between readers, in terms of openness to new narrative forms, became insignificant as the data was gathered and analysed. At the end of the sequence of data collection, there was very little difference in reaction to this hypertext.

- *Reading and hypertext*

Three of the four participants in this group had not seen a hypertext narrative before, whilst the fourth member ('CV') had knowledge of and some expertise in hypertext narrative forms and writing. It is interesting therefore that the comments regarding the experience of this initial encounter with *These Waves Of Girls*, as compared to reading print fiction, were consistently doubting or even clearly negative, apart from those of participant CV. Reading fiction on screen and with interactivity was, at this stage, a definite challenge for the other three members of this group: 'I can't relate to it the way you'd read a book. It's a completely different kind of reading' (KC/T 83) summed up the overall feeling.

'I don't really know how to get the most out of it' (KC/T 100), expressed the lack of familiarity with the medium and narrative form, while participant EC was

uncomfortable with the process of reading a hypertext *fiction*: 'You read a book to relax – this is not relaxing. It's too much work. I'm at my desk, there's too much to do, the screen is too busy, why would I bother?' (EC/T 43). On the same lines, participant KC noted that 'Actually, you have to actively read this book' (KC/T 110), having earlier commented that 'It's quite hard work' (KC/T 90). Participant RG similarly noted that the demands of interactivity would be 'quite disruptive' (RG/T 15) to reading. Nell's (1988) theory of the effort-reward equation is again strongly demonstrated here, and one of Miall's (1998, 1999) objections borne out.

Participant CV, initially the most positive reader and the most familiar with hypertext and interactive media, observed the effect that the non-linear structure might have upon her reading behaviour:

> Because of its structure, because there's no clear-cut story, I'd probably not read every node because I'd feel it's not necessary to do that, but then I'd wonder if I'd miss significant points' (CV/T 64).

In contrast to participants KC and EC, participant CV was happy with this reader-led approach to the narrative: 'I quite like the idea of exploring the medium in terms of creating an experience, rather than clear usability...' (CV/T 58).

There was a strong view expressed in the discussion by all four participants, that reading hypertext fiction required an adjustment from their expectations, which they all found very demanding. This was articulated in slightly different ways, but the overall consensus in this group was that reading *These Waves Of Girls* was a tough challenge, both as story *and* as medium.

Asked by the researcher, 'Is it more work than reading a difficult novel?' participant EC said, 'Yes, because if it was a difficult novel you could always go back a few pages, pick a point up before you go forward again. It's just, nobody wants to work that hard having pleasure' (W/D 114). This was echoed by participant KC who said, 'I was spending so much time trying to find out where I was in the book, I actually didn't take the story in (W/D 23).

- *Book versus computer*

Participant KC felt that 'it might a generational thing… to go from a traditional way of reading a story to go to something different, I found was a leap too far' (W/D 14). Participant CV argued that although she felt the generational aspect was not significant, she still preferred reading a book to reading a computer: '…because I use (a computer) all the time I also like the idea of sitting down to a good book where I don't have to look at a screen anymore' (W/D 196).

It emerged from the discussion that the very terms 'reading' and 'book' felt inappropriate for this experience. 'I really had a problem with the medium,' participant KC said, reflected by participant RG who said, 'I think, we do the book metaphor, but it's a different medium' (W/D 421). 'I'm trying to read it as a book, because that's what I'm thinking it is, but it doesn't behave like a book,' said participant EC. (W/D 361). She continued, 'So my reaction… is to simply shut down and say it's too much work' (W/D 362). Participant CV summed it up eloquently:

> One of the key issues we haven't resolved, that we still haven't escaped, is that all we have is paper simulation… the two mediums are interlinked, they're not the same and yet we're applying old frameworks of understanding to this kind of new medium. We haven't got round that. But that inevitably is the process of transition – you're using old frameworks to orient yourself (W/D 439).

And whilst the tension between book mode and computer mode may be exactly the explanation for much of the discomfort experienced by this group, participant EC nonetheless made the important point that 'I couldn't marry the two of them together… when I read a book it's a pleasure – I want to relax, I want to kick back… that was not pleasurable' (W/D 427).

There was also some resistance to the idea of a book that isn't made of paper, a suggestion that the materiality of the book influences the reading experience and beyond: 'I like to see them on my bookcase, because they bring back nice memories' (W/D 216) commented participant KC; and participant RG said, '... it's like a bit of a collector thing, you like to see them in your bookcase' (W/D 218). On the same theme, even participant CV, the multimedia specialist, had reservations about shifting the experience of fiction to the computer: '… my fiction I want to reserve for lying in the bath, sitting in a comfy chair…' (W/D 198).

6.5 *The Virtual Disappearance Of Miriam*

- *The readers*

This was an homogenous group in that all six participants were regular computer users, with experience of and skills in interactive media, five of the members being postgraduate students in Interactive Media. All six said that they liked to be challenged by the story (MQ 1.6), and four of the six said that they would go along with a difficult plot in order to find out how it ends (MQ 1.7). Five of the six said that reading at a computer was 'no problem' (MQ 2.1), though three did also comment that they would prefer reading in their 'comfy chair/bed' (MQ 2.1).

Overall, it would be reasonable to suggest that this was a group who were open to new narrative forms and very familiar with interactive media, and thus a positive reaction to hypertext narrative might be expected.

- *Reading and hypertext*

The Virtual Disappearance of Miriam is a highly visual piece, and although it does use text as a key means of communication, animations, interactive graphics, and sound form a large part of the reading experience. During the think-aloud sessions the participants all appeared to be much more interested in trying out the interface and the various interactive elements, than actually beginning to pick up on the story itself. The operation of the 'book' was clearly of significance to the participants at this stage.

Participant LS commented that she was just 'exploring': 'I usually do that! It's just finding my options, knowing what I can do, then when I'm reading, I'm not missing anything' (LS/T 18). Participant GD echoed this approach to reading when he said, 'It's about the same way I'd read a website' (GD/T 29).

Expectation of experience from other media did not seem to present problems for this group:

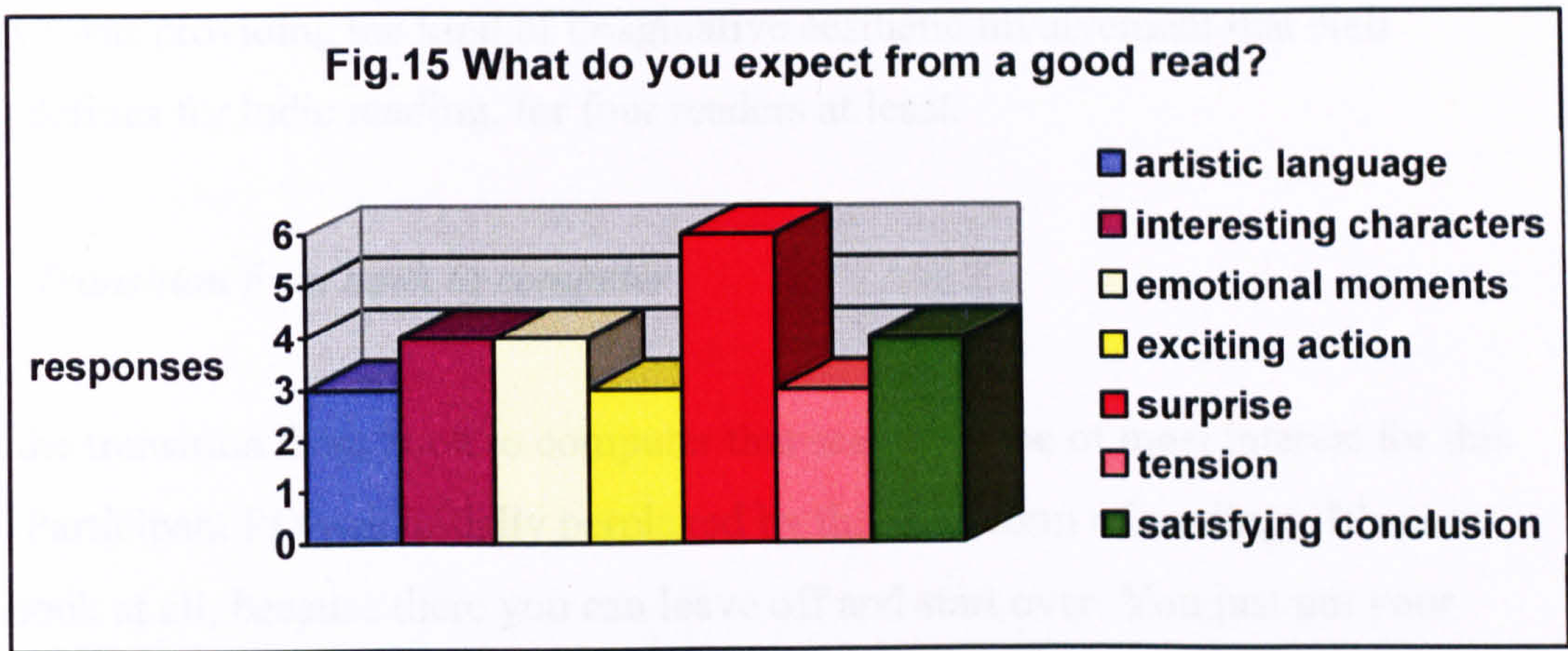


Fig.15 What do you expect from a good read?

If we compare Figure 15 (M/Q 1.3) with Figure 16 (M/Q 3.2) below, we see that *Miriam* 'performed' reasonably well against reader expectations for a good read:

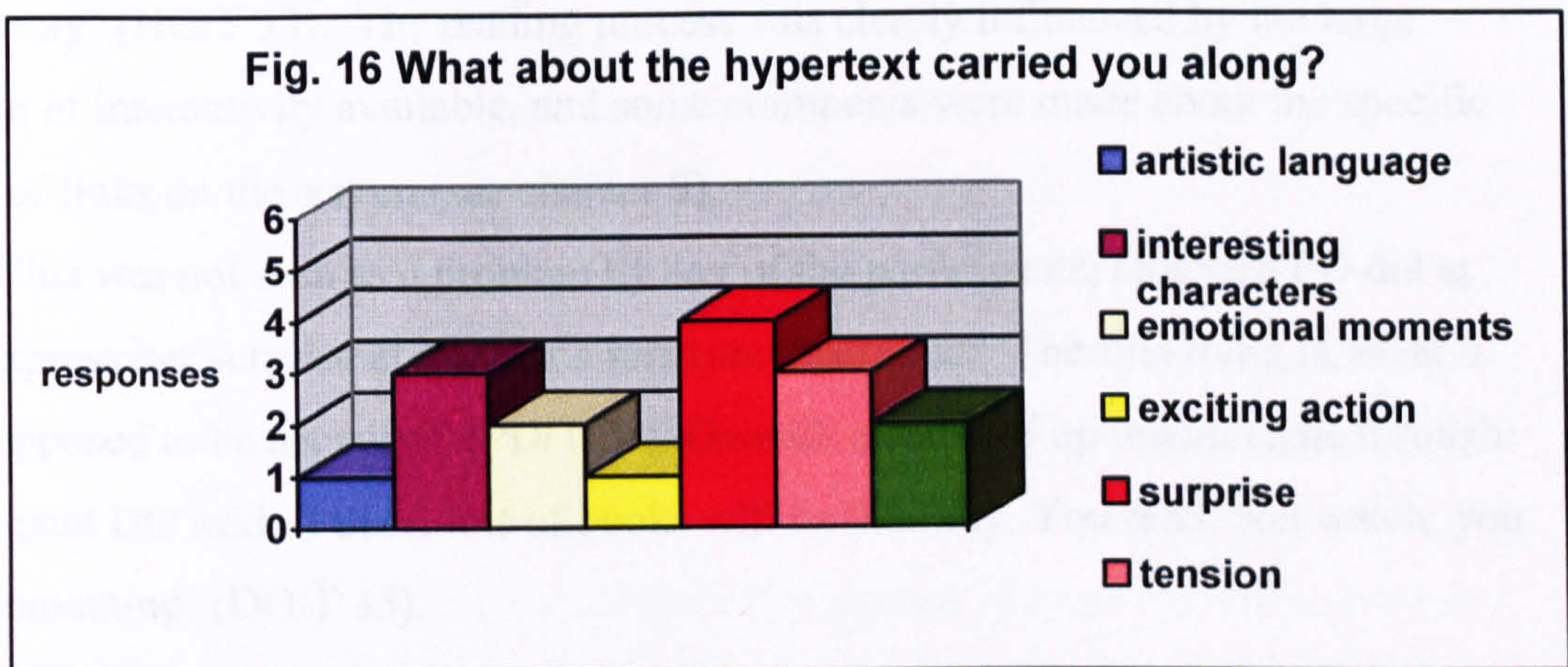


Fig. 16 What about the hypertext carried you along?

All of the desired features of a good read were reported as being offered by *Miriam*, for at least one reader across all categories. *Miriam* appears to have 'succeeded' where others fail, especially in the area of interesting characters, surprise and tension.

By the time of the discussion, the participants appeared almost completely comfortable with the reading experience: most comments about the actual process of reading were related to the functionality of the interface. LS commented that reading on the internet can be boring and straining, and actually it is the very act of interactivity that makes it interesting (M/D 51). When asked 'did you experience the "lost in a book" sensation?' four of the six answered positively (M/Q 3.13). This

narrative was providing the kind of imaginative aesthetic involvement that Nell (1988) defines for ludic reading, for four readers at least.

- *Transition from book to computer*

It was the transition from book to computer that seemed to be of most interest for this group. Participant PD was initially perplexed by this new form of reading: 'It's not like a book at all, because there you can leave off and start over. You just put your book aside, but here you have to close the website down and start all over again' (PD/T 42). It was not necessarily a negative point, but the difference between 'reading' this story and reading a story in print was made clearly by participant HO: 'It's not a book, not a film, it's a kind of story, not a game. Not a website because it's got a story' (HO/T 33). The reading process was clearly influenced by the large amount of interactivity available, and some comments were made about the specific effect of links on the screen (see chapter 9).

This was not seen as a problem by any of the participants, although PD did at first express her surprise at *Miriam*'s form and operation: 'The first thing is, what is this supposed to be actually?' (PD/T 21). Overall, a sense of optimism came through: Participant DO said, 'I think lots of books will be this way. You read, you watch, you hear something' (DO/T 35).

From the questionnaire it was clear that this group did not have any major problems with reading text on screen: one reason might be that they all preferred to read small amounts of text per screen (M/Q 2.2), and *Miriam* does indeed present only short segments of writing to read on any one screen.

The shift from book-like elements to web-like elements was remarked upon in the discussions, but was not seen as a problem. It was noted, as for other hypertext, that one less easily knows one's narrative 'place' in a hypertext (M/D 130), and perhaps this piece could have had web-style bookmarks to help in this regard (M/D 110). But overall, a fiction on a screen was not a problem for this group. A simple explanation for this might be that this was a group of very fluent interactive-media users who were prepared to 'play' with the medium as well as read; but further understanding of this group's largely positive response lies in the particularities of *Miriam's* narrative structure (see chapter 7) and its interface usability (see chapters 8 and 9).

6.6 *Amelie*

- *The readers*

This group of four readers were all sixth formers at a comprehensive school in Dorset, and all were studying English Literature at A-level. The choice of *Amelie* for this group was determined by the class teacher who felt the content and format would be of interest to these students. They were all regular computer users (AM/Q 1), with familiarity with multimedia applications as well as frequent internet browsing and research (AM/Q 2).

- *Reading and hypertext*

During the think-aloud sessions these readers had nothing to say about the reading process at all: the great majority of the comments at this phase of the encounter were about the interface design and its navigation system. The participants were reading the text, but they found nothing unusual or problematic to discuss at this point. The questionnaires therefore are the earliest indication of responses to the reading experience in a hypertext environment.

Item AM/Q 1.1 returned that all four participants enjoyed the experience of being 'lost' in a book, but none of them felt lost in this particular book (AM/Q 3.13). They all enjoyed a reading challenge (AM/Q 1.6), but only two of the four said they would read another hypertext fiction (AM/Q 3.14).

The discussions similarly revealed that, for these participants at least, *Amelie* did not provide an entirely enjoyable reading experience: for example participant KW felt that reading here was something like work (AM/D 113), a response we have seen with other of the hypertexts in this study.

It was certainly a new reading experience, even for these teenaged readers, who have used computers from a young age (AM/D 132). This group said that they did not like to read large amounts of text on screen (AM/Q 2.2; AM/D 437-9), but that *Amelie* was acceptable in that respect because it combined text and other stimuli effectively (AM/D 186; AM/D 179). *Amelie* does not fare any better than the other pieces examined, in terms of providing an engrossing reading experience, which suggests

that even for this younger age-group, the difficulties of reading fiction in a hypertextual form persist. In addition, *Amelie* does present some navigation and design problems for this group (see chapters 8 and 9), which also disrupted reading pleasure.

- *Transition from book to computer*

The transition from book to computer might have been predicted to be relatively straightforward for this young group, but overall, across the three data sources, the consensus was that reading a book was preferred to reading on a computer screen. It is worth noting again that responses in this respect are highly consistent across all 36 readers in the study.

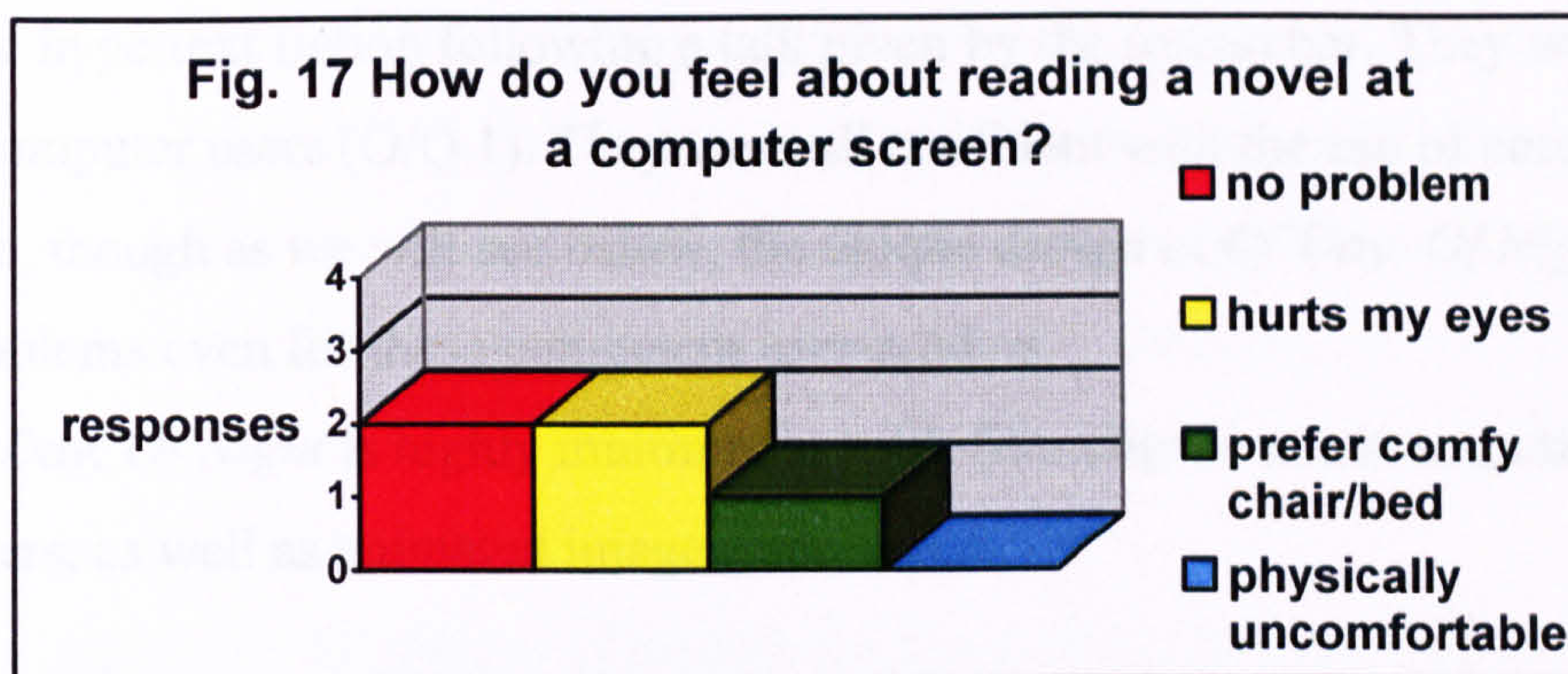
In the think-aloud sessions, there was general very positive reaction to the 'thing' being presented, but also obvious uncertainty as to how to describe the form: 'It's almost like a website story' (NM/T 20), and 'It's really like a film kind of book' (HF/T 23), were typical. There was an acknowledgment that reading would be different from what they were used to: 'I suppose you'd read it quite quickly. It doesn't look like something you'd sit down for a long length of time and read,' said GF (GF/T 33).

Participant NM expressed succinctly how the process of expectation versus operation affected her:

> Because it's on the computer I automatically approach it like it's a website, and I'm exploring it, clicking around, trying to figure out where everything is at first before I start actually getting into it.... Once I've got the hang of it and I've done a couple, I probably would end up just reading them like stories (NM/T 121-126).

This is revealing because, as we have noted in several contexts earlier, each new hypertext presents itself in a unique way, both visually and structurally: thus this initial 'getting the hang of it' and adjusting expectations will always impede quick access into the story, although one might assume that the use of good web design features should ease this transition (see chapters 8 and 9).

The questionnaires suggested mixed feelings about reading on a screen:



Reading this hypertext was a cross between reading a book, watching a film, playing a game, and solving a puzzle (AM/Q 3.1), and it is not surprising that comments in the discussions indicated a somewhat cautious interest.

There was nonetheless, positive reaction: 'I like the new idea of this, sort of bringing it something different' (AM/D 186). But that was tempered by an awareness that lack of familiarity and exposure to the form was an initial hurdle:

> I think for me it was one of the first times I used something like that, a hypertext anyway, so I found it quite difficult, not difficult, just found it a bit confusing. But I think if it cropped up quite a lot, you know, say in Borders or anything, I reckon I could get the gist of stuff (AM/D 58).

There was a general feeling that reading text at the computer would be physically uncomfortable: it is 'more straining on the eyes, definitely' (AM/D 70), and reading in a chair helps one to 'get into the book more' (AM/D 94).

However, a factor that connects strongly with issues around narrative structure and interface design was that reading this new kind of 'book' asked much more of the reader: 'with books, it's more sort of relaxing, because you don't have to think about what you're doing. It's just given to you' (AM/D 100).

6.7 *Of Day, Of Night*

- *The readers*

This group of six were all members of a local writers group who had expressed interest in hypertext fiction following a talk given by the researcher. They were all regular computer users (O/Q 1). They were all confident with the use of computer interfaces, though as we will see below, the unique design of *Of Day, Of Night* caused some problems even for these competent user-readers.

Of Day, Of Night is highly multimedia, with film clips, a music soundtrack, voice-overs, as well as animated images, and text.

- *Reading and hypertext*

At the think aloud phase, these readers all spent more time familiarising themselves with the interface than they did reading the text. Comments about reading itself were few, but those that were made were mixed: one of the group saw reading at a computer as 'work', admitting that this response was a reaction to using computers in herr job (MP/T 43). Participant AP said he found the process of learning the interface 'tedious', explaining:

> my mind set is I came here expecting to read stuff, because obviously I sit down and watch films and TV all the time, but I'm thinking I want this [a video clip] to end soon so I can read some words (AP/T 28).

Participant BW found the introduction 'interesting' (BW/T 19), while JL said he was 'curious' to see what would happen (JL/T 20). MP was already feeling that she would rather read a book (MP/T 44).

In the questionnaires, reactions in this area were still mixed, though some more discernible patterns began to emerge, since by now the readers had had time to learn the interface and approach the narrative. All the readers said they enjoyed the sensation of being 'lost' in a story (O/Q 1.1), but five of the six said they had not felt engrossed in this particular 'book' (O/Q 3.13). Four of the six said they would like to read another hypertext fiction, but two of that four did express reservations about the success of *Of Day, Of Night* (O/Q3.15).

In the discussions, the nature of reading was explored in depth by these readers, who could be characterised by a high level of articulacy around literature and literary concepts (the informed readers that Fish [1970] and Nell [1988] speak of). The use of

the term 'reading' was challenged: 'I kind of felt it was more like having an object to explore, and certainly by the end that was what it felt like' (O/1D 18). The activity was a cross between reading, solving a puzzle and playing a game (O1/D 25-29).

Reading from a screen, which does bother some of the participants in groups already described, was not a problem for this group: for example, JG 'would read parts of newspapers on screen anyhow, so reading a book is a sort of extension of that… I'm quite easy with that' (O1/D 34).

It emerged that for this set of readers there was a fine balance between reading pleasure and the perceived demand of using an unfamiliar medium. JL expressed this succinctly, unconcsciously echoing Nell and Csikszentmihalyi : 'It's a kind of effort and reward balance, whether the reward amounts to the effort. I think all of us, we felt that it was bit lop-sided' (O1/D 122). RC and BW found it a frustrating experience (O1/D 94 and 106) because of the functioning of the piece. The effort-reward balance was 'very marginal' (O1/D 154) where reading was made overly difficult because of operational challenges. JG pointed out the close relationship between reading pleasure and the interface, commenting on ways she might improve the piece's operation (O1/D 125).

We see again how relevant and helpful is Csikszentmihalyi's flow concept (1975, 2002). The best example of the practical consequence of too much effort was given by RC, who said, 'I actually got a piece of paper and a pen and wrote down things. I made notes so I could remember where I'd been.' (O1/D 158). MP had the same issue, not being able to remember what she had seen or not seen (O2/D 109). MP also found it 'boring' (O2/D103) to have to re-read sections she did not want to re-read.

However, the balance did tip in favour of satisfaction when the reading did flow and a reader's aesthetic attention was engaged. JG commented: 'I think when you got into the objects and you read about the objects and reflected on those I found that the most satisfying' (O1/D 179). JG also mentioned that she went back and re-read sections, which was the 'best bit' for her; JL saw this as 'a question of trying to tease out what she (the author) was trying to put across' (O1/D 346), a process he found pleasurable. The piece stimulated thinking and reflection at its best (O1/D 463), and relaxed, enjoyable reading (flow) occurred

Of Day, Of Night did therefore generate some responses that indicate that not only was ludic reading occurring, but that flow was possible. In terms of Iser and Fish

too, these readers were reflecting, and engaging imaginatively over time, two aspects of the kind of reading activity they argue literary narrative catalyses. If these kinds of reading experience were happening for this narrative, we may reasonably assume that other hypertext narratives could 'work' too, and perhaps the likes of Miall and Birkerts have dismissed hypertext too soon as a vehicle for literary reading.

- *Book to computer*

The shift from book to computer was, as with all the other groups, a significant aspect of the reading experience. *Of Day, Of Night* did not feel like a book to these readers: 'It's not really like anything I've seen before,' said BW (BW/T 14), which emphasises the lack of penetration into 'mainstream' reading of hypertext, particularly given that this was a well-informed reading group. JL said he was in 'a different mode' for reading this (JL/T 19), while JG said that the piece was 'very different', more like a DVD than a book (JG/T 27). MP felt that it was not really like a film *or* a book because the need to interact broke the engrossed mood (MP/T 49-54), echoing a cornerstone of Miall's (1999) and Birkerts' (1997) arguments against hypertext narrative reading.

Comments overall at the think-aloud phase were of cautious interest in the form of the piece, but the questionnaires emphasised the difficulty these readers had in 'transferring' to the digital book. Five of the six said they preferred reading in bed (O/Q 21.), only one said that the experience was like reading a book (O/Q 3.1). These were not necessarily negative responses, and so the discussions sought to pursue these aspects further.

The physical attributes of the traditional book were seen as favourable, portability and comfort being two features mentioned (O1/D 39, 42). The resistance to reading at a screen came up again, with the main problem being that the computer was seen again as a work tool, not a leisure medium by MP (O2/D 66) and AP (O3/D 89).

Though this was 'nothing like a book experience' (O1/D 54) there was nonetheless enjoyment to be had in this new form of 'reading'. The use of visuals appealed to JG:

I found that quite exciting. That's what it has over a book, because you create your own visions in your mind and you've got the stimulus of the actual visions on the screen (O1/D186).

6.8 Summary and discussion

- *Hypertext and the reading experience*

The data gathered in this study produces a description of reading which shows us how different hypertext reading really is from reading print narratives. At the level of understanding words, phrases and sentences, reading does not appear to be substantially different for these participants from any other kind of reading. All the participants were familiar and comfortable with reading from screen, for purposes of research, shopping etc.

However, problems begin to emerge when reading is for the purpose of following a narrative development: Brooks'(1984) theory helps us to understand why reading hypertext narratives proved to be difficult for many of the subjects in the study. Plot is what makes sense of the ideas and events in a narrative: that ordering structure is essential, and in all but perhaps one or two of the hypertext studied, plots were extremely difficult to find. Thus reading becomes a challenge unlike anything readers will have encountered before. They are all, no matter how familiar they are with interactive media, ill-equipped to deal with such fractured and multifarious narrative structures. Add to that dis-comfort the extra cognitive demands of the interface, and Iser's gaps and blanks become chasms of interpretive need, and his consistency building process is unlikely to occur. The one clear 'exception' is *The Virtual Disappearance Of Miriam*, which uses a tightly scripted linear structure (see chapter 7), and thus can be 'read' in an almost conventional way, alongside the hyper-linking possibilities.

Expectation clearly played a significant part in the reactions of readers to all seven hypertexts examined. Readers did express, at the outset, a large amount of interest in the concept of an interactive fiction, and there were several comments in the think-aloud sessions that show the potential for the form.

But we also saw above how many readers quite quickly became frustrated and ultimately disappointed. Similar responses were gained to each of the pieces: we can

fairly say that there is an enthusiasm for a new form of fiction, that readers are prepared to at least try something new. But we must also say, especially in responses to *afternoon, LOveOne,* and *These Waves of Girls*, and to some extent *253*, that the reading experience was not ultimately very pleasing. Almost two thirds (23/36) of the readers said they would read another hypertext (MAS/Q 3.14), but the most indicated reason was that hypertext is an interesting new medium, not a great reading experience.

Seemingly simple aspects such as the terminology used to describe the piece could influence readers' reactions: 'hypertext' suggests something book-like, 'fiction' similarly suggests a particular medium. This effect has not been discussed in the literature, but it might well be that the terminology will need to be used more carefully, or eventually a unique set of terms developed (more likely evolved) to describe what these fictions are to readers who only know fiction from books or films. Because hypertext is none of the familiar types of narrative or media, the potential for disappointment is raised if inappropriate terminology is used.

The use of the very term 'reading' is not even appropriate, this group's reactions suggest. Readers were quite quickly able to discern that new kinds of reading strategies would be needed, and they were almost all prepared to put some time and effort into the project. But a new kind of reading, combined a new kind of everything else, proved to be too much for most of the participants, leading to the negative responses we saw above.

Reading was typically seen as a relatively passive, relaxing, comfortable activity, across the 36 participants, even those who were more specialised in the use of interactive media. Hypertext reading was often seen as work, compared to reading for pleasure. This reaction might well be generated by a reader-study of 'difficult' print fiction, but hypertext fiction has its own particular difficulties, not found in, for example, Modernist novels. The reaction that hypertext is hard work came about partly as a result of the need to learn a new medium and its interface, because of the need to interact, and because of the new kind of narrative structures (see Chapter 8).

For hypertext reading to become as relaxing, and pleasurable as the familiar book-reading experience, much more work will need to be done in developing accessible narratives and interactivity designs. Thus, the arguments of Murray (1997b) and to a lesser extent Douglas and Hargadon (2001) now appear much more

telling than those of advocates such as Landow (1997) and Bolter (2001), who rather too easily dismiss the growing pains hypertext gives its readers.

The description of the act of reading proposed by Iser in 1976 may well be the best fit for what happens when readers encounter hypertext fiction, in terms of their imaginative involvement with a work that is virtual by nature and only realised in the imaginative minds of the reader; but we must now apply more fully to hypertext the schema theory he proposed for print reading, which Douglas and Hargadon (2001) have developed in the digital context. Hypertext does not conform to any previously seen reading media and new schemas for dealing with it will no doubt evolve over time: what is needed now is to understand that readers will attempt to read according to models they already know, and hypertext fiction reading will please or frustrate insofar as it meets expectations gained from other media.

An interesting factor mentioned by some readers was that they typically read for much longer periods of time when reading a book, than they did with the hypertext. Technical issues are influential (e.g. screen resolutions and brightness) but there is the strong indication that reading long sequences of text on a computer screen is not what readers want to do, or perhaps more significantly, are accustomed to do from their use of the computer for web browsing. Text on a website is typically in short chunks, or, if in longer sections, may even be printed out for reference later: printing out is not an option for a fully interactive hypertext, but restricting screens to small amounts of text is of course possible.

The notable exceptions to these trends were found in reactions to the more visual pieces, where 'reading' was only one of several activities to be engaged in. *The Virtual Disappearance of Miriam* was very well received. Comments around reading were few but there was very little negative response. Reading in this piece is always combined with interactive elements or visual effects, and the text is always short and can be easily digested. This piece in particular seemed consistently to generate real reading pleasure. It is of course important to note that this reading group was composed of postgraduate students, studying narrative structure and interactivity, but nonetheless *Miriam* presents a positive potential example. *Of Day, Of Night* also attracted some positive feedback, though reading was seen to be frustrated by a confusing interface and narrative development.

What *Miriam* and *Of Day, Of Night* would appear to offer is a relatively straightforward and largely linear narrative structure, allied in the case of *Miriam* to a

simple starting menu and clear interactivity for the most part, as the story progresses. These 'clues' are pursued in the following chapters.

- *The tension between 'book' and computer*

We have seen that the responses registered by all the readers revolve around expectations based on experience of and familiarity with previously read narratives. More particularly, and of great significance for the future of hypertext fiction, schema brought from previously encountered *media* are a major factor in readers' responses around the reading experience. We have noted that Douglas and Hargadon (2001) derive their notion of schema from Iser's (1976) schema theory in *The Act Of Reading.* This line of thought seems to fit very well the responses of the readers in this study, but Iser could not, and Douglas and Hargadon do not, fully take account of the fact that hypertext fiction exists and functions in a world of its own, where *no* familiar schema of any kind easily apply. Schema for the use of the *medium* itself are challenged by hypertext .

The different groups all registered degrees of confusion and uncertainty with the remediated (Bolter 2001) book. Expectations in terms of medium were not fulfilled, no matter which medium the reader was most familiar with prior to the study, e.g. book, game, or web. We can enhance Douglas and Hargadon's 2001 theory by noting that readers' schemas can derive from number of media sources, not just from previously known examples of narrative within the medium they are currently 'using'; it is not just a simple matter of 'book' versus computer, for three reasons: hypertext matches neither; each reader will apply his or her own individual experience and expectations to the piece; and those experiences now may come from many media and many narrative forms.

In hypertext, narrative schema mix with medium schema and interface schema to create the entirely new thing which is the hypertext; along with that mix comes the potential for confusion and frustration, as we noted in regard to *afternoon*, *LoveOne*, and *These Waves of Girls*, where no schema seemed to fit the bill. The gamers will be thinking in terms of game-play narrative and functionality conventions, the keen book-readers will be looking for print conventions, the regular web browsers will apply their own information-seeking habits to the activity. Those readers familiar with

many media will be attempting to see which schema might fit, for reading activity, narrative structure and plot conventions, and for interactivity.

These findings support and enhance the ideas of Murray, and Douglas and Hargadon in particular, but also mesh with the work being done by Kendall, and to some extent Miall. Murray (1997b) and Douglas (2000, 2001) acknowledge the lack of stable conventions in 'literary' hypertext, Miall (1998, 1999) argues that reading in hypertext is inherently difficult to the point of blocking imaginative interplay; Kendall and Réty (2000) ask for coherent narrative progressions and good usability tools to be designed into hypertext software.

The above connects also with ergonomic factors around a book's portability and ease of use, compared with a computer, and with the perception that reading fiction is inextricably tied to the book. A book is where we read fiction, and many readers found it hard to adjust their mindsets to 'reading' fiction on a screen, because it is simply almost completely unknown to them. Nielsen (1990) argues that the book metaphor should be avoided in designing usable hypertext systems, and yet we can also see that perhaps the book does now need to be more carefully and subtly 'remediated', perhaps along the lines of some of Campbell's *Dreaming Methods* fictions: the book on screen is no longer a book, and the readers in this study would all be happier if the hypertext functioned first as a piece of interactive media; but book metaphors in content, structure and design can hardly be completely avoided, and the data suggest that 'book' might be constructively re-used as a design reference or occasional literary or visual metaphor.

Some very simple and practical needs were raised by readers across all seven of the hypertexts examined: though there were obvious and expected differences in the detail of the comments, there were common threads that suggest clearly what readers need in order to help them cope with the comprehensive newness of hypertext reading on a computer:

- A 'front page', i.e. a place that is recognisable as the beginning of the 'book' and narrative, seen as essential by many of the participants in the study.
- A visible and viewable structure, whether we use a book metaphor or a web convention (such as a menu), which includes a way to know how 'big' the hypertext is. This includes the need for a sense of how much has been read.

- An endplace, a page, screen or facility which enables the reader to know they have finished their reading, i.e. that all there is to be read has been read. This is different from a narrative ending, which not all readers said was essential.
- Not 'too much' text on a single screen: clearly this is a matter for individual preference, but it is apparent from the data that the heavily text based pieces were less enjoyable to read, and not just because of perceived poor writing but also because of typestyles, colour, layout, which are of course all design issues.

- *Some conclusions regarding schemas*

Expectation and the influence therefore of schemas appear to be very significant in the reading experience. Beyond what we already have in the literature, we now have data which tells us that *readers, no matter what their initial preferences, need help in finding and applying schemas for narrative and usability or they become disillusioned, frustrated, bored and ultimately stop reading.* The problem for readers is much more powerful than the literature suggests: it is not just a matter of whether a reader is keen enough to work at the newness of form, structure and operation, as advocates of hypertext might suggest, and it is more than a simple incompatibility between interactivity and reading, as detractors argue.

The data here shows that it is much more even than a question of convention, it is a question of which conventions are most likely to be apprehended and used by readers with multitudinous backgrounds and reading experience, none of which will neatly fit hypertext reading. To put the problem another way, *nothing in the current array of narrative or interactivity conventions properly fits hypertext, precisely because hypertext fiction is by nature combining form, content and operation across all media, something that no other narrative form does.* Hypertext is utterly unique in this way and therefore uniquely able to baffle its readers.

Hypertext has not developed its own conventions to help readers through the mass of links and narrative multi-structures (Murray 1997b): *we can now add that conventions already in existence in other media need to be employed and adapted for hypertext so that readers have ready 'clues' as to what is happening and what they can do to make things happen.*

The hypertext author therefore needs to consider which schemas his audience might be influenced to draw upon when they encounter the hypertext. The data again help in this regard. Because of software limitations, *afternoon* may not be able to present itself with more book-like features to aid the reader's progress through the piece, but a redesign might achieve this without compromising Joyce's original concept. *The Virtual Disappearance of Miriam* appears to succeed relatively well because it uses familiar elements from web and interactivity to enable ease of usability, and it also uses visual and verbal elements which are familiar from graphics and print. It will require further research to pin down the precise optimum combination of schema elements, but *Miriam* appears, for its subject group at least, to be approaching a usable, readable, engaging hyper-book format.

The unfamiliarity of the reading medium, in addition to non-standard interactivity behaviours caused distraction and disruption in the reading process in *afternoon*, *Waves* and *LOveOne*, but it is interesting to note that this aspect of reading was not such a problem in the responses to *253, Miriam, Of Day, Of Night*, and *Amelie*. The latter four hypertexts employed a more recognisable model of web-page presentation and navigation: they are not using a book-like model, but a more obviously web-familiar model. The book has been more fully absorbed into the digital medium in these examples, and the implication must be that *the medium strongly affects and influences the reader's behaviour, and the perceived quality of the reading experience, as Cavallo and Chartier (1997) argue.*

The data above help us to understand what is going on in readers' imaginative minds when they are faced with a schema-busting hypertext. It would appear, for this sample of 36 readers, that no matter what their experience of reading, preference for narrative type, or familiarity with medium, *once the narrative is presented on screen, then experience of web-site use comes into play for the reader, either causing frustration for those readers who expected and wanted a book-like experience, or relative comfort for those expecting a web-like activity.* This is clear in the data, and will lead us to the argument that interface design plays a vital role in 'smoothing the way' for a positive reading experience, a contention that has not been explicitly stated in any of the literature reviewed in chapters 2 to 4 above.

Chapter Seven

Narrative

It is difficult and somewhat artificial to separate the reception of the narrative from the discussion of the medium and the interface features, because as we have already argued, the medium, the narrative form, and thus the aesthetic experience are intimately bound together. However, in order to present the data in a digestible manner, and to facilitate coherent discussion, this chapter looks specifically at reader responses to the narrative forms of the selected hypertexts. Cross references to other aspects of the experience will be made where helpful.

It is also important to note that where participants use terms such as 'story', 'narrative' and 'plot', no editing has been carried out to align their usage with the conventionally recognised distinctions between *fabula* and *szujet*. In the analysis and discussion, it is hoped that the distinction is clear, but it is acknowledged that some readers in the study use, for example, 'story' when referring to 'narrative'.

7.1 *afternoon, a story*

It was notable during the think-aloud sessions that the issue of narrative structure, motivation and ultimate reader satisfaction raised more comment than any other. Initial reactions, as participants began to read the text and familiarise themselves with the interface, suggested that narrative in this particular interactive environment would be difficult to locate. RS commented, after two or three minutes in front of *afternoon*,

> What I'm doing now is I'm trying to read the story, but half of my mind is thinking "what do I do next?" and these signs are distracting me because I'm thinking "should I read these first"... It has distracted me from really getting into, I don't feel I'm into the story yet (RS/T 42).

Similarly, KH noted, 'I'm concentrating much less on the text than if I was reading the story... I'm pushed out of the story by the things that you've got to

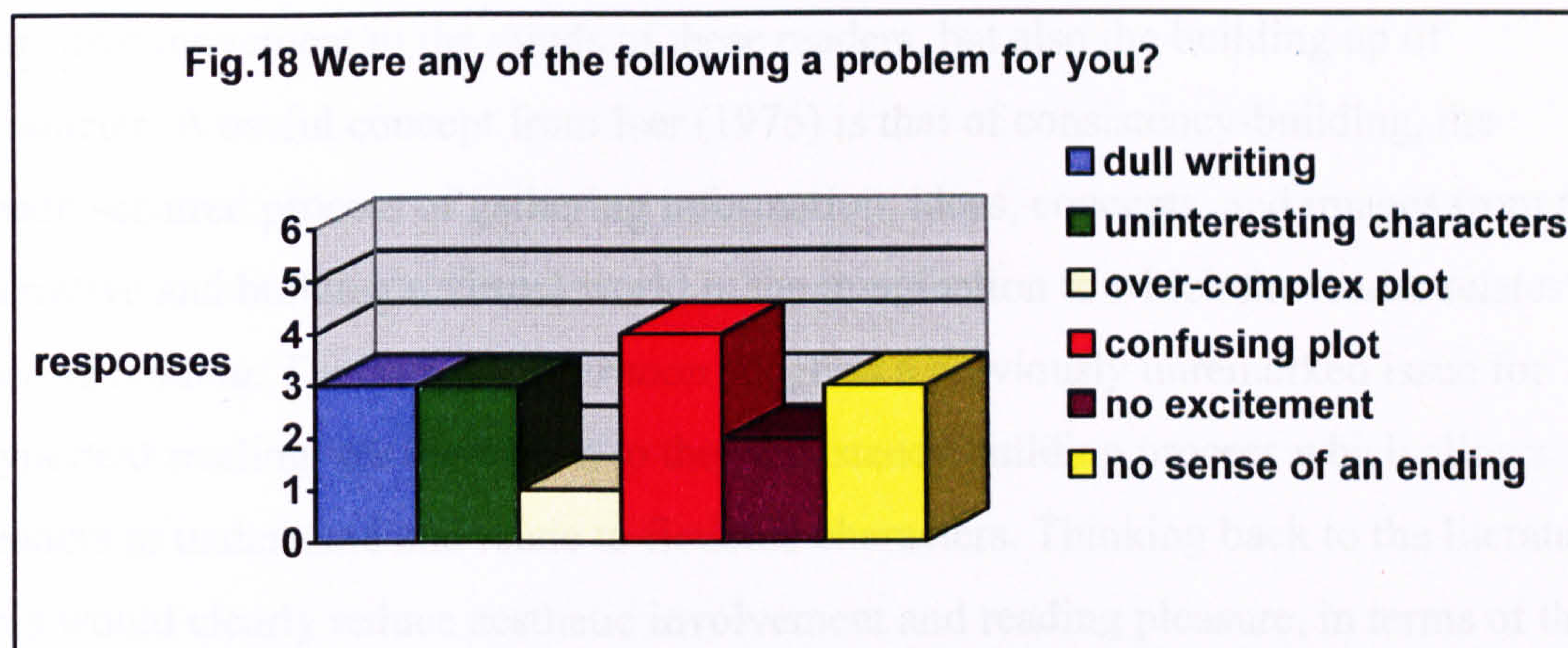
interact with' (KH/T 46). Participant DL also commented, albeit perhaps implicitly, that narrative and interactivity were inter-reacting:

> from what I've seen so far what's lacking is a sense of direction, that it's that linear progression...it's hard to see where the links are and why there are links there and what they relate to... You're going forward but I don't know what that relates to (DL/T 67).

Towards the end of her think-aloud session, KH said, 'The interactivity should be knitted into the story as an integral part of the story' (KH/T 63), an emergent principle which, as we will see, came up again in the discussions of *afternoon*, and indeed of the other selected hypertexts in this study.

Various other aspects of the narrative were mentioned as initial challenges: HC said, 'At the moment I haven't got a sense of character either, which is a key ingredient' (HC/T 85). Related to that early reaction was the awareness that *afternoon* seemed to be using multiple narrators: 'This is a different voice that's speaking... and I don't understand it... is it two people talking about somebody else?' (HC/T 48). Split narration is a common literary device, and is also used in film via voice over or point of view camera techniques: but in this context, different narrating voices were perceived as awkward.

Narrative structure was hard to discern: DA said, 'It's usable, but faintly irritating, because you've got absolutely no idea of structure at all' (DA/T 67), while HC felt that 'we obviously haven't got what we might call plot' (HC/T82). Participant RS found it difficult to catch the opening narrative thread: 'It's quite interesting but... it started jumping almost on the first page. There was no attempt at scene setting' (RS/T 79). It is revealing for this group to note that in the questionnaires, all six participants said that they like to be challenged (A/Q 1.6) by the story, and all six were prepared to go along with a difficult plot to find out how it ends (A/Q 1.7). However five of the six would give up on reading a story if the plot were uninteresting (A/Q 1.8). It might appear that *afternoon* was so much of a challenge that interest was eventually lost, and HC made this point by saying, 'What's going to convince me it's worth going on?' (HC/T 89). The questionnaire (A/Q 3.3) indicated the range of problems readers perceived:



We see that confusing plot was the most cited problem. In addition to the specified categories in Figure 18 above, participants cited a lack of sense of character and lack of narrative coherence as problems.

In the discussions, narrative issues were clearly to the fore in readers' minds, and these dominated the conversation. Having read the piece more fully, some readers were still unsure what the piece constituted: 'Because it was presented to me as a novel, a darn short novel from my point of view, that affected my, I was prejudiced by what I was anticipating I would get' (A2/D 243). 'I don't think you can call it a novel, for a start,' said participant KH (A2/D 345).

On character, participant DL was dissatisfied:

> I think characters are important – I'm usually driven by relationships between characters. That was one thing that didn't come out particularly well; and I didn't feel I had any knowledge of who they were, why they were, why they were thinking the way they were they were thinking (A1/D 45).

HC 'never got a sense of who people were' (A1/D 88), and ultimately DL found that 'they weren't one-dimensional characters, they didn't really have a dimension at all' (A1/D 345). Character is little discussed in the literature around hypertext reading, and not much covered in the literature of reader response, and thus has not been discussed so far in this study. However, it is significant that grasp of character appears as an issue for many readers in this study, across all the hypertexts examined. The

strong indication is that the hypertextual form of *afternoon* frustrates not only narrative movement in the minds of these readers, but also the building up of character. A useful concept from Iser (1976) is that of consistency-building, the reader-centred process of gathering information, ideas, concepts, and images from the narrative and building a virtual world in the imagination to which the reader relates during reading. The data for *afternoon* suggests a previously unremarked issue for hypertext reading: the disruption to the consistency building process which allows readers to understand and relate to fictional characters. Thinking back to the literature, this would clearly reduce aesthetic involvement and reading pleasure, in terms of the conceptual frameworks of many literary theorists (eg, Forster 1927, Iser 1976, Nell 1988, Miall and Dobson 2001).

As in the think-aloud sessions, narrative structure was a problem for these readers. RS was aware that there was an author-designed structure, but in the case of *afternoon* he found it difficult to enjoy. RS clearly displays an insight into narrative form and technique, and he is able to say quite consciously that *afternoon* does not 'work' for him, on the terms he defines:

> RS: ... you know I think I mentioned Kurt Vonnegut who will leave gaps, leave puzzles, leave things hanging – I'm very for that... I'm still very conscious of an existing link that has been made with all of these characters, all of these narratives, all of these plots.
> Researcher: That's the author's job...
> RS: Yes, so not just loads of plots, they are the sub-plot of the plot.
> Researcher: Yes, I understand that. So, did you have the sense of this being an aesthetic object? When you read a novel, you know this is a piece of art somehow (we could ague about what art is), but you would say 'yes this is a wonderful construction, a wonderful thing that someone has made'?
> RS: Or not...
> Researcher: Or not.
> RS: But you'd use those value criteria.
> Researcher: And you didn't feel able to say that about this?
> RS: I struggled (RS/D 92).

Others felt the same, though they expressed their frustration in different ways. HC said, 'It was too fractured. Well, there wasn't a story, was there, really?' (A1/D 153). *Afternoon* seemed more like 'the pages of a lot of books all thrown together' (A1/D 159) to participant DL, while SB commented, 'To me it was too unstructured. I like to be able to identify a structure fairly rapidly, to be able to organise how I respond to it' (A2/D 205).

Participant KH progressed that analysis, comparing *afternoon* to a commercially available Conan Doyle mystery interactive game:

> the thing about the Conan Doyle thing is you, the genre is like that, you have to solve the clues, so the structure and the genre are fitting together really well. With this there wasn't such a good match between the genre, which is supposedly a novel, and the structure. The two were at odds with each other (A2/D 252).

This is an interesting point in itself, and especially echoes Brooks' (1984) use of Conan Doyle examples to develop his theory of the importance of the cause-effect nature of plot, and the resolution-driven nature of a reader's engagement with plot. Participant DA summed up this part of the discussion by explaining that for him, open ended and mystery games succeed in engaging the user because they offer narrative choice and points of digression from the linear path, in a context and overall narrative sequence that the user understands. Significantly in terms of the narrative theory of Brooks and the schema theories of Iser (1976) and Douglas and Hargadan (2001), DA said, 'one thing will lead to another, but with this I never achieved that sense of one thing leading to another. I thought, "Oh blimey, he's off again"' (A2/D 262).

Closure was elusive for this group, and that was not seen as a positive aspect. Comments such as 'maybe you can never end, because of links' (RS/D 194) and 'I just didn't get the sense that anything was going to come together '(A1/D 167), suggest a feeling of frustration, at least for these participants.

More specifically, a narrative ending seemed not even to be *present* in the available text of *afternoon*, and this is something that participant DL felt should be provided by the author: 'you want to have an ending – you feel the author has taken you through the story to get to the ending' (A1/D 318). Ultimately, for participant

RS, the lack of recognised structure and an ending might be enough to prevent him reading another hypertext fiction:

> If you said, "Here's another exactly like but a different story," I'd be honest and say, "No thanks." "Tell me the story," I'd say, "tell me the ending" (RS/D 229).

Overwhelmingly, the consensus was that the ending, whether one was able to be found or not, did not satisfy this group: five of the six answered no to the question 'did you feel satisfied with the ending?' and the remaining one answered 'yes/no' (AQ 3.12).

However, looking beyond this particular reading, the researcher asked if RS might find eventually that there is a different kind of closure to be had, of the kind that author Joyce mentions in the text of *afternoon*, that is, closure without conventional narrative ending. RS replied,

> That was the one positive I'd say that came of this experience for me personally, which is an increased sense of wanting to be comfortable with that view that that author said... not just reading, but the kind of plays I want to go to or the kinds of conversations I even want to have' (RS/D 29).

Finally, it is useful to see how these readers reacted on the issue of aesthetic involvement with the story, that hard-to-define sensation of being rapt, immersed, or 'lost' (Nell 1988) in the narrative's imaginary/imagined world. The readers in this study all found it difficult, at the end of their free-reading time, to say that they were absorbed by *afternoon, a story*. Out of the six, only KH found some pleasure in the narrative, saying that she found the piece more satisfying the longer she spent with it (A2/D 324). In the questionnaires, 5 of the 6 said they were not 'lost in the book' (A/Q 3.13), four of the six said they would not be able to summarise the story to a friend (A/Q 3.11).

Some possible reasons for these responses were suggested: RS said, 'What I was doing, half of me was wrangling with "what can I, can't I, should I, shouldn't I do?", as well as trying to engage with the story' (RS/D 170). Participant DA had a similar comment: '...the structure as well, it didn't engage you. In a way I was

clicking through it, quite quickly at times, in a desperate attempt to be engaged with it' (A2/D 30). DL connected several aspects that made engagement difficult for him:

> I don't want to say it was completely badly written, but it was badly constructed. It didn't seem to have any order, flow, narrative that wanted to make somebody engaged. When you are reading pages and pages which had no real thread going through them, you get sick of it, you lose interest, you know... (A1/D 188).

DL added to the above thoughts by saying that, for him, a story without a beginning, middle and end was not what he wanted: 'I want to read a story that I can engage with and get involved with' (A1/D 208). Participant SB, coming at the piece with extensive gaming experience and looking for an engagement generated by interactivity, was ultimately distanced from *afternoon*, saying,

> I didn't feel like a participant. I felt like somebody who was being prevented from finding stuff. I didn't feel as if I had a lot of control over what was going on... If the form reflected the nature of the story – I gather there's an accident in it – if you're in a situation where the way the accident is represented by the way you have more or less control, then you're producing something interactive, and this isn't (A2/D 418-437).

7.2 *LOveOne*

When asked about their reading preferences, five of the six said they enjoyed a challenge in their reading for pleasure (L/Q 1.6), and all six said they were prepared to work with a difficult plot (L/Q 1.7). Despite that openness to challenge, this group might be characterised as being 'traditional' in their experience of books and fiction, with only one of this group having had some contact with multi-stranded or interactive narratives, via early computer games.

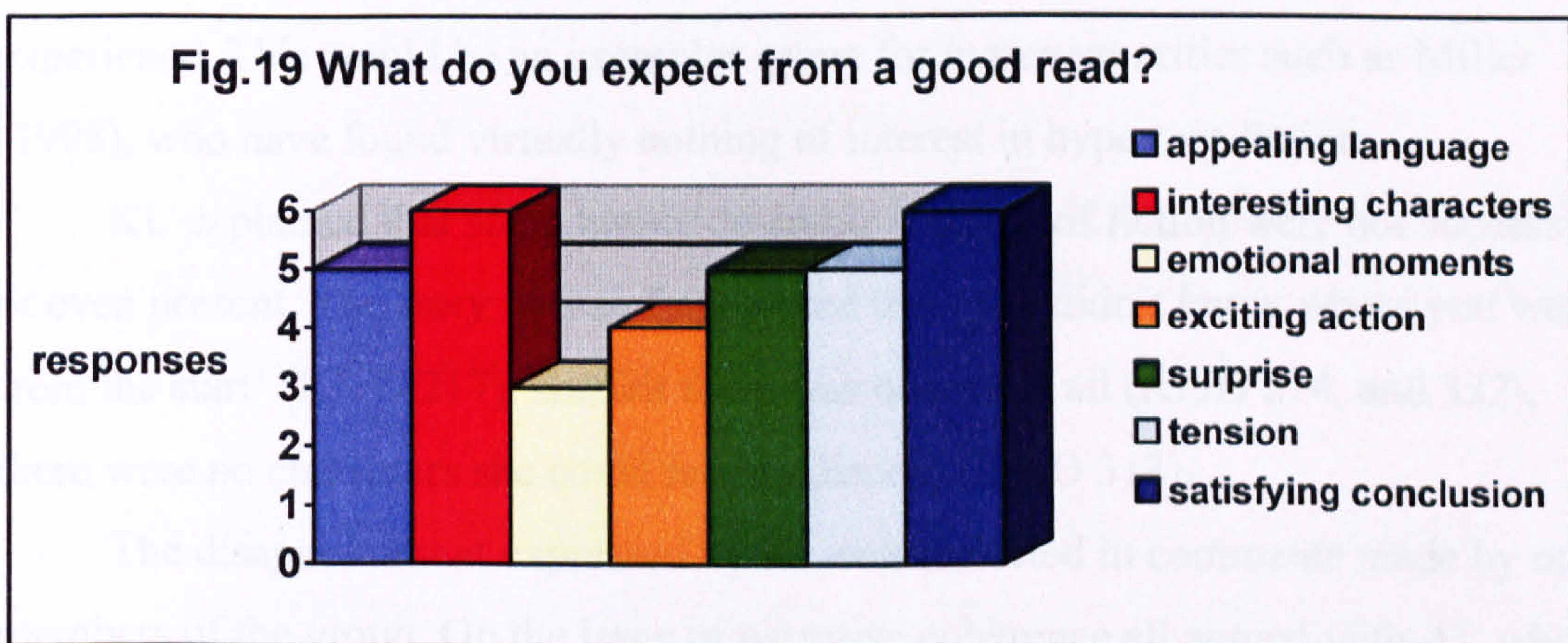
Thus it is perhaps not surprising that in the think-aloud sessions, this group, though open to new possibilities for narrative, all expressed either puzzlement at, or actual dislike of the multi-linear plot structure that become quickly apparent. Narrative belongs to a different medium for them, and the change in presentation, and

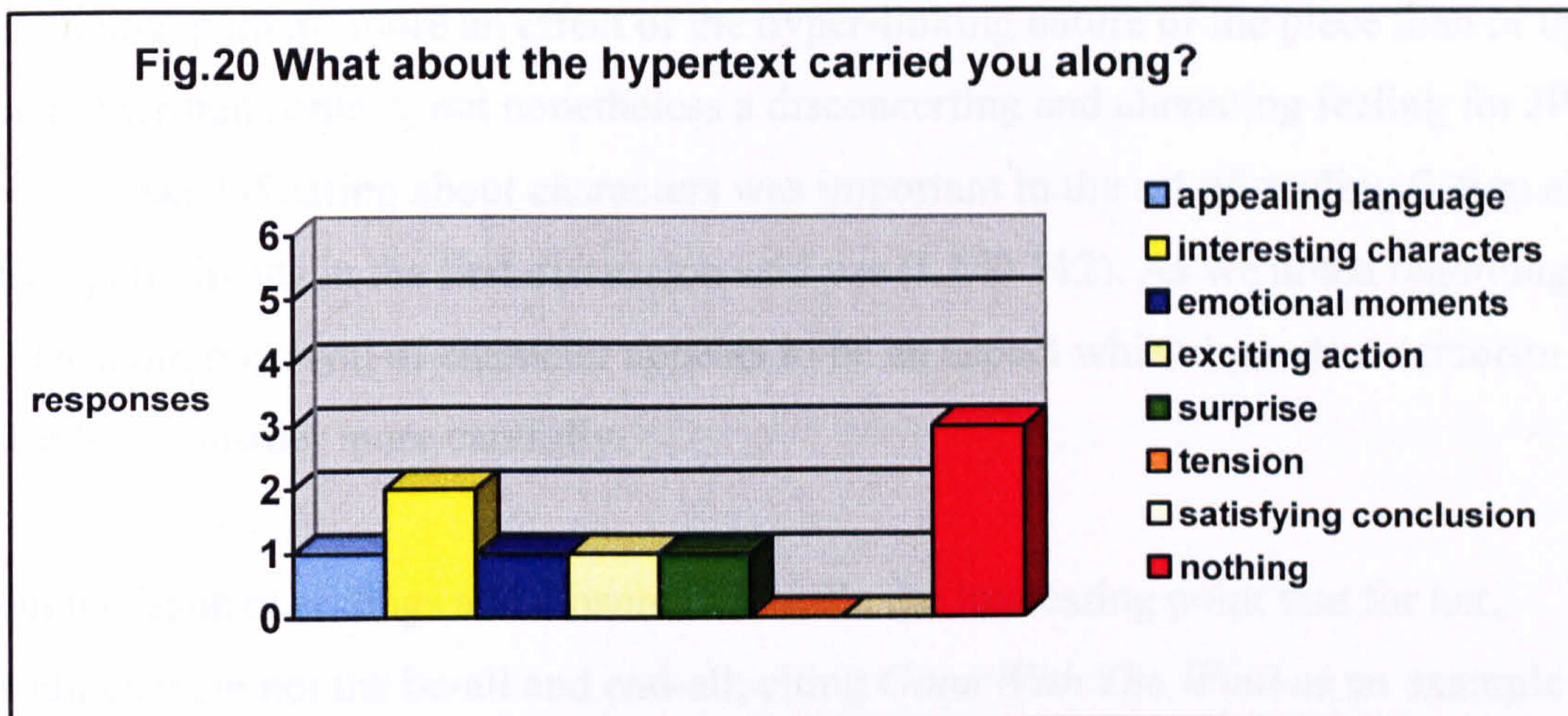
particularly structure, was hard to accommodate. Participant CL, despite being technically adept with computer interfaces, commented,

> This structure is completely new to me in terms of something here at the beginning which I choose. I switched from looking at that second one to looking at the first one because it's my experience to take it in a straight line' (CL/T 55).

KL said of the narrative development 'because it's all beaten up, it's disrupting the highpoints' (KL/T 97). RF, talking about his dislike of having to 'do' anything extra beyond reading and turning pages, said, 'I'll tell you why I don't want to do anything else – it's digressing from the story' (RF/T 116). MH noted that 'it must be very difficult to write, to produce something like that that makes sense whether you start from the middle or the beginning… because most of us progress through beginning, middle, end' (MH/T 71).

By the time of the questionnaires, when all readers had had at least two weeks to read *LOveOne* at their leisure, there was agreement that expectations of narrative elements had largely not been met by *LOveOne.* Figure 19 (L/Q 2.3) and Figure 20 (L/Q 3.2) below match expectations with response:





It is clear to see from Figure 20 that *LOveOne* received scant positive response in the area of narrative elements. A direct comparison with Figure 19 shows that the elements indicated as 'expected' were only fulfilled for one or two readers in each category. The most notable response was that three of the six said that nothing carried them along. All six said that they did not enjoy the story (L/Q 3.7), and none of the six could summarise the story (L/Q3.11).

With such consistency across all members of the group on such central areas of narrative fulfilment, the discussion sessions were predictably vociferous! Opinions were strong and decisive, with every member of the group expressing disappointment in the form and content of the piece, and frustration of various kinds in the experience. This would be an exemplar group for hypertext critics such as Miller (1998), who have found virtually nothing of interest in hypertext fiction.

KL explained that some highly desirable features of fiction were not successful or even present. The story was so fragmented that 'you didn't know where you were from the start' (KL/D 217), she felt there was no plot at all (KL/D 274, and 322), there were no characters she could readily discern (KL/D 313).

The disappointment expressed by KL was reflected in comments made by other members of the group. On the issue of narrative coherence all agreed with AL who said, 'I found it very jumbled' (L1/D 23) and MH who said, 'I couldn't follow any real story in it at all… there were certain parts of it that were quite well described, quite descriptive, but the trouble was they seemed very isolated' (L1/D 23- 26).

Characters were elusive to AL (L1/D 99) because they were not well described or given depth by the author; they appeared to JP (L1/D 103) to be constantly

changing, perhaps more an effect of the hyper-linking nature of the piece than of the actual written content, but nonetheless a disconcerting and alienating feeling for JP. When asked if caring about characters was important in the act of reading fiction all four participants in the first discussion said yes (L1/D 112). As we noted regarding *afternoon*, portrayal of character appears to be an aspect which hypertext criticism needs to consider more carefully.

On the issue of endings and closure, KL made the interesting point that for her, endings were not the be-all and end-all, citing *Gone With The Wind* as an example of a satisfying novel without a clear-cut ending (KL/D132-145); but for the others in this group, the ending and the sense of closure that goes with it was important. CL had already flagged up his concern when, in the think-aloud, he said,

> ...when does a hypertext book end, in the sense of, um, there's a slight concern of leaving it uncomfortably hanging, whereas the destination of most books would be you've finally arrived and "wow!". There's the slam dunk (CL/T 155).

In the discussion, he supported his own thought by saying, 'When I had apparently finished I was feeling "well, have I finished?", and I was clicking around trying to find unused links that I hadn't used' (CRL/D 75). JP said, 'It was frustrating – it never seemed to finish, and you always want a finish' (L1/D 74). In the questionnaires, all six readers had said they were dissatisfied with the 'ending' (L/Q 3.12), and the discussions made it clear that no one felt they had found anything they would even have described as an ending.

Regarding the aspect of absorption, the questionnaires indicate a strength and consistency of feeling: no one said that they were engrossed in the piece, (L/Q 3.13), and as we noted in Figure 21 above, very little carried the reader along in their engagement with the story. In the discussions therefore, it is not surprising that comments were almost completely negative, with no continuing interest in *LOveOne*, although there were one or two hesitant expressions of remaining curiosity in the future of the form generally (L1/D 521).

The writing failed to attract participant KL: 'It didn't suck me in... I kept reading and thinking "oh please" after every one of those paragraphs' (KL/D 20). KL also commented that in an example of what she considered to be great fiction, she would find a 'finely plotted story, great historical research... really believable characters' (KL/D151), whereas *LOveOne* did not offer these. When the researcher suggested that perhaps writers have not yet mastered the new storytelling medium, MH said,

> To be honest with you, I think this particular piece has failed on everything, because I didn't identify with the characters, I couldn't follow the story, it didn't have an ending, and it didn't draw me into it (L1/D 492).

Along similar lines, AL said: 'It didn't hold my attention enough to keep going with it very long' (L1/D 39 She felt the group would have tried harder with the piece, but 'the story didn't grab us' (L1/D 181). RF said it was 'not interesting at all' (L1/D 72), JP found it frustrating (L1/D 74). Ultimately KL felt 'just irritation' at the lack of wanted narrative features (KL/D 332).

7.3 *253*

The think-aloud sessions generated relatively few comments around the narrative itself, but early reactions are of interest because they indicated once again how interrelated the medium, unique interface and narrative are.

There was some initial disquiet at the lack of a conventional structure: 'It's not like a traditional narrative from start to finish – it's more like "read all these and come to your own picture"' (JCT 78). Along similar lines, JH was not sure where the story began: 'I don't know – there isn't one. There isn't a sort of start. I can't see which bit you're supposed to click on first' (JH/T 23). It would be preferable for JH 'if you could just begin it. Start wherever you want and it will always make sense' (JH/T 55).

There was also an awareness of the potential for difficulty caused by the hyper-linked format and therefore non-linear reception of the story: 'I think a lot of the problem would probably be linking it together' (JC/T 119): this participant would prefer to read the piece, as he put it, 'in a logical fashion, read one, two, three' (JC/T 120).

However, these were minor concerns at the think-aloud stage, and overall the reaction from all four participants was positive. JC said, 'It's good!'(JC/T 83), referring to the layout and train-carriage structuring of the story, while JH said that she liked the idea of being able to read in a linear order, or have the freedom to explore the narrative via the train-carriage graphics or the hyper-links in character sections, if she preferred (JH/T 191-205). Participant PC cautiously appreciated the use of simple links in the text to give the reader movement through the story (PC/T 184).

Response to the actual narrative became more hesitant and even negative, once these participants had had time to read more fully. There were some split returns in the questionnaires, for example this group were divided 50/50 as to whether the ending had pleased them (253/Q 3.12), and only two of the four felt they would be able to summarise the story (253/Q 3.11).

All four readers said they enjoyed the narrative structure (253/Q 3.7), but when this aspect was followed up in the discussions, it appeared that the plot had not satisfied expectation. According to participant JC, plot was 'very fragmented. I wasn't able to develop that suspense feeling, that sort of building-up-of-the-story feeling' (252-1/D 26). JC identified the need (and indeed the very possibility) to make choices and follow links as being part of the cause of this fragmented plot and fragmentary experience (253-1/D 26). Similarly, participant PC: 'I think it's the plot that would draw me in, when reading a novel. And I think that's what I found was missing from the interactive piece' (253-2/D 29). JH said, 'I felt like I needed to see more of the plot. I thought, "Oh, where's the story?"' (253-2/D 312). One reader felt the piece had no 'start-to-finish feel' (253-2/D 129), and another saw it as 'a start and end, but no middle' (253-2/D 134).

The issue of narrative completion is particularly interesting in this case because author Geoff Ryman provides the reader with a link to a place called 'The End Of The Line', in which the end of all the characters in the piece can be read. This option was used by all four readers, but its effects on reader satisfaction were not consensual. For example, PC 'found it strange that you could find what happened, right at the start if you wanted to. You could find out the ending' (253-2/D 66); however he also said that he was left with a feeling that he had missed something, 'there's not a feeling of completion' (253-2/D 113). Similarly JV implied that knowing from the start that the

train in the story was going to crash somewhat interfered with her reading absorption (253-1/D41-56). And, despite this apparently 'clear' end-place, PC said,

> It kind of left me guessing, not in a good way really. Left me guessing, so, right what shall we do? I'll go and find out the ending and I get my answers that way (253-2/D 266).

Reader response to characters was another aspect covered in the discussions, and it should be noted that Geoff Ryman structures the navigation system and the whole narrative around lists of characters in the various train carriages, and so the reader has no choice but to read these character profiles and decide whether to follow links from them. There is no 'scene' or chapter structure available in this piece. Interesting and empathetic characters were seen to be significant factors in drawing the reader into the narrative ((253-2/D 26), and this reading group expressed enjoyment of Ryman's character-led approach to the story: for example PC said, 'I like the way there were links between characters, and you could piece together what was happening through the characters' (253-2/D 185). On the other hand, the pre-dominance of character as the structuring feature did frustrate the equally important need for a strong plot, and left this group somewhat dissatisfied, a point made by JH: 'It just seems too many characters. There's not enough...plot' (253-2/D 312).

Overall, in terms of reaction to the narrative, this group felt that the concept was good (253-2/D 360), but that the delivery technique and the consequent experience of narrative did not quite match the promise felt in the initial think-aloud encounters. It was felt that navigation was one of the key areas Ryman could improve, and this aspect is covered in chapter 8.

7.4 *These Waves Of Girls*

Each member of this reader group expressed an initial interest in reading a new kind of literature, whilst also admitting to some caution: 'Theoretically I'm into the idea of interactive narrative, but I don't know how that relates to my own enjoyment really, whether I get much more from a book' (CV/T 42), was a typical comment at the start.

Questions and anxieties about the way the story might emerge were expressed within the think-aloud: 'I'm not sure how much I'm getting a story...' (CV/T 62) was

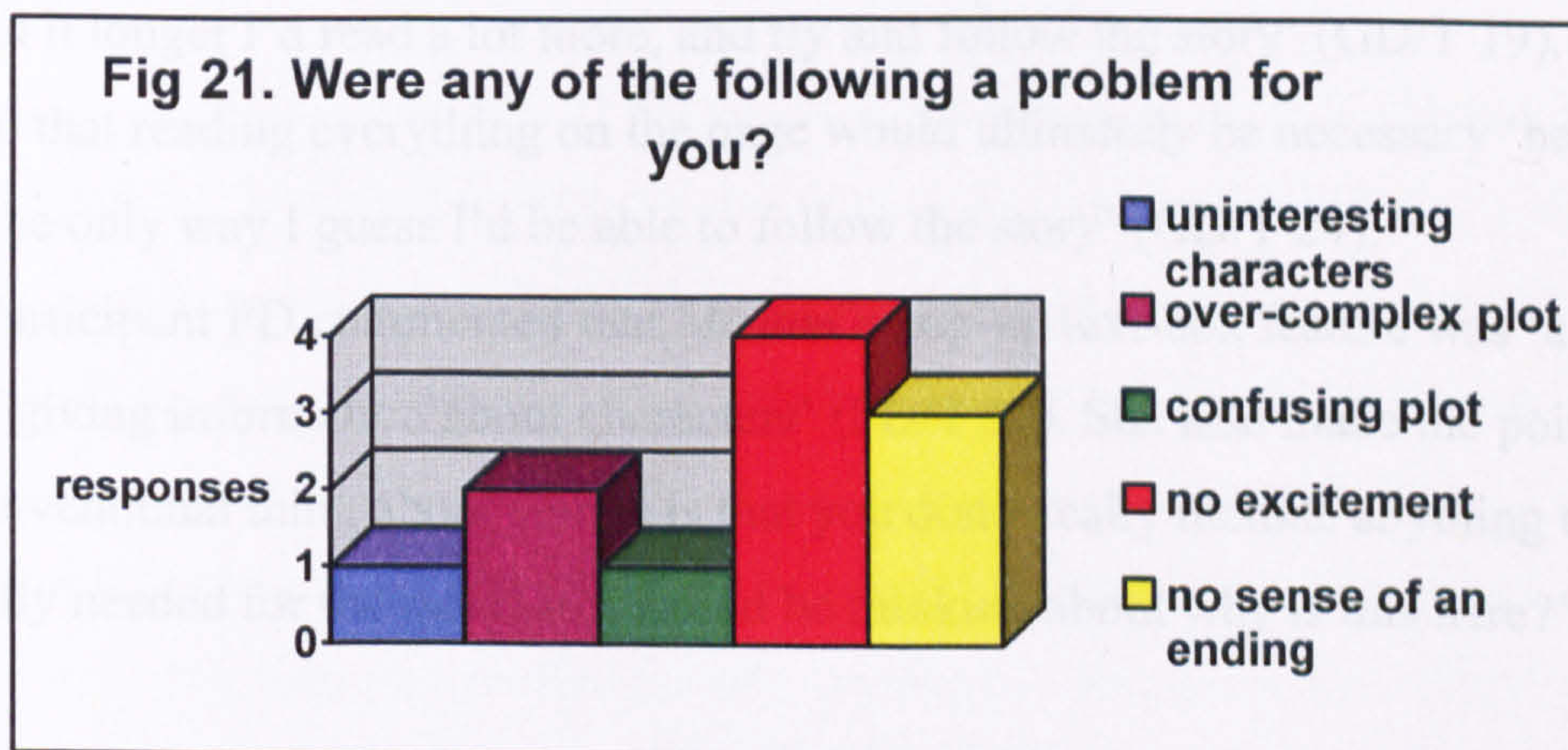
one tentative comment. A very clear statement of perceived barriers to finding the story came from participant EC, who said,

> First I wouldn't be able to work it out, and secondly the story isn't making any sense, and there's so much happening I don't know what I'm supposed to be looking at' (EC/T 29).

There were other uncertainties: participant KC asked, 'Have I missed something significant by not clicking on all the blue text?' (KC/T 123), while participant RG was unclear about the narrative form and said, 'I presume it's a collection of short stories (RG/T 25). Participant EC asked, 'What is the point, then, to build a story?' (EC/T 14).

On a positive note, participant CV said, 'I think the subject matter is very interesting – it kind of touches back into my own school years' (CV/T 23). However, the overall tone in the discussion session was one of disappointment that the piece did not deliver a satisfying reading experience, and this was attributed significantly to the difficulty readers had in engaging with the story, as exemplified in a comment from participant RG: 'I couldn't connect with the content of the book…if I was intrigued by the content of the stories then I'd probably have made more of an effort to keep it going around and clicking in circles and so on' (W/D 30);

The questionnaire data in Figure 21 below (W/Q 3.3) help to highlight the key problem areas of the narrative itself:



There was also a perceived lack of structure, as noted by participant CV: 'I didn't get any sense of structure at all' (W/D 83). This hindered the reception of the narrative. Participant EC summed up feelings expressed by the whole group: 'The story must have a structure or it's not a story... it's just a morass of thoughts if it doesn't have a structure' (W/D 75).

A specific issue for participant KC was the sense that the story didn't end in the way she expected it should: 'I found it very unsatisfying because it didn't have an ending' (W/D 318). Participant RG felt that the author was actually intentionally disturbing the reader's anticipated experience of narrative form:

> Even if it's a difficult novel you get to see the structure that the author wanted you to see. There you can't do that, you don't know, there is no structure that the author wanted, the author didn't want you to have a structure (W/D 120).

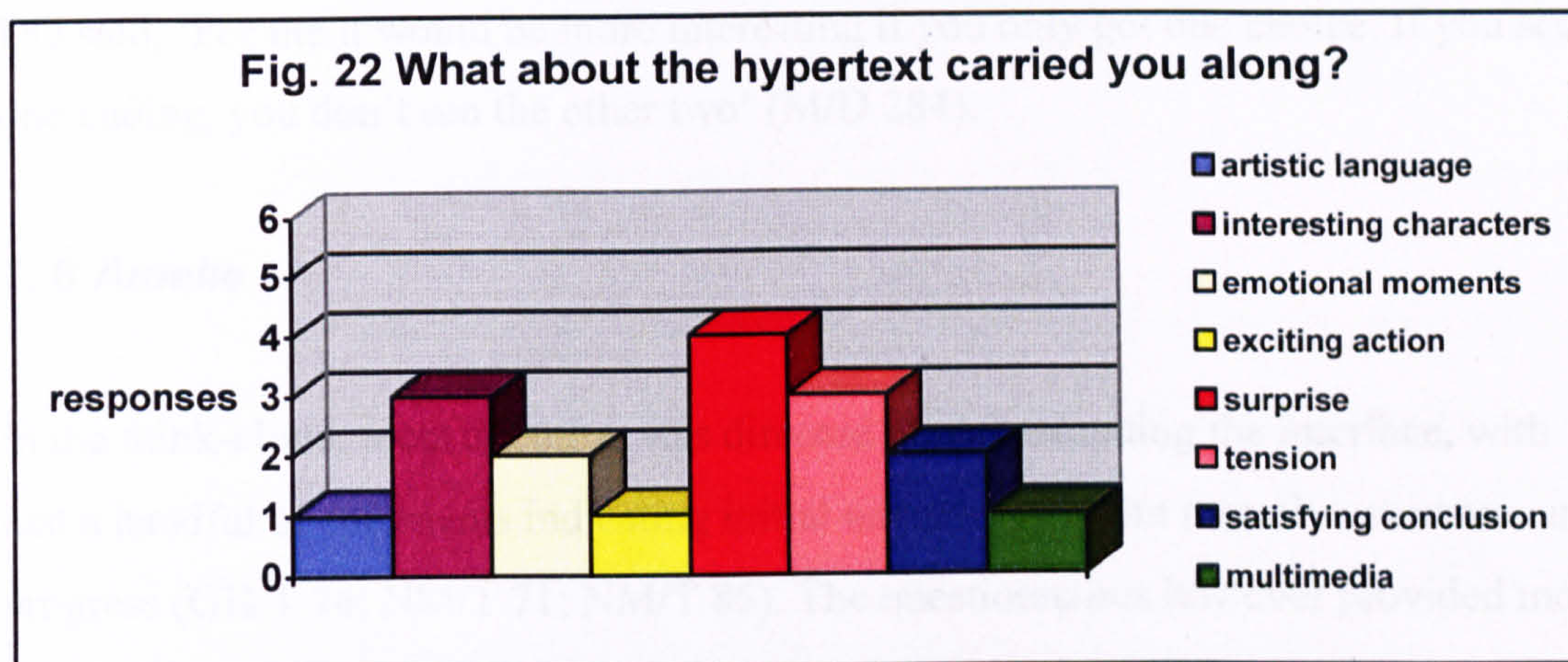
7.5 *The Virtual Disappearance Of Miriam*

During the think-aloud sessions, the readers in this group did not have much to say about their appreciation of the narrative. They accepted that the initial contact with the piece was one of familiarisation with the interface, and that the story would come later as they spent more time with it. This was exemplified in participant LS's comment: 'The first thing is, I'm not interested in reading the text. I'm more interested in exploring and I haven't got into the story' (LS/T 17). Along similar lines, participant GD noted that the think-aloud task was restricting his actual reading: 'If I had it longer I'd read a lot more, and try and follow the story' (GD/T 19). He realised that reading everything on the page would ultimately be necessary 'because that's the only way I guess I'd be able to follow the story' (GD/T 24).

Participant PD commented that *Miriam's* pop-up text-box feature was 'a new way of giving information about characters' (PD/T 27). She also made the point that the 'conventional thing about stories is that you don't really include anything that is not really needed for the story, so I would be thinking about why is this here?' (PD/T 27).

The questionnaires gave a more rounded view of the readers' reactions to the story itself. The members of this group were all prepared to be challenged by a story (M/Q 1.6), though two of this six said they would not go along with a difficult plot to

find out how the story ends. Nevertheless, when it came to reading *Miriam*, five of the six said that they enjoyed the story structure (M/Q3.7): not surprisingly, participant HO, who was one of the readers not prepared to go along with a difficult plot, was the one who also did 'not really' enjoy this story's structure. Overall though, the narrative was received positively by this group, as Figure 22 (M/Q 3.2) suggests.



All six respondents said that they could summarise the story to a friend (M/Q 3.11), indicating that a coherent narrative had been received and digested. Five respondents said that the ending was satisfying (M/Q 3.12).

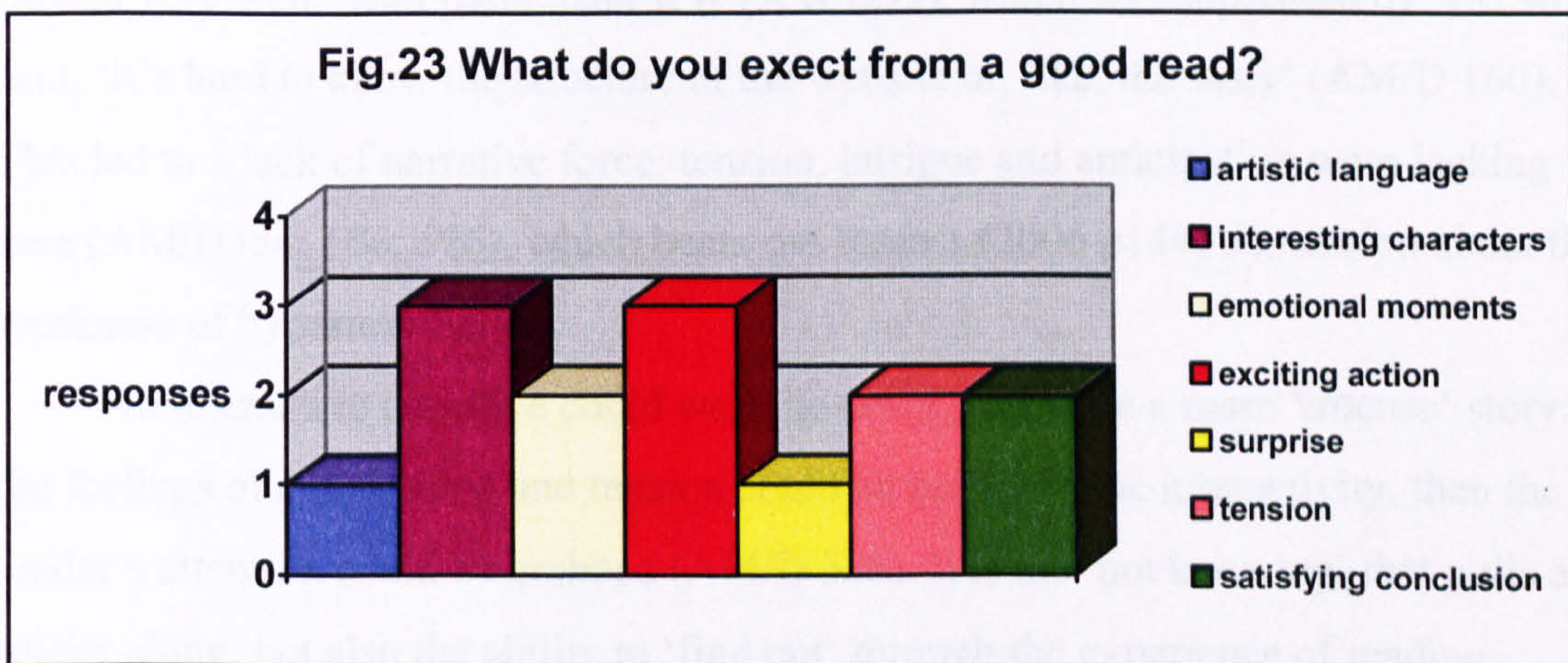
There were some problems: three respondents said that the characters were uninteresting, and three also said that the plot was confusing (M/Q 3.3). Interestingly, participant HO said he would not read another hypertext novel (M/Q 3.14), and he also answered negatively about the characters and the plot: in his case, the story failed to engage.

In the discussion, perhaps to some extent contradicting M/Q 3.3 above, it was apparent that the whole group enjoyed the story of Luther and his missing girlfriend, Miriam. Typical comments were: 'I thought it was a really interesting way of telling a story' (M/D 54) and, 'I think it's a situation you imagine yourself getting into, waking up and finding your partner isn't there. It could happen to you' (M/D 212). To probe the aesthetic, imaginative reaction to the story a bit further, the researcher asked, 'With a book or a film you get emotionally involved in the characters. Could you get that level of involvement with *Miriam*?' The whole group answered 'yes' (M/D 203). Participant GD added, 'I kept on also looking for Miriam, and that is what kept me going through' (M/D 218)

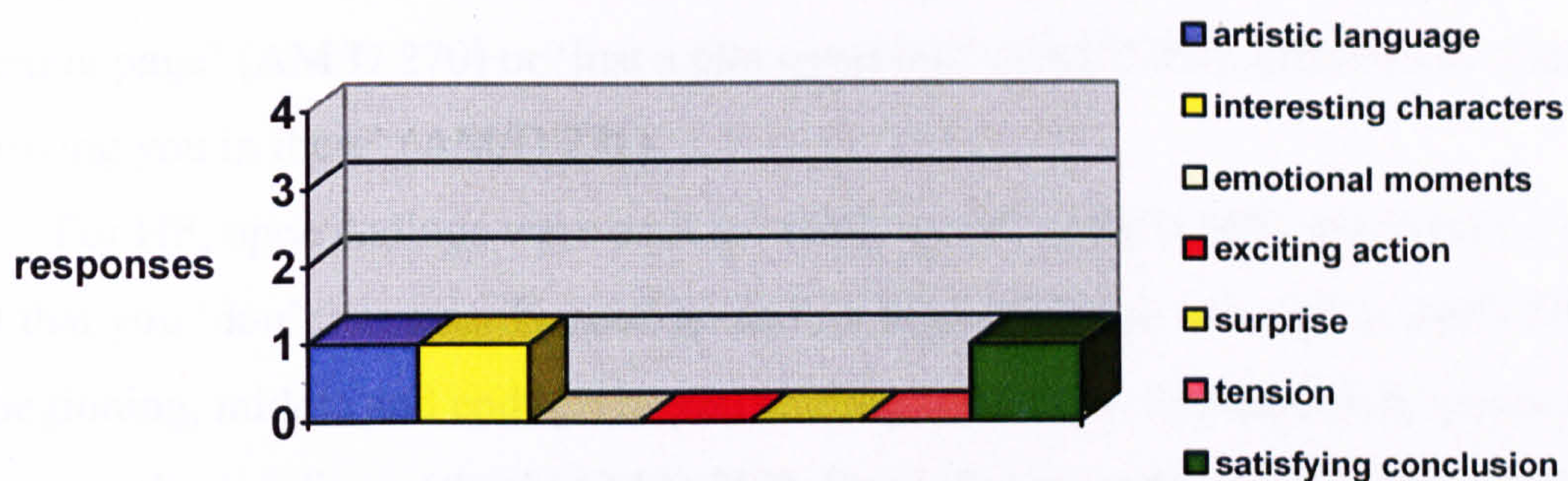
The story structure seemed to succeed in engaging this audience: 'I think the plot was clear from the beginning. There was this guy and his girl has disappeared' (M/D 227). The ending raised comment: it is significant to note that this story did provide a form of ending that was able to be readily grasped, compared for instance to *These Waves Of Girls*, which did not. Participant LS said, 'I thought how it ended was quite interesting – it offered three different endings' (M/D 278), whereas participant DO said, 'For me it would be more interesting if you only got one choice. If you see one ending, you don't see the other two' (M/D 284).

7. 6 *Amelie*

In the think-aloud, most attention was directed at understanding the interface, with just a handful of comments indicating initial uncertainty about narrative structure and progress (GH/T 74; NM/T 71; NM/T 85). The questionnaires however provided more substantial evidence of this group's experience. It is useful to compare the group's 'what is a good read' expectations (AM/Q 1.3) with their response to *Amelie* (AM/Q3.2):



We easily see from Figure 24 below that *Amelie* largely did not fulfil expectations of a satisfying reading experience:



Despite the enthusiasm seen in the think-aloud for the form of the piece, there was very little (only three categories indicated, only one positive response per category) that satisfied these readers in terms of narrative pleasure. Specific problems were the perceived lack of an ending (AM/Q 3.12), and a confusing plot (AM/Q 3.3). Only two of this group said they would read another hypertext (AM/Q3.14).

In the discussion session, this group, being sixth-form English Literature students, had much to say about narrative structure and satisfaction. There were several comments indicating that narrative development was obscure: 'I didn't think it flowed very well,' said participant KW (AM/D39), which was supported by NM who said, 'It's hard to know the structure of the website or, like, the story' (AM/D 160). This led to a lack of narrative force: tension, intrigue and anticipation were lacking here (AM/D354; 506; 526), which bears out Ryan's (2006 p144) contention about the weakness of hypertext fiction.

An interactive narrative could work however, if it were a more 'intense' story: if the feelings of anticipation and tension could be built into the interactivity, then the reader's attention could be grabbed (AM/D 526). It is the 'not knowing' that pulls a reader along, but also the ability to 'find out' through the experience of reading (AM/D 466-472). One suggestion was that a 'scary' story could make effective use of links and interactive paths, throwing up unexpected narrative developments. But the story of *Amelie* was considered a 'bit soft for this type of thing' (AM/D 535).

'Traditional' narrative structure was felt to be lacking, and the need for a clear beginning, middle and end was emphasised several times during the discussion, summed up by participant KW: 'I didn't know where the story started and where it ended, or whether it was in order' (AM/D 129). The ability of these readers to

apprehend and enjoy the story was closely bound to the markers and signposts that the piece provided: all four readers wanted a clear beginning (AM/D 254), 'maybe just an opening page' (AM/D 270) or 'just a plot overview' (AM/D263), rather than 'just throwing you in there' (AM/D 271).

For HF, open endings were seen as 'really good' (AM/D 285), but whilst it was felt that you 'don't necessarily need an end', a beginning was 'crucial' (AM/D 285). A beginning, middle and end 'gives you reading substance', because then 'you know where you're heading with it' (AM/D 252). Even if open endings are acceptable, for participant KW the lack of a clear end *place* was ultimately frustrating (AM/D 513). Without such a 'holding' structure it was hard to grasp the story or to know how events have developed (AM/D 264). Significantly, particularly when we remember that this was a very 'informed' group in Fish's terms, both in matters of narrative and computer use, NM summed up the discussion by saying:

> I don't think for a first-timer using that kind of interactive story, and not knowing the storyline that you're reading, it would be just so confusing and open that you wouldn't understand it at all (AM/D 582).

Another aspect mentioned as problematic was the presentation of character, raised by participant NM: 'to be able to understand a story I have to be able to understand the characters, sort of relate to them, so in that sense I didn't get much out of it' (AM/D 548), a point which KH and HF agreed with. KF said that it was a problem for her that she did not get to know the characters: 'I didn't know who any of the characters were' (AM/D 554). This issue seemed to come about because of the multi-linear narrative structure and reading experience engendered by interactivity and the overall design of the piece: 'like, when you clicked on something and there was a character, you weren't aware of, and you just wondered who they were to the other characters (AM/D 291).

Finally, the issue, unique to this piece, of adaptation was briefly discussed. It had been felt by the researcher and the class English teacher that *Amelie* would be enjoyable for this group as they would know the story from the original film, and GH agreed that this was the case for her: 'because I knew the story of Amelie already, I kind of knew what to expect' (AM/D 139), but that was not necessarily a good thing because one might then compare this version to the known original (AM/D 145).

Overall, the consensus was that knowing the story already would help in engaging with the hypertext, but that nonetheless, this was not a dramatic or engaging enough story to fully succeed as a hypertext (AM/D534; 544).

7.7 *Of Day, Of Night*

The think-aloud sessions focused more on readers' surprise at the idiosyncratic, highly multimedia-based, interface, rather than any deep involvement with the story. Reactions in regard to any emerging storyline were very mixed, and do not provide any clear discursive threads. It was noted that the story began in a very different way from conventional fiction (JG/T 27), and that the opening was intriguing (BW/T 38); but other comments were less positive, saying that the opening screens conveyed very little (MP/T 7), or that it was tricky to find a beginning (RC/T 22).

The questionnaires therefore provide the earliest overview of this group's feelings about their experience of the piece. Five of the six participants said they enjoyed a reading challenge (O/Q 1.6), all six said they would stick with a difficult plot in order to see how it pans out (O/Q 1.7), and four of the six said they did not mind an open-ended structure (O/Q 1.9). This suggests that the readers were the 'right' audience for such an innovative piece. However, the questionnaires also returned that half of the group did not enjoy the structure (O/Q 3.7), none of the group could summarise the story (O/Q 3.11), and only one member was satisfied with the ending (O/Q 3.12).

Thus the discussion focused to a large extent on issues around the narrative and the satisfaction it did or did not provide. The group was split: two of the participants found elements in the piece to be admired and which they enjoyed, while the remaining four were more critical of its shortcomings in comparison to printed fiction.

Criticisms of the narrative were that it was not very engaging (O1/D 234) that it was frustrating (O1/D 234, and 398), and that the story did not develop sufficiently to involve readers fully (O2/D 69, and O1/D 318-321). MP didn't find a story, because she 'got fed up and stopped' (O2/D 121). 'It could have been richer,' commented JL (O1/D 323).

Some readers felt that the non-linear structure and volatile form were unsatisfactory, for example BW, who said, 'I had a great feeling of, I wanted to read it in order, and of course it's not like that really.... I was always looking for an order'

(O1/D 68). JL, one who did like the piece, said, 'I felt anxious' (O1/D 71). BW felt that she might be 'missing something' (O1/D 73), a fear which led JL and JG to comment that they were 'determined' to find the whole story O1/D 142-146), clearly an attitude a reader of print fiction does not need to consciously adopt. This need to consciously 'log' what has been read and what might have been missed is a form of the response demand conceptualised by Nell (1988), and therefore adds to the cognitive load for the reader (Conklin 1987). The net result of this extra effort might well be to tip the reward-effort balance away from the relaxed, flowing ludic reading that Nell and Csikszentmihalyi describe and which readers across this study typically want. We saw in chapter 6 that readers in this specific group identified for themselves that the reward-effort ratio balance was wrong: the data here helps to explain why that was the case.

A perceptive comment relating to the narrative structure was made by JG (O1/D 415), which was that the 'Day' section and the 'Night' section were not of equal or even near-equal length (though length has to be defined here in terms of video and animation time as well as amount of text). This created for her dissatisfaction:

> I thought it was going to build up to something, I thought "Night" was going to be the most exciting bit, I thought there was going to be intrigue, a sort of flow-through and there wasn't a flow-through' (O1/D 421).

Of Day, Of Night has no distinct 'endplace' in the sense of a last page or final screen from which no more material can be accessed, but it does come to a narrative conclusion in the dream sequences of the 'Night' section. However, readers here nonetheless felt that an ending was lacking: BW asked, 'Did it have an ending, really?' (O1/D165), and RC said, 'You didn't quite know when it was going to end, and that was what I found a bit frustrating. I like to know' (O1/D 236). JL felt that the piece had no ending (O1/D 270). There was an overall interest and positive response to the concept and form of the piece (O1/D 190), but narrative should be the central 'spine' (O3/D 200).

There was some debate over whether this *Of Day, Of Night* could even be called a story. It was 'like' a story (O1/D 429), more of a short story than a novel (O1/D 433). Plot was not of a familiar kind (O1/D 442), which was seen as something 'linked in a line' (O1/D 446). But this not necessarily a negative point, simply an

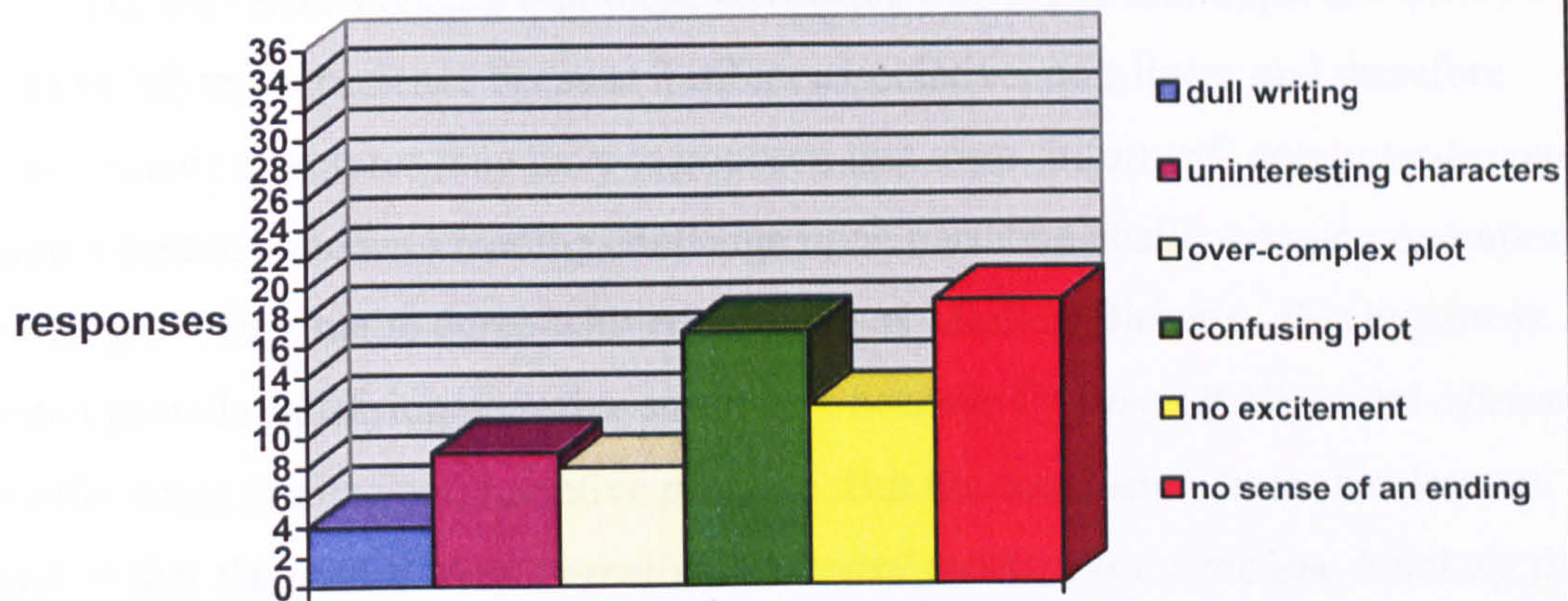
acknowledgement of newness, and JL was able to say that there is a plot in this piece, 'just not as we know it!' (O1/D 452). JL noted that 'there is cause and effect' (O1/D 460), and JG commented that she was intrigued by the introduction section, and was 'stimulated to go on' (O1/D 287), suggesting that the author is using plotting elements to draw the reader in. JG found parts of the piece 'quite exciting' (O1/D 186) and she also enjoyed the way author Megan Heyward allowed her to 'reflect' (O1/D 331), for example on the various objects which the reader/user can find and read about.

Overall, as a narrative, this group could be characterised as having a cautious and reserved interest in the piece, with clear, well articulated criticisms. Importantly however, in a consideration of the future of hypertext fiction, there were some strongly positive views, summed up best by JL, who said, 'I thought it was very beautiful actually and quite interesting, but I didn't think it was whole story' (O1/D 313).

7.8 Discussion and Summary

- *The effect of volatile narrative structures*

Brooks' (1984) and others' theories of the essential human need for narrative order, meaning and completion have been clearly demonstrated in readers' reactions to the hypertexts examined. Although almost every reader involved expressed an interest in a reading challenge, and certainly all had knowledge of narrative forms, which made them 'informed' in Fishian terms, the strong overall response was that the hypertexts sampled largely confused and frustrated in terms of delivering a coherent and satisfying narrative. Figure 25 (MAS/Q 3.3) below illustrates the response from all 36 participants on key problem areas:



We see that difficulties with plot and lack of an ending are the most mentioned problems: 17 of the 36 (47%) cited 'confusing plot', and 19 of the 36 (58%) cited 'no sense of an ending' as a problem. That data is not totally conclusive, because clearly not everyone found these areas a problem: but along with other related findings, it is fair to say that the hypertext structures studied here cause significant confusion and lack of satisfaction.

Hypertext enthusiasts often cite the idea, deriving from Vannevar Bush (1945) that human thinking is associative; *afternoon, These Waves of Girls*, and *Amelie* offered varying degrees of associative reader-oriented structuring via links on words or images. They were all largely seen as narrative failures. *LoveOne* and *253* offered limited choice for readers in terms of 'word association', and were again seen as narrative disappointments, although *253* did receive some positive feedback because it was possible to follow a thread of story based on character associations. *Of Day, Of Night* operates in such a way that associative sequences can quite easily be created by readers as they follow visual links and choose objects to find out about. Nevertheless, the reading group found such an approach to narrative to be largely disappointing. Of the seven hypertexts studied only *The Virtual Disappearance of Miriam* met with near-unanimous approval from its study group: it offers little choice in the realm of structure-by-association: in other words, its narrative structure is highly pre-determined by the author. Its interactivity and multimedia elements make it very

different from a narrative in print, but its structure might almost be considered conventional.

The data here suggests that those advocates who argue that hypertext offers a more satisfying experience because it offers associative, non-linear and therefore more realistic structures may have to concede that even 'informed' computer-literate readers cannot cope with reading challenge upon narrative challenge upon operational challenge. This is not to agree with critics such as Miall or Birkerts, that hypertext cannot provide satisfying narrative structures, because *Of Day, Of Night* and *Miriam* do offer some reading and narrative pleasure. But the conclusion from this data set must be that *the lack of clear narrative structural markers is a problem, blocking full enjoyment of the reading experience.*

The evidence from this study is that readers would give time and attention to the new medium and the new reading activity, if the narrative were progressive, dynamic, and coherent: *The Virtual Disappearance of Miriam*, and to a lesser extent *253* and *Of Day, Of Night* received some positive response in this area, because there was a story to be found. The means of accessing the story was different from a print fiction, to be sure, but something of an Aristotelian structure was there to be found, and this seemed to please readers.

In particular, *The Virtual Disappearance Of Miriam*, and to some extent *Of Day, Of Night* were the two pieces studied here that received most praise from readers in terms of narrative structure. The reasons for this are partly to do with interface design and will be discussed in Chapters 8 and 9, but here it is significant to say that these two stories did present a fairly simple narrative structure that allowed a comparatively straightforward piecing together of the underlying story, and thus enabled some reading pleasure and satisfaction to be had.

Kendall and Réty's (2000) argument that hypertext readers need as much narrative growth as any other kind of reader or viewer is supported strongly by the data here, countering the views of Bolter (2001), Douglas (1994) and Landow (1997), among others, that there is pleasure to be derived from the almost limitless indeterminacy and much-increased reader 'effort' of hypertext structures.

This researcher has previously argued (Pope 2006) that hypertext authors may well need to abandon or restrain their radical experiments with narrative structure in favour of more Aristotelian forms, if they are to ease readers into a zone of comfort with hypertext fiction. This is overwhelmingly what the readers in this study say they

want to find in their fictions, and reflects some of the conclusions of Gee (2001) from her smaller scale study of reader responses to Bill Bly's *We Descend* (see chapter 4.3). This, of course, is not to argue that Modernist or other non-linear narrative forms have no place in literature or hypertext: it is significant to note that non-linear structures in film have become commonplace and successful. These films do break with chronological and cause-and-effect sequencing, but importantly they do mostly use macro structures with a meaningful 'beginning, middle and end'. *At this stage in hypertext's development, and given the preconceptions, abilities and preferences of the potential audience, a beginning, middle and end would seem to be much more likely to engender reader involvement and eventual aesthetic pleasure.*

Iser (1976) talks about the consistency building process in which readers engage when reading fiction, and this model offers a useful explanation of what appears to be going on for readers of these hypertexts. As the readers read the various chunks of text, viewed animations or videos, heard sound effects or background music tracks, or followed links on words and graphic hotspots, they were obliged to interpret the gaps and blanks (to use Iser's terminology). Gaps, remember, are the differences between what the author knows and intends to say, and what the reader knows and understands; blanks are the indeterminate connections between sentences, sections, chapters.

These areas of 'openness' are present in hypertext just as they are in print or on film, but in hypertext gaps and blanks may be of many different kinds, and harder for the reader to fill. An example of a gap in *Miriam* is the bed graphic in an early scene: this was not seen as a bed by several readers, which then set off a re-interpretation of the graphic, which would in turn affect the 'reading' of the piece. A blank in *Of Day, Of Night* was the implied but never stated connection between the different 'places' on the main map graphic, which readers could visit in any order they chose: the conceptual and narrative connection between these places would only 'appear' within the reader's imaginative mind, as he or she built a narrative consistency that would help him or her to gain meaning from the experience. However, these blanks and gaps could eventually be filled because the underlying story would eventually 'emerge' via the consistency-building activity of the reader's imaginative mind.

It would appear from the data, that the readers of *afternoon*, *These Waves Of Girls*, *LOveOne* and to some extent, *Amelie*, could not fill the gaps and blanks with any interpretation of their own which could construct a meaningful story in their

minds. The narrative they received as result of clicking on images or following links did not, even after lengthy sessions with the piece, reveal the story. *Sjuzet* was present, *fabula* was obscured or maybe non-existent.

Miriam and *Of Day, Of Night* did reveal a story. No matter which links readers followed, or in which order they read or viewed sections of 'text', the story did finally emerge, which was then a source of some satisfaction. In the case of *Miriam*, the ending was clear and conclusive (although there were three to choose from), while in the case of *Of Day, Of Night*, the 'ending' was there to be found, but seemed to offer less resolution and thus less release-from-tension pleasure (Nell 1988). Nonetheless, we see that there was a beauty in *Of Day, Of Night* for some readers, and that beauty came partly from the way the structure generated reflection and imaginative engagement in the readers.

Miriam does have 'side roads' and digressions, and *Of Day, Of Night* offers several routes through its structure, but both do deliver a narrative, where by 'narrative' we mean a sequence of events and ideas connected by a cause and effect relationship. Life may well be random, and human thinking may well be associative, as some critics have argued, but narrative is an ordered representation of life and particular form of thinking (Brooks 1984; James 1934; Richards 1924). The readers in this study prefer the version of narrative structure nearer to that which Aristotle proposed. Some hypertexts throw away every narrative structuring device known to literary theory, and it may well be that *a complete departure from such ordering parameters as beginning, middle and end may always prevent reading pleasure.*

- *Defamiliarisation, challenge, and familiarity*

Iser (1976) and much more recently Miall (2000) have talked about the importance in literary fiction of the defamiliarisation/familiarisation process. We saw in Chapter 2.1 that these critics have slightly different ways of explaining this process, but it is clear that an interaction between defamiliarisation and familiarisation takes place when fiction is experienced, and this is seen clearly via the data from this study. Readers enjoy the surprise that fiction can bring of new worlds, new perceptions, new conceptualisings of the society and culture: we saw this in readers' responses to *253*, *Miriam* and *Of Day, Of Night*. It is equally clear that readers enjoy the process of moving from uncertainty to understanding. The data shows furthermore that hypertext

readers will attempt quite difficult 'tasks', for example, sticking with a difficult plot, learning a new interface, or finding out how to navigate a site, in order to gain the pleasure of becoming engrossed in the defamiliarising world of the narrative. 33 of the 36 participants said they like to be challenged by the story (MAS/Q 1.6).

The problem is that every reader in the study wanted by the end of their reading to feel that the unfamiliar had been made familiar. This need applied to all aspects of narrative that were specifically examined: plot, closure, character, aesthetic involvement, narrative satisfaction. Life should be represented anew, in an unsettling, unfamiliar way, by fiction, but ultimately the narrative should provide some outcome which makes sense of the unfamiliar. Readers are well able to cope with defamiliarisation, and they will quickly and skilfully re-interpret newness; but if the newness does not build itself into some conceptual model that makes sense of itself in terms of the narrative structure (and it may be that we are always returning to Aristotle here), then little or no reading pleasure ensues. This explains why readers of *Of Day, Of Night* found some pleasure in their reading, but commented that the pleasure could have been greater if the significance of the main character's exploration of her memories had amounted to something more dramatic, more tragic or sad, or maybe even funny. The feeling was that all the exploration and interactivity was interesting, up to a point, but what the ludic reader really wants is a narrative thread that shows why the exploration is important, why the character is struggling with her lack of dreams, and how and why the outcome of the struggle is worth the reading journey.

Of the hypertexts studied, only two were able to balance the challenge of conceptual and functional newness with the pleasure of narrative significance. *Afternoon, These Waves of Girls, LOveOne* and *Amelie* created an intense defamiliarisation effect, but even with determined effort, the majority of readers in this study could not gain a sense of familiarity with the fictional world being presented by the author. If Iser's and Miall's theories are used to help explain what is going on for readers, we can see that the almost infinite (in any practical terms that readers could use) narrative structures of these three pieces meant that the only experience available was one of unsettling, incoherent defamiliarisation.

For hypertext fiction generally, we can say that Miall (1998, 1999) and Miall and Dobson (2001) are to some extent correct, that fractured structures along with the demands of interactivity do impede imaginative enjoyment, but that this need not be

the case. *Hypertext can offer up enjoyable narratives alongside meaningful and entertaining interactivity, if it encourages a purposeful process of defamiliarisation to familiarity: i.e., a conceptual and operational challenge leading to a matching narrative reward.*

- *Character*

Readers in this study were in universal agreement that their ability to 'know' and care about fictional characters is another key to reading pleasure. 32 of the 36 participants said that they look for interesting characters in their fiction reading (MAS/Q 1.3). This is an area that is not discussed in any detail at all in the reviewed literature around hypertext narrative; the debate has focused largely on narrative structure and issues around interactivity. However, the readers in this study commented on character in several contexts, and we will see in chapters 8 and 9 that the development of character is also interrelated with the deployment of interactivity and the design of the interface.

Obviously, some readers do prefer plot-driven stories and some prefer character based stories. However, a strong theme emerging from the data is that grasp of characters is essential, whether or not plot-driven narratives are preferred, and whether those characters are highly developed or not. More significantly still, the perceived success of character and the success of plot go hand-in-hand and cannot be separated in any meaningful way. If characters are poorly grasped, the narrative will not please: if the narrative is poorly apprehended, characters will seem dull and lifeless, without point or purpose. The best example of this principle is in *253*, about which the readers said that they enjoyed Ryman's use of character profiles to drive the reading and navigation, but that the lack of a strong overall narrative led to a lack of involvement and reading absorption, despite the potentially interesting characters. An interdependence that is perhaps taken completely for granted in print fiction might be more easily neglected or frustrated in hypertext, partly because of indeterminate structures and partly because of navigation and interface issues.

The data provide evidence that *the development of character cannot be separated from the coherent development of the plot, and for readers to enjoy one the other has to function according to their narrative expectations*, as argued in the section on volatile structure above.

- *Closure*

Closure in narrative has been argued to literally be the be-all and end-all for most readers (Brooks 1984), though as we have seen, that essentially Aristotelian/Freudian concept is itself challenged by some critics (Douglas 1994, 2090) and writers (Joyce 1987, Jackson 1996). The readers in this study have shown that they are able to enjoy endings of differing degrees of conclusiveness, but they do all want the feeling of completion (having read or seen all that the artist has created), and they do all want a sense of closure (that the narrative has come to its designed end, whether that be happy, sad, clear, mystifying or open ended).

Along with those needs comes the need for a spatial endplace in the book/site. *253* does indeed offer such a clear endplace, but it was felt that because the narrative did not drive the reader toward that place, it was aesthetically disappointing, even when a reader went there specifically to 'see how the story turned out'.

In the case of *Miriam*, the endplace was successful because although a reader *might* have gone there first (just as one could with a printed book) the narrative was strong enough that readers in this study did not want to or feel that they had to: they wanted to get there via the unfolding story. And that made the endplace also an ending, and provided a pleasing narrative closure.

Of Day, Of Night did offer a narrative ending, even though it was considered a weak ending. It did not display a clear endplace, but this was not seen a problem, as long as the ending, when it was found, had narrative force.

The perceived problem with *afternoon* is that there was no narrative ending nor a spatial endplace, and the readers all felt in some way let down by the piece, and they did not, as Douglas (1994) suggest she does, find a kind of closure in having read and re-read everything until all the loose ends made sense. Douglas' theory is not able to be supported by the data in this study, and this researcher at least is prepared to say that the kind of pleasure in closure described by Douglas is a highly specialised, academic type that virtually no ludic reader is likely to strive for. Incidentally, re-reading itself is something that the readers in this study mostly disliked: 25 said that re-reading was either annoying or frustrating (MAS/Q 3.10); only 12 of the 36 said it was an interesting activity.

In the case of *LoveOne* and *These Waves Of Girls* there was total dissatisfaction with endings because nothing in the experience felt like a narrative. *Amelie* also failed to provide a clear enough ending for readers to feel it was a successful piece. Without endings and closure, these narratives felt incomplete, and therefore not really narratives, and certainly not very satisfying.

The data here suggest strongly that closure really does come with narrative significance, in a way that Brooks' model describes: *readers do read for the plot, whether the plot is simple, complicated, or inconclusive; furthermore, they are reading with plot closure in mind. Narrative closure is tightly bound to reading satisfaction.*

Chapter Eight

Navigation

Navigation as an influential feature of the hypertext reading experience is not much discussed in the literature around hypertext fiction, as we noted in Chapter 4, and this chapter therefore explores a largely unmapped area. The navigation system, as well offering the reader movement around the reading space, is a part of and facilitated through interface design, and so this chapter will inevitably touch upon interface design features in the course of its discussion. Chapter 9, however, specifically looks at design aspects other than navigation, such as interactivity features, graphic design, and multimedia elements.

The navigation 'rules' of Jakob Nielsen (1990) have been referred to in the summary, to provide a framework of navigation features considered to be important in hyper-space; but, as we will see, hypertext fiction is a special kind of hyper-space where navigation is concerned, and the data reveals relationships, problems and potential solutions that Nielsen could not explain, since his interest is not primarily in fictional narrative texts. Nielsen's ideas and those of others in this field, have thus been modified and extended where appropriate.

8.1 *afternoon, a story*

- *Movement*

Afternoon, a story uses Eastgate Systems' Storyspace interface for its delivery to readers, and we have already seen (Chapter 4) that Storyspace has idiosyncratic, navigation features, unfamiliar to most users of the internet. It is not surprising, therefore, that in the think-aloud phase every reader expressed uncertainty and anxiety about how to navigate. What is more revealing is the clear association made by participants between navigation facilities and their sense of orientation in the textual space, and consequently their experience of the narrative enjoyment which they were trying to find.

Afternoon was released in its current Storyspace-driven form in 1987, and it may be that it is the victim of software progress, insofar as its interface is outmoded, as KH commented: 'Are they still publishing this? In that case they could improve the interface' (KH/T 67). Nonetheless, software developments notwithstanding, the participants in this group identified 'essential' navigational facilities that *afternoon* seemed ill-equipped to deliver.

KH noted that she was not sure how pages were sequenced (KH/T 44), and she was not clear how the navigation 'back arrow' was functioning:

> I'm not sure now whether it's taken me back through the story space or the trail. I've got no way of knowing. At this point I don't mind, because I'm exploring. I might, when I come to sit down and read it, I might find that frustrating (KH/T54).

Participant SB was also unclear, and frustrated as a consequence: 'If I'm in an interesting part of the story, I don't want to have it interrupted by having to go back and... at least I want to be familiar with where I can go to find help' (SB/T 45). DA suggested, 'possibly a map or a timeline...Possibly a bit more at the beginning and then you make a more informed choice about where you're going' (DA/T 72).

Participant RS made a string of comments reflecting his uncertainty as to what navigation was available and where it would take him in terms of the story if he did manage to find active on-screen elements:

> ... I think I need directions, so I'm thinking "click y"... but that's not about the story, I suppose (RS/T 10);
> I'm not clear at all. Back, back, perhaps I can go back... (RS/T 32);
> I'm already, I can't click on that. I thought I'd be able to click on that. I do want to hear about it, I just don't know where to go...keep pressing Enter? (RS/T 36).

If we reflect on these comments in the light of the above chapter on narrative, we see that participants' difficulty in finding narrative threads can at least in part be attributed to the demands of interacting with the medium; and where the medium's behaviour is not easy to learn, reader-users quickly become intolerant of the activity and impatient with the narrative . HC felt that she would 'revert' to a sort of failsafe

navigation system of using the return key to move from page to page (HC/T 46), a 'last resort' behaviour which Walker (1999) identified in her reading of *afternoon*. SB stated strongly that poor navigation tools threaten the whole activity: 'If I hadn't worked it out for myself in a minute or so I'd probably have decided not to bother, or come back at it later' (SB/T38).

By the time of the discussion sessions, navigation and orientation issues had receded behind the predominant focus on story, as we have noted in chapters 6 and 7 above. The questionnaires indicated that the navigation system was felt to be easy to learn by half the group, difficult by the other half (A/Q 2.3) and yet in the discussion the clear consensus was that the navigation system was unsuccessful at best, 'awful' (RS/D 163) at worst. SB felt there were 'too many options as to where I navigated... I would have had to build up a strategy as to how to explore it, and I hadn't anticipated needing to do that' (A2/D 206). Referring to her knowledge of the older Hypercard system, KH commented that,

> Hypercard had lots of fantastic backtracking and trails. Even in 1987 he could have done that. I knew that, so you know the writer has deliberately chosen to make it that confusing, as part of the "new reading" experience... But it just feels annoying (A2/D 233).

- *Orientation*

For some of this group of readers, navigational uncertainty combined with structural challenge led to disorientation, though in the think-aloud phase this was not highly pronounced. When asked, 'How does it make you feel to be confronted with a next page that might or might not be *the* next page?', DL said, 'Disoriented to be honest, because I'm used to the solid book that has "you start here" and you work down' (DL/T 49). RS quite quickly lost his 'place', because the navigation system was confusing to him: 'Don't know where to go now...I'm lost' (RS/T 27). For HC, a wish to hold on to the story, added to navigational hesitance, actually led to a fear of exploring, the opposite of what one would expect hypertext to encourage: 'For me, I think I need to read the page. If I go off somewhere else, I might not get back to where I need to be' (HC/T 18).

By the time the group had had their free-reading time, orientation had been a problem for everyone: all six readers reported that they did not know where they were in the story or the 'site' during their reading (A/Q 2.7, 2.8). In the discussions, orientation was closely associated with the effect of hypertext on the reading process. Participant RS differentiated between information-seeking on-screen and reading for narrative: 'My normal ramblings online, I would very often take a break and then come back, and I won't even think "where did I start this?". It wouldn't matter. But here it matters' (RS/D 67). For DL, following hyperlinks led to loss of narrative coherence:

> DL: You don't know where you are. Often it was a single line or a statement that meant nothing.
> Researcher: In terms of what you'd just read?
> DL: Yeah, there was no link to it. And you're not sure who was speaking. (A1/D 117).

DA suggested that, opposing in this context what is commonly seen as a Web standard, 'bigger chunks' of text to read would 'give you more orientation' (A2/D 365) because that would give the reader more sense of context, and as SB pointed out, allow one to read ahead more effectively (A2/D 374).

8.2 *LOveOne*

- *Movement*

At first glance, the navigation system of *LOveOne* would appear simple and quite streamlined, with few potentially demanding hotspots, menus, navigation bars etc. to overload the unfamiliar or reluctant reader-user. However, in practice, the participant group in this study found navigation difficult to learn and implement. Whilst comments in the think-aloud did not suggest any lack of basic understanding of how moving around a generic website might happen, there was notable initial uncertainty with this piece.

The author, Judy Molloy, offers 'frames' or 'no-frames' (accessed via hyper-linked words at the bottom of the opening screen), as a reading layout and

navigational option, and participant CL was not sure what benefit frames would give the reader in this context (CL/T 71). MH saw the hyper-link, but did not know what it was for: 'This is where I'm a complete beginner – what do they mean by "frames" and "no-frames"?' (MH/T 21). The remaining members of the group needed to be actively shown how to utilise frames, because they did not 'spot' the link on the first page as something they needed to follow. Participant JP spent some time attempting to understand this navigation function, but found it confusing, at one point asking the researcher, 'Where's the story? In the "frames" or the "no-frames"?' (JP/T 113). It is interesting to note that since this participant group read the piece, Molloy has actually revised the *LOveOne* site, so that the links now read 'lexias' or 'framed lexias', (Molloy 1994, updated 2006) still, one might suppose, an unfamiliar terminology to all but the initiated hypertext writers and academics.

In terms of simply finding the 'next' page to read, the navigation system of *LOveOne* was perceived to be unusual to use at best, obscure at worst. Whether or not the next section of text was seen to be following from the previous one in the sense of narrative development, readers found it hard to actually get to that next 'place' in the piece. JP keenly explored the navigation options, and appeared at this early encounter to enjoy the challenge of newness, but it was also clear that the navigation system was not intuitive for her. Typical of her responses were: 'So if I click on that...? Oh, I see. Does that carry on then, on the same story?' (JP/T 119), and 'I suppose actually you fiddle about, fiddle with it until you've really understand it, don't you? It seems unusual at this time...' (JP/T 150). MH, wanting some sense of a pre-designed sequence for reading, similarly pointed out that 'normally you'd have a "next", wouldn't you?' (MH/T 211). RF also wanted to know how to get to the 'next text' (RF/T 66) because, to him, it was not apparent.

The questionnaires help us to discern emerging core issues for this group, where navigation and orientation are concerned. Four of the six found the navigation system was not easy to learn (L/Q 2.3), four (the same four as L/Q 2.3) also said that it was not obvious where links were (L/Q 2.4). The two who said that links and navigation were easy to use were, perhaps significantly, the younger and more computer familiar in the group. But, outweighing individual differences in computer adeptness, questionnaire item L/Q 3.4 returned that all six readers found that linking made no narrative sense and failed to keep the story moving; five of the six also said that

following links disrupted reading, and the remaining one said that linking did not enhance reading, an overall negative reaction (L/Q 3.5).

Finally, and revealingly, four found navigation menus difficult to read and use (L/Q2.11) and two actually said that no menus were offered (L/Q2.1), which strongly suggests that even though choices *were* available, they were not seen as such.

The discussions only echoed this overall negative response to issues of navigation and orientation. The problem remained for these readers that the story was not sufficiently gripping for them to overcome the unfamiliarity of the navigation system. The central story did not come through, and that detracted from any interest in the new medium and form that the group might have felt initially: 'It didn't hold my attention enough to keep going with it very long, but that could have been different in different circumstances (L1/D 39).

Participants felt that too many conventions from reading and from print narrative were being challenged or ignored altogether: 'There was no way of actually turning the page' (L1/D 364) was typical of a range of comments that indicated this set of readers could not adapt to the new way of 'turning the page'. The result of not being able easily to progress the narrative via interface navigation was that reading *LOveOne* felt 'a bit like running into a brick wall' (L1/D 370).

Even within the current standards of web space navigation, *LOveOne* seemed to frustrate:

> when you changed the link... it went against all the old conventions, the colour changed against the old conventions... and it does remind me a lot of the early web pages where people didn't have any standards (KL/D 182-190).

- *Orientation*

At the think-aloud phase, this set of readers was not significantly concerned with the potential problem of disorientation, though individual comments indicated that some saw the need for better navigation aids: the contents list in the framed version of the piece was seen as useful in concept, but difficult to use in practice (CL/T 97, RF/T 133). KL suggested that a search engine, or some kind of indexing, would be immediately helpful to her (KL/T 87). KL also suggested that 'there should be a guide

that goes with it' (KL/T 30), not spotting the instructions that Molloy provides at a page called 'notes' (http://www.eastgate.com/malloy/credits.html).

However, questionnaire item L/Q 2.7 indicated that all six readers did not know where they were in the book (the website), and all six said they did not know where they were in the story (L/Q 2.8).

The discussions confirmed that orientation within the space was not aided by the navigation tools offered, and KL noted, repeating her think-aloud observation, that a map or some kind of index would have helped her to know where she was. The contents list did not help: 'something popped up, but it wasn't easy to navigate, and because the story was so fragmented, you didn't know were you were from the start' (KL/D 217). Participant RF said of the contents list that, although it was helpful to have such a facility, using it was 'pretty boring' (L1/D 251).

8. 3 *253*

- *Movement*

Because *253* looks and behaves somewhat like a 'conventional' website, initial reactions to the piece were exemplified by JC's comment that it would be 'no problem' to find one's way around the site (JC/T 153). There was also considerable enthusiasm to explore. JV immediately tried links to see where they would take her: 'I thought, "Let's go in, not in any particular order"' (JV/T 19). Participant PC also clicked 'randomly' to see what would happen (PC/T 30). Readers were able to find ways to navigate quite quickly, and JC was able to verbally identify four ways of moving around (JC/T 93-104). JH felt that 'you know what you're doing. It sort of makes sense quite well' (JH/T 86).

The train carriage layout seemed to be quickly learnt, and enjoyed: JC, clicking on a passenger name in 'Car One', said, 'Click on a box... oh, it goes to different cars. The story links up, like a web. It's quite cool, actually' (JC/T 65). JH also 'quite liked' the idea of the carriage navigation system (JH/T 78). In terms of a simple movement around the hyper-space, *253* appeared user-friendly: questionnaire item 2.3 showed that all four readers found the navigation system easy to learn (253/Q 2.3). Three of the four felt they could move freely in any direction around the site (253/Q 2.5), and they all said menus were easy to use (253/Q 2.11).

There was only one significant criticism of the navigation system: the opening map graphic was not interactive, but in a further screen there is an interactive map, called the 'Journey Planner', and this inconsistency halted readers. After finding that the 'second' map was interactive, PC said that he was 'confused by it all' (PC/T 90) and asked the researcher, 'Do *you* think this is straightforward? (PC/T 90).

In the discussion sessions, navigation and orientation were not topics that these readers wanted to cover at length: issues around 'where am I?' were dealt with in discussions of narrative movement, as noted in Chapter 7 above. The navigation system was relatively straightforward for this group, but not very exciting: participant JH 'really liked' the Journey Planner instrument (253-2/D 336) but agreed with PC that the piece as a whole needed 'more visual aid' (253-2/D 322).

The navigation design could be more dynamic, suggesting that an opportunity had been missed to use more fully the potential of web browser: 'I think the more of a spacial context you give it, the more interesting it will be' (253-2/D 346); 'a 3D environment... is a nicer way to for me to be able to read a story on screen' (253-2/D 393); and 'it's not using interaction to its best, you know, capabilities' (253-2/D 492) were comments that captured this feeling.

- *Orientation*

JC commented that he'd be 'afraid of getting lost' and would return to the carriage graphic regularly as a way of maintaining orientation and avoiding missing parts of the story (JC/T 127). Implied in this comment is an awareness that the navigation system did not engender totally secure orientation for JC, either in the site or in the story.

However, orientation did not seem to be a major problem in this group overall, as the rather inconclusive questionnaire returns suggest. All four readers wanted a 'home' page, to aid orientation (253/Q 2.6), but the group was split 50/50 on whether they knew where they were in the site and the narrative at all times (253/Q 2.7, 2.8).

8.4 *These Waves Of Girls*

- *Movement*

It should be noted that *These Waves of Girls* offers menus on each screen, and in some screens sub-menus are placed in nested frames, i.e. there may be more than one menu set on offer. There was some confusion as to what exactly was available. Typical comments were: 'I've got eight things, titles, I suppose they would be paragraphs in a chapter (KC/T 28); 'It looks like a form with tick-boxes' (EC/T 10); 'I would expect the home page to have some kind of overview of contents' (RG/T 34); 'I don't know how the menus work' (EC/T 59).

On the other hand, some comments indicated an initial positive interest in the unfamiliar screen: 'I do like the idea of choice, that's one of the great potentials of hypertext' (CV/T 31); 'It's probably a good thing that the main menu is always in the background – it probably makes up for going back and forth' (RG/T 22).

Remembering that none of the participants had seen this hypertext or its idiosyncratic interface design before, the overall reaction to the offer of menu choices as a means of navigating through the narrative was cautious to negative, summed up in these two comments: 'There's a lot of learning' (EC/T 52), and 'I don't really know what to do with this' (KC/T 20).

The particular style and operation of the menus did not come up as an issue in the discussion. However, during the free-reading period, the participants did perceive a difficulty around menus and the way choice was offered: the questionnaire data tells us that every participant found the navigation system for this hypertext hard to learn (W/Q 2.3) and only half of the group found the menus themselves easy to use (W/Q 2.11).

Menu design and choice appear to be perceived as secondary to the narrative's aesthetic qualities, and the effect that hyper-linking has on the reception of the story.

- *Orientation*

All four participants volunteered uncertainties about their sense of place within the narrative. Specifically referring to the peculiarities of hypertext fiction, participant RG said, 'I don't mind interactivity or a disrupted narrative, as long as I've got a site map or clear view of where I am… I don't like being lost' (RG/T 13). Participant CV made a connection between the interface design and the story's unfolding, noting that she was spending more time trying to understand the abundance of images than she

was on reading: 'I am a little lost, but I think that's partly because I'm not reading the story. But, even within an interactive narrative there are some conventions that could be followed' (CV/T 52). There was, implied in both these comments, a recognition that navigation design and narrative satisfaction were inter-related.

In the discussion, this aspect came up largely as a focus for much frustration and ultimately disappointment in the story and its fractured structure, as implied in several of the comments quoted in chapters 6 and 7, regarding reading and narrative. The problem of disorientation was explained by participant RG, who said, 'I felt it was like a conspiracy there, to disorientate the reader' (W/D 180). Participant CV noted that 'the narrative lends itself, the piece lends itself to that kind of confusion. It's not the same as saying all interactive narratives make you feel that way, but *Waves Of Girls* did' (W/D 67). This particular hypertext also left participant KC feeling she did not know where she was – she expressed a dis-location in the narrative and the medium:

> ... you don't know how long the story's going to be... you didn't know how much time this book, this story was going to take me to get through. Some bits were shorter than others, and you couldn't really work out how far along you were (W/D 129).

A similar point was made by participant RG : 'I really like to know how much of 100% I've read, that's really important to me' (W/D 312).

There *was* the possibility of enjoyment in disorientation: 'I quite like the process of hunting, of gameplay, of puzzle-solving, not quite knowing where I am – it just has to be compulsive as a story' (participant CV, W/D 305). The problem for participant CV was that 'I think it has to be really, really compulsive in order to work, and in this case it wasn't' (W/D 145).

8. 5 *The Virtual Disappearance Of Miriam*

- *Movement*

Navigation did not emerge as an important issue for participants during the think-aloud. Participant LS said that the navigation design was 'quite clear – is following

some conventions I'm used to, like there is a next button on the right-hand side' (LS/T 27). Participant GD said that the use of conventional navigation aids was important to him because otherwise 'you wouldn't know what to do. As I read I'm looking for things to click on' (GD/T 18).

Participants were able to comment more fully on this aspect once they had had time to read the piece at their leisure. Thus the questionnaires offer an insight: all six participants found the navigation system easy to learn (M/Q 3.3), all six found menus easy to read and use (M/Q 3.11), five of the six said they could move in any direction as they wanted (M/Q 3.5), and no one in this group found the interface bothersome or irritating (M/Q 2.9). Overall, the response was very positive.

Reader contributions in the discussion show that overall this group were happy with *Miriam*'s navigation system. For example, it was felt that 'after you read chapter one you know how the whole design works' (M/D 244). Reservations were expressed about some interactive buttons that weren't necessary or that didn't seem to be active (M/D 14 and M/D 25), but these were minor points. Two participants suggested that a navigation guide might be useful for multimedia novices (M/D 248 and 257), but the consensus was that *Miriam* used conventions and navigation features that were easy enough to pick up, and therefore instructions were not needed for most readers/users. Participant PD's view was that 'if they use the internet, these are common buttons' (M/D 270).

- *Orientation*

At the think-aloud phase, orientation was not a significant problem for this group, although participant LS did comment at two points that she was lost, and that the interface needed clearer direction buttons: these were only momentary hitches however, because overall she noted that 'everything is clear' (LS/T 26). Loss of place within the story was only mentioned by participant PD, who said, 'When it comes to one thing leads to another, you don't know were the hell you are. It's like you're in a bit of a maze and you haven't got a line to go through' (PD/T 34). On the other hand, participant DO said, 'I think it's quite linear: next, next, next. I sometimes, if it's very non-linear you can get lost' (DO/T 13).

Five of the six said they knew where they were in the story and the site at all times (M/Q 3.7, 3.8). However, seeming to some extent to counter the responses

above, the questionnaire also showed that all six participants wanted a 'home' page (M/Q 2.6), and so this was followed up specifically in the discussion. Participant HO said he needed a 'home' button 'when I feel lost' (M/D 117), participant LS said she needed 'security' (M/D 119), and participant MT said that the very fact of having so much choice on the screen and in the narrative made a home button essential, because 'you sort of never know where you are' (M/D 128). Participant DO suggested that 'in a longer story I would like a home button' (M/D 150). Interestingly, on the other hand, all six members of this group did *not* want to see book-like signposting such as page numbers, and the reason seems to be, given the other responses they made around this aspect, that they all essentially enjoyed the amount of intrigue and exploration that the narrative generated.

8.6 *Amelie*

- *Movement*

During the think-aloud sessions, there were many comments around issues of navigation: the participants all noted interest and enthusiasm for the piece and were immediately enthusiastic to discover 'how it worked' (GH/T 59; HF/T 44; KW/T 105).

There was some initial confusion: GH commented that compared to the software she had used before, *Amelie* was 'quite confusing' (GH/T 24). Although she did gain confidence with the navigation system after ten minutes, she pointed out that 'you'd have to know what some of the symbols meant' (GH/T 59) before you could move around the story space freely. NM similarly commented that she would like clearer instructions on what to do when first approaching the piece (NM/T 153). Participants were initially unsure what functions were available: for example, HF did not know what the rolling 'film strip' menu across the top of the screen was for (HF/T 55), and KW did not even spot that menu (KW/T 57).

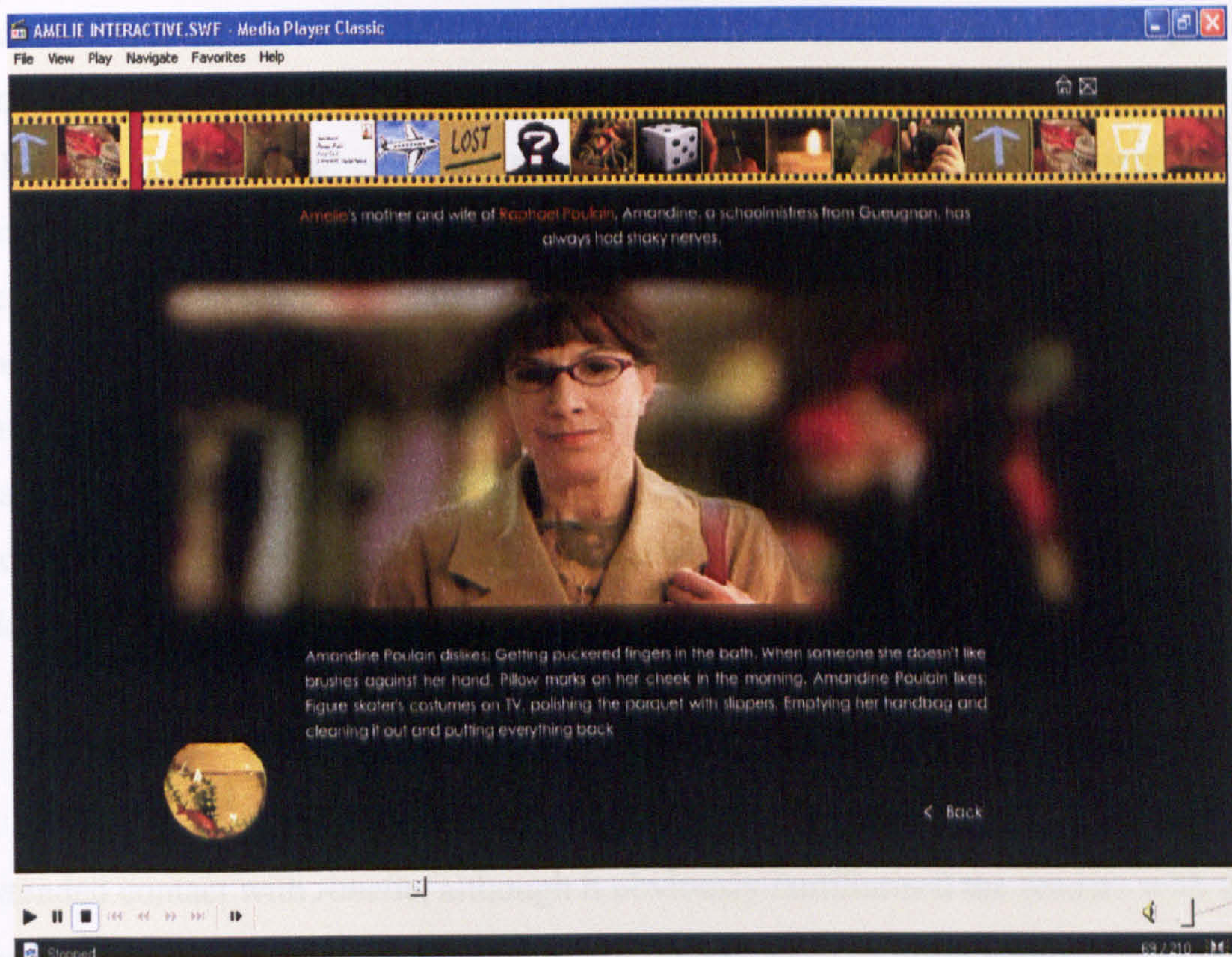


Figure 26: screen from *Amelie*, showing film strip navigation bar at top

The researcher therefore needed to 'explain' some of the available navigation tools, which may well indicate a design defect in the piece; however, once participants were aware of what tools were available and what various links, hotspots, and buttons were for, they enjoyed the freedom this piece gave them to move around the narrative. HF was typical in her praise for the film strip device: 'I think that's really good, because if you go on it long enough you'll probably understand how it all links together' (HF/T 44).

The questionnaires were less consistent, with split opinions on overall ease with navigation: three of the four felt the system was easy to use (AM/Q 2.3), three of the four said that links were not obvious (AM/T 2.4), only two of the group felt they could move readily in any direction (AM/T 2.5) and only two said that menus were easy to use (AM/T 2.11).

When asked about these issues in the discussions, the group were able to explain the problems and the advantages of *Amelie's* system. Familiarity with the idiosyncratic design was the first issue: 'I think the more you use it, the clearer it

becomes' (AM/D 52). In order to jump that initial hurdle, which could discourage some readers at an early stage in their experience, a clear set of tools was required, rather than the somewhat enigmatic symbols and 'secret' hotspots used: suggestions were for 'guidance' in the form of instructions (AM/D 306), a clearly labelled main menu (AM/D 313), and a system for indicating which parts of the narrative had been read (AM/D 238). HF also, interestingly, in light of the schema theory of Douglas and Hargadaon (2001) likened the piece to a DVD, in which you are offered a menu if chapters: 'you can go to "scene selection". It would be like that, you'd have that to go back to.' (AM/D 319). Features such as these would all stimulate further reading, aid orientation, and convey narrative progression more effectively.

- *Orientation*

Extended contact with *Amelie*, although it obviously familiarised the readers with the design of the navigation system, did not lead to a security of orientation.

Despite the initial confusion mentioned above, exploration of the 'book' was enjoyed by these readers, and quite easily facilitated by the interface. The various orientation tools were readily usable for this group: for example, GH noted that *Amelie* used standard web symbols (GH/T 116-119), while NM quickly realised which was the home button (NM/T24). Nonetheless, by the time the piece had been more fully read and the questionnaires returned, three out of four were disoriented in the site and the narrative (AM/Q 2.7; 2.8). Three of the four wanted a 'home' place to aid orientation (AM/Q 2.6), and the group was split 50/50 as to whether they could move readily in any direction they chose (AM/Q 2.5).

In the discussion the issue of disorientation was expressed as a problem of narrative movement more than web geography, but the points raised do show how interconnected are navigation design issues and readers' pleasure in the narrative. In the hypertext environment, the reader is being asked, at varying degrees of complexity, to create their own story, which can become disorientating if the navigation forms a block to coherence-forming patterns (cf. Iser 1976, and Kendall and Réty 2000). This issue was best illustrated by a very practical suggestion to help overcome this narrative dis-location, which came out of an exchange between two of the group members: 'it would be good if you could actually drag things down that had actually remembered the order of your own story' (AM/D 237).

What these readers wanted was some way for the site to record clearly where they had been in the narrative, as well as where they were in the 'site'. The fact of reading on screen and moving around a virtual space was not the problem for these readers, possible because of their age and their consequent second-nature familiarity with web page design and browsing behaviours: narrative was of prime importance.

8.7 *Of Day Of Night*

- *Movement*

It will be helpful to reiterate that *Of Day, Of Night* is delivered via a map graphic that fills the screen: this map contains hidden hotspots (hyperlink areas), and some visible links on text. New hotspots appear as the reader progresses through the narrative. Some navigation tools are hidden and only appear when the mouse is passed over them, meaning that a reader/user can potentially miss those tools if he/she does not fully explore the screen with the mouse. Some navigation tools only appear after the reader has 'read' particular sections of the piece, meaning that there is in part a fixed sequencing of 'events' which is pre-set by the author.

Participants all saw quickly the basic principal of movement around the environment; perhaps because they were absorbed with exploring the visual elements they were not concerned with where they were in the space or the narrative structure. These issues were however brought out more clearly via the questionnaires and the discussions:

Four of the six said that the navigation system was easy to learn (O/Q 2.3), but four of the six also said they wanted a 'home' point (O/Q 2.6), suggesting that navigation was not totally straightforward. The group was split 50/50 as to whether they felt able to move anywhere they wanted (O/Q 2.5).

In the discussion sessions these areas were pursued. The map graphic worked reasonably well (O2/D 75), in three ways: as a visual metaphor for the story and as an orientation device, and a 'home' page for jumping to different sections of the story. But, overall the group found navigation difficult: RC said, 'I found it very frustrating that it was all hidden... I had to fiddle to find out how to get back because that wasn't clear. You had to get back (to the map) each time' (O1/D 94-98). Others found that some screens were hard to move away from: JG said, 'There was one I couldn't get

out of' (O1/D 101), Everyone in the group found this aspect of navigation frustrating, and AP spoke of a further problem: 'The only way I could get out of it was to hit escape, which obviously takes you out of the whole thing' (O3/D 45). It turned out that AP had actually never found the 'back' button because it was so well hidden! In his case, the 'failure' to find (the author's failure to design effectively?) the back button blocked most of the story (O3/D 47-55). At best this particular navigation device was frustrating (O1/D 401), at worst it entirely spoiled the experience.

- *Orientation*

The general response was that orientation was hard to achieve, but not impossible, and there were clear positive responses here. The central split in the narrative and navigation between day and night helped BW (O1/D 206). JG found her sense of orientation grew as she became familiar with the navigation, format and narrative: 'it was only the second time that you could mix it all together, and then when you mixed it all together, that's when you got your orientation' (O1/D 210). The map elements also helped to encourage continued reading (2/D80).

There was an interesting opposition in opinion regarding orientation: four out of six said they knew where they were in the site at all times (O/Q 2.7), while five of the six said they did *not* know were they were in the story (O/Q 2.8). It is worth noting questionnaire item O/Q 3.11 in which all six readers said they could not summarise the story: this clearly indicates the connection between narrative orientation and apprehension of the story. Site orientation on its own will not create narrative orientation, it appears.

8.8 Summary discussion: *Nielsen's principles in action*

As discussed in Chapter 4, Jakob Nielsen's (1990) navigation principles still hold good across a wide range of interactive media. Below Nielson's key navigational 'rules' are applied to the hypertext fictions examined, in part to ascertain how far hypertext narratives deploy effective navigation tools, and in part to begin to understand how hypertext narratives are different from other interactive media so far studied by the web design community; as was argued in previous parts of this

dissertation it is believed that hypertext has particular features which require 'special' thinking in regard to navigation.

- *Free movement, and backtrack facilities*

Some of the navigation systems seen above did allow for easy and non-confusing movement in any direction around the space (whether we call that 'book' or 'site' in this context). We can therefore say that it is possible for hypertext writers to design navigation systems that are user-friendly, and from the data outlined above we can summarise the common needs, as expressed by the readers studied:

Clear and easily accessed backtracking is required, as Nielsen says: the reader needs to be able to go back in step-by-step order (a trail), and out of order (using a map for example) to anywhere in the narrative that they have so far experienced. None of the hypertexts studied offered a truly flexible backtrack facility: for example, *afternoon* had its 'history' menu, but this did not allow readers to go freely to any section at any time; *Waves* relied on the web browser alone, limiting movement therefore to a step-by-step backtrack rather than free access to any section. The analogues to this are obvious: with a print book, the reader can easily go to any page forward or backward; and of course in the case of a book spatial orientation and narrative orientation are the same thing, assuming the reader reads the book in page-numerical order. In the hypertext environment, where habits from reading now must co-exist with habits from browsing, a backtrack facility should offer a reading trail and a map, both easily accessed.

Furthermore, the data suggests, free movement is not a facility to be offered without careful consideration of its effect on the aesthetic appreciation of narrative structure. *A limited range of choices for movement will reduce the reader's cognitive overload, allow for more easy movement, which in turn will lead to more satisfying grasp of the narrative.* To illustrate this point, we can refer to *These Waves Of Girls*, which was considered to present a baffling range of choices for movement which actually led to a stifling of movement altogether: once easy movement around the 'book' is blocked, it is clear that readers quite quickly lose interest in the story, whether that be one that Fisher has designed, or indeed one which the readers create via their interaction with the work .

Nielsen (1990) talks about free movement being appropriate to need. In a web browsing scenario, the need is typically to find information; in a narrative context the need is to achieve a familiarity with the fictional world, to gain sympathy or antipathy with characters, to build a consistency of apprehension of the concepts and events of the fictional world. *Effective free movement (including backtracking) in hypertext therefore would ideally enable the reader to go anywhere they wanted in the site, but more importantly, the data suggests, to go wherever they want to in the narrative.*

- *Recognise present location*

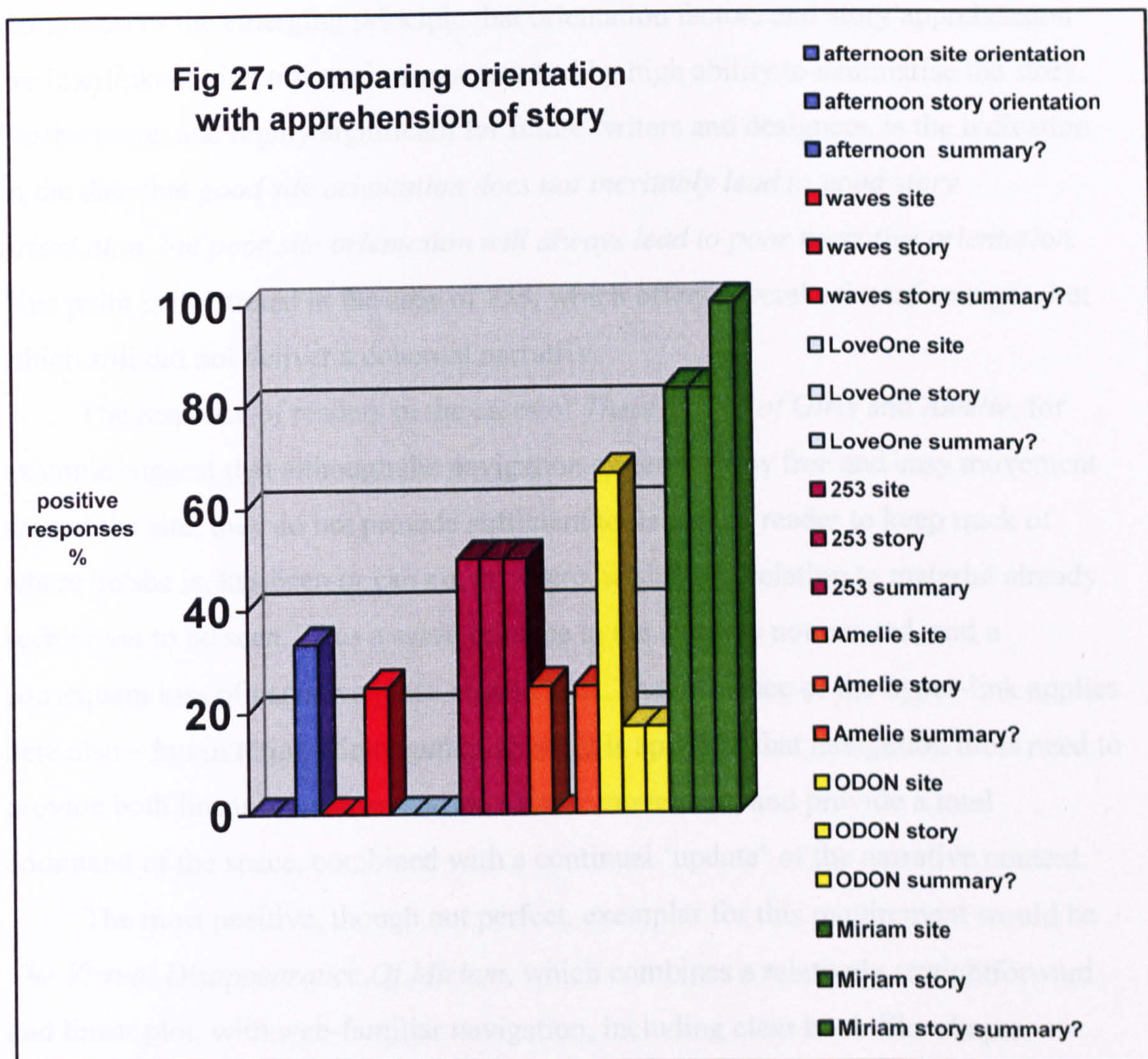
The examples of *253* and *Of Day Of Night* illustrate a feature of the hypertext experience that has not been covered in any depth in the literature so far. *Site orientation is not necessarily the same as narrative location.* The extra facility (demand) of interactivity and the intangibility of the virtual bookspace change this equation, so well-established in print, between 'site' location and narrative location. In hypertext *site orientation and narrative orientation must be considered as a unity in the design of the navigation system.*

A navigation system in an information-giving website need not concern itself with this correlation because the user creates his or her own 'narrative' as they search for information. In the case of fiction however, there is, as we have seen, still the assumption and desire for an author-created narrative, which the reader will eventually be able to discern. Despite what many advocates of the post-structuralist/postmodern view of the author-reader relationship argue, the readers in this study *all* wanted the author's design to eventually be accessible, since that is what they see as the core pleasure.

So, *navigation must allow the reader to know were he is in the site (the book) and in the narrative,* and these two orientations in turn allow the reader to apprehend the story. If one or both of these orientations is hard to gain, or conversely, easy to lose, the reader's sense of narrative and thus story is also disrupted. Whereas Miall (1998, 1999, and with Dobson 2001) has argued that interactivity itself is the cause of disruption to imaginative engagement with the narrative, the data here suggests that interactivity need not be a problem of this kind, if orientation is not threatened. Navigation systems are clearly at the heart of this issue.

- *Orientation factors associated with story apprehension*

Figure 27 below illustrates the interesting relationship between orientation factors and apprehension of the story, a relationship not considered in depth by any previously published studies. Participants were asked in questionnaire items 2.7 if they knew where they were in the site at all times, in, 2.8 if they knew where they were in the story, and in 3.11 if they would be able to summarise the story to a friend.



We see that there is some interesting and tantalising correlation between the orientation factors and story apprehension: for example in the case of *afternoon*, low orientation in site and narrative was reflected in only a third of the readers saying they

could summarise the story; similarly in the case of *Amelie* and *These Waves of Girls*, poor narrative orientation was reflected by only one of either group saying they could summarise the story. For *LOveOne* none of the readers knew where they were in the site, or the narrative, and none of them could summarise the story. In the case of *Of Day, Of Night,* though four of the six participants (66.6%) knew were they were in the site, only one (16.6%) knew where he was in the narrative, and only one could summarise the story.

For *253* we see that site and narrative orientation are exactly matched by story apprehension (50% positive response). Finally, comparison with *Miriam* further demonstrates the emerging principle that orientation factors and story apprehension are interlinked: high orientation was matched by high ability to summarise the story. Furthermore, and highly significant for future writers and designers, is the indication in the data that *good site orientation does not inevitably lead to good story orientation, but poor site orientation will always lead to poor narrative orientation.* This point is illustrated in the case of *253*, which offers several orientation signs, but which still did not deliver a coherent narrative.

The response of readers in the cases of *These Waves of Girls* and *Amelie,* for example suggest that although the navigation systems allow free and easy movement around the site, they do not provide sufficient tools for the reader to keep track of where he/she is, has been or can go, or where he/she is in relation to material already seen or yet to be seen. Thus a sense of place in the site was not created, and a consequent loss of narrative place ensued also. The influence of the hyper-link applies here also – but in terms of navigation alone, it is apparent that navigation tools need to provide both linear movement and non-linear movement, and provide a total command of the space, combined with a continual 'update' of the narrative context.

The most positive, though not perfect, exemplar for this requirement would be *The Virtual Disappearance Of Miriam*, which combines a relatively straightforward and linear plot, with web-familiar navigation, including clear book-like chapter menus, and a simple 'back to home' link. These features enabled readers to trace their path through the story and around the whole site without becoming lost in the negative sense: this in turn enhanced the experience of becoming lost in the positive sense!

The data suggest that for readers to enjoy the experience of free movement (interactivity at its best according to Nielsen) and of narrative absorption

(pleasurable reading at its best according to Nell), both aspects of orientation should be satisfied.

Although good site orientation will not always produce good story orientation, *the clear connection in all seven hypertext studies is that poor site orientation always leads to poor narrative orientation which leads to poor story apprehension.* Apart from the very small number of individual-reader exceptions seen with *afternoon* and *Waves*, the ability of readers to grasp the story will only be seen where both orientation needs are satisfied.

Good navigation design can provide security of place; good narrative design, facilitated by good navigation design, can create imaginative security. Several critics talk about this possibility as something for a somewhat distant future (Murray 1997b, Douglas and Hargadon 2001, Miall 2003), but the data here suggest it is possible now, with software already cheaply available, and with understanding of the reading experience.

- *Overview in large virtual spaces*

Closely connected to orientation issues is Nielsen's view that overview facilities should be offered.

Several comments were made by readers to the effect that they would like to know not only where they are in the context of the site and the story, but that they would like to know the size of the reading commitment. Overview options of various kinds could offer this, but the data shows that, in the case of the hypertexts studied at least, these were not provided with effective functionality, and we can see that this lack only added to the sense of displacement the majority of readers felt. The questionnaires, when collated across the whole study of 36 readers, shows that 22 of 36 readers wanted to be able to return to the home page (MAS/Q 2.6). This may be a factor simply of individual reader style; however we can say that if such a facility were readily available the majority of readers in this study would have used it.

Of the seven hypertexts studied, *afternoon* and *Amelie* did not provide any single overview (sometimes referred to as a home page), and this was seen by the respective readers as a deficit.

LOveOne and *These Waves of Girls* did offer a 'contents' page but these failed to impress because either those contents pages were hard to access once navigated

away from, or because the narrative was so fractured by the navigation system that readers could not make productive use of the contents page even if they could find it.

In the case of *253* there was an overview map, and accordingly this piece was seen as relatively easy to move around. *OF Day, Of Night* actually *relied* on the reader returning regularly to the homepage map (because otherwise the narrative did not progress), and readers here were aware of how much there was to see; but the author designed the 'return to map' link to be hidden unless scrolled over, a design mistake that could be easily rectified.

Once again, the only piece in this study that fulfilled the overview requirement adequately was *Miriam*, which provided a simple link to the chapter menu from any screen anywhere in the whole piece. On the other hand, *Miriam* does not offer a link to individual chapters except from the home page, and once the home page is returned to, each chapter must be read from the beginning again. This means that the overview is less useful in practice than it might be, a weakness that was noted by the study participants.

It appears obvious that *a simple solution to this problem would be to ensure that the home page or starting menu is available at any point in the reader's 'journey' through the hypertext.*

A further aspect of overview raised by the data is that some visual representation of how much has been read of the whole was asked for several times across all the seven hypertexts. None of the pieces studies offered this facility, and again it seems obvious to say that here is another very simple solution to a core issue. The only example this researcher has so far found of an hypertext with an always-available home page, *and* a progressive bookmark is *The Mobius Case,* an unpublished Masters project by Ruger Van Dijk at Bournemouth University. I have previously cited this piece as an excellent example of a good navigation system (Pope 2006), in that it shows, as a permanent feature of the screen layout, which sections of the piece have been read, and which have yet to be read.

Figure 28: ***The Mobius Case*****, showing timeline at top of screen**

- *Avoid book metaphor?*

Though Nielsen argues that the book metaphor should be avoided, there is no evidence from this study to support his view. The book metaphor seems only to be problematic when it is superficially imposed over a poorly designed navigation system. On the other hand, there is no evidence either to suggest that the book metaphor is essential for readers to be able to make the transition from print book to digital 'book'. The data supports Landow (1994) who argues that the spatial (navigation) metaphor should be fused to the narrative metaphor.

A lack of metaphor-fusion was seen at its most awkward in the case of *afternoon*, which used literary references within the fiction, the hyper-linked texts and elements of visual design, alongside a nearly-but-not-quite web-style navigation system. Schema-clash ensued, as a result of which readers could not find their way around the site or around the narrative without experiencing high levels of disorientation.

In the other examples, the absence of a book-like presentation or navigation system might actually have *caused* problems; readers of *LoveOne* found it difficult to move forward in the story because there was no equivalent to page-turning. Because

this piece was all text, the implied metaphor was already 'book' in the minds of this group. Perhaps, one might speculate, a clearer book-like navigation system would have helped these readers to feel they were moving forwards through a narrative, not just moving at random around a bookish website.

Similarly, *These Waves Of Girls* suffered from an apparent mismatch between its highly literary content, which suggested 'book' to the readers, and its disjointed navigation system, which offered too many and too unclear choices of movement with no anchor places such as chapter heading, home page, overview etc. to help readers feel secure. Again, one might speculate, a more defined structure, one in which at least chapters were offered in coherent, defined chunks as in a book, would have helped readers grasp character development and therefore apprehend a narrative overall.

In the case of *253, Miriam,* and *Of Day, Of Night*, the book was almost completely absent from the textual and visual language, and there was little or no reported problem for the readers with navigation or *site* orientation. The reason for this, the data suggests, is that these pieces followed the conventions for navigation that would apply to the great majority of web sites and other interactive media. There was thus no confusion or clash between book conventions and screen-based navigation behaviour.

The data do show however, how important to readers are their expectations: the readers of *afternoon* saw the hypertext as a literary novel presented on screen with interactivity, and this affected their perceptions of how they would move around in its space and its narrative; by contrast, the *Of Day, Of Night* group saw immediately, apparently prompted by the central map graphic, that this was not a book-like story, and thus their criticisms and suggestion were not about its lack of bookness, but simply about its functionality in terms of finding an appealing story.

Chapter Nine
Interface Design

This final data discussion chapter looks at the relationship between interactivity design, the use of multimedia elements, and the narrative experience of the reader: the data suggests how the reader-user's behaviour and ultimately his/her experience of reading a narrative is influenced by key elements of screen design. As mentioned at the start of chapter 8, navigation is part of interface design, and navigation issues could have been assimilated into this chapter. It is hoped, however, that the distinction between those two aspects of interface design makes for a more coherent presentation of data, and a useful discussion of factors influencing readers.

The design and functionality of hyper-links are included in this chapter, but it is noted that links are such an integral and important part of hypertext reading that they could have equally been placed in any of the preceding data discussion chapters.

9.1 *afternoon, a story*

- *Interactivity design*

The interface design of *afternoon* is simple in the sense that interactivity is limited to clickable words, the menus, and the navigation buttons. Therefore, comments around interactivity design tended to focus on how words within the narrative text offered or did not offer links, discussed in detail below. However, even that limited, and, one might have supposed, straightforward form of interactivity was tricky for this group to utilise.

The most noted issue was that *afternoon*'s interface design did not indicate quickly or clearly how it would operate. SB commented immediately that interactivity was not offered in a way he would expect, given his familiarity with web-page design and game-playing interfaces: 'My immediate reaction is to roll over it to see if any rollover things come up because that's something I'm used to' (SB/T 8). DA also commented on the unclear presentation and associated behaviour of *afternoon's* 'pages': 'from the point of view of being a former web designer, what a rubbish piece of design. You don't know where you're supposed to be clicking' (DA/T 7). RS

found instructions for interactivity unhelpful: '"To stop reading go to reader menu". Don't know where to go now...I'm lost' (RS/T 27). DL said, 'the interface looks straightforward,' (DL/T 59) but he also found interactive elements unclear: 'I wondered if the bits in brackets were something you could click' (DL/T 35). KH was similarly unsure: 'I thought that gave me the chance to write something, but actually it turned the page' (KH/T 32). After an initial testing of the screen for interactive areas, SB read the file information under the Help menu, inadvertently found the 'Begin' page, and declared, 'I'm not sure that's what I intended to do' (SB/T 16), commenting 'already I'm aware it's going to be inconvenient' (SB/T 21).

As we have noted in chapter 9 above, the navigation system was found to be awkward because of unfamiliar design and behaviour, and complimentary menus (for example 'History' or 'Links') were almost completely ignored in the think-aloud sessions, which suggests a design weakness. Without the prompting of the researcher, these menus were largely not even seen, let alone used.

DL found it hard to find links because they are not indicated in the current web-conventional way, either by underlining or highlighting (Nielsen and Tahir 2002): 'It's hard to see where the links are and why there are links there and what they relate to' (DL/T 69). When asked why he was not using the available toolkit (via menus and navigation keys) DA answered, 'because hyperlinks are the line of least resistance that's where you go first' (DA/T 93). RS had to be shown that clicking on words would produce a 'page-turning' result. HC was the only one of the six who expressed an initial enjoyment of the hidden nature of links on words, but even she came round to saying that she would probably eventually just use the return key to progress the story (HC/T 46). Perhaps responding to a similar uncertainty about the form of the work she was interacting with, KH found that the way lexia were titled created a certain clash of expectation (or schema): 'It's almost like data labelling than story labelling' (KH/T 51).

The questionnaire returns indicated further dissatisfaction with design features of the piece: four of the six participants said they were irritated by the interface (A/Q 2.9), and all six said that the interface never receded into the background to become second nature, as turning the pages of a book would be (A/Q 2.10). In the discussion sessions, design factors were always mentioned within the context of navigation and the enjoyment or otherwise of the narrative: it was the clear consensus across all six readers that the design of *afternoon*, in terms of functionality, was poor. Visually it

was uninteresting at best: KH said that the interface design was dated: 'just visual things, like the size of the text, the fact that it's black and white, it's small, all those kinds of things affect your immersion, don't they?' (A2/D 61). RS commented along the same lines that instead of an author in control of the creation of this piece, he sensed a 'technician, not a very good one I'm afraid, and a 'graphic designer, again not a very good one' (RS/D 119).

- *Links*

The identification and functionality of links became a issue for this group once they had had time to 'free-read' the piece: in the questionnaires five of the group said it was not obvious where links were, (A/Q 2.4); this is supported by A/Q 2.5 in which only three of the six said that the activity of following links enhanced their enjoyment of the story, and the rest said it disrupted that activity. (Perhaps surprisingly then, four of the six said that the links did keep the story moving [A/Q 2.4]).

Overall, when we additionally consider the range of comments made in the discussions, after spending their own free-reading time with *afternoon*, these readers felt that interactivity, such as it was in this piece, did not enhance the reading process or aid their engagement with the narrative. For example, DA said that he was 'clicking through it, quite quickly at times, in a desperate attempt to be engaged with it (A2/D 30). Lack of narrative progress through linking led to this displacement activity, to offset tedium.

The discussions suggest that these readers were mainly using links as part of the story-apprehension process, in Iser's term's (1976) attempting to fill in gaps and blanks, and to build consistency; in Nell's terms (1988), hoping to create an absorbing (flow-like) experience. RS found the activity of following links to be unsettling in terms of his grasp of the narrative. He commented that when he hit a word and followed its hyper-link,

> it didn't feel good, it didn't feel comfortable, and one of the things I found myself doing was making sure I went back. So to me, it wasn't a link that took me wherever it took me and off I went: it was a momentary departure from the linear' (RS/D 59).

HC felt that the presence of links and choice as part of the narrative experience 'had some potential' (A1/D 73), but ultimately 'perhaps they didn't deliver what I was expecting.... I was expecting things that were perhaps relevant to the characters, and sometimes I couldn't see the relevance of what I'd got. So I was disappointed' (A1/D 77).

9.2 *LOveOne*

- *Interactivity design*

Working out the navigation system seemed to be the pressing issue, but the associated visual design of this function was also discussed. The 'frames/no-frames' choice was not clearly displayed, and its effect on the reading process could be problematic: 'I find this less distracting, to be able to read it without (frames). But on the other hand, perhaps when I'm starting, I'd have the list of contents so I could play around a bit and see' (MH/T 116).

The use of red dashes as hyper-links was not immediately clear to any of the readers in the think-aloud phase. CL and KL, who were regular and experienced users of websites, did however quickly realise that these red dashes would be the key to moving through the narrative. Participant JP, once she had had their function explained, was quite keen to try them out, saying, 'That's clever, isn't it?' (JP 165).

Overall, at the think-aloud stage, the design of the interface had little effect, positive or negative on the readers. It was simply a question of working out how to find the story. The questionnaires show however, that after having had time to read further and gain more familiarity with the interface, these readers lost interest. Five of the six said they found the interface irritating (L/Q .9), all six found menus awkward to use (L/Q 2.10), and all six said the interface never 'vanished' to become second nature (L/Q2.11). The interface was always a demand on their attention, and as we see from the discussions, not a pleasurable demand.

KL put the issue succinctly: 'If someone can't be bothered to design a decent interface, you think "Why should I be bothered to read your book?"'(KL/D 186). Within the current standards of web space navigation, *LOveOne* seemed to frustrate:

> when you changed the link... it went against all the old conventions, the colour changed against the old conventions... and it does remind me a lot of the early web pages where people didn't have any standards (KL/D 182-190).

CL found the text hard to read, because of the technical features of screen resolutions, he thought (CL/D 66); and he added that, although he assumed that with time and familiarity the interface 'would become invisible to you', 'currently it jars quite noticeably' (CL/D 74-75). RF also found the text difficult to read (L1/D 252).

Finally, as in the think-aloud sessions, the 'frames/no-frames' option was generally disliked. KL also pointed out that the use of jargon would not help a first-time hypertext reader to overcome initial uncertainty (KL/D 224).

- *Links*

The very presence of hyper-links was at least momentarily problematic for some of these readers: in one exchange with the researcher, participant RF indicated that following links seemed an unnecessary distraction from what he saw as an essentially linear act of reading:

> Researcher: You could read it all the way to the bottom (of the screen), and then choose which link–
> RF: Yes, all right.
> Researcher: But of course, *which* link you choose–
> RF: It would always be the last link there.
> Researcher: Always?
> RF: Yes.
> Researcher: You'd always go for that one?
> RF: Yes. I'm conventional (RF/T 87-101).

AL also suggested that the availability of choice unsettled her understanding of narrative 'order': after reading the opening screen of *LOveOne* she said, 'Right, having read all that, I really wouldn't have a clue where to click on next' (AL/T 17), but she concluded, '...it says click on any link there and I would think, well, you must do it on order. But not necessarily?' (AL/T 36).

MH, displaying an overall keenness for the concept of hypertext, quickly understood the functionality of links (MH/T 116), but came to the stage where she commented, '...what I haven't worked out is what is the point of having these bits, where they don't actually seem to have any relation to the story' (MH/T158), and eventually reasoned, 'I think the trouble is, if you have too many (links) you're gonna lose the continuity of the piece' (MH/T 188).

By the time of the discussions, linking in itself did not appear to worry these readers, indeed some could now see creative and interesting uses for the hyper-link: for example, links could be jumping off points for expanding character development, (interestingly, something that *Miriam* offers) providing background detail (L1/D 202-219), or offering side-stories or prequels (KL/D 341). JP suggested that another use for linking might be to give clues to the reader, so that reading the piece drew the reader into a detective-like role (L1/D 397). However, the story should remain un-disrupted: 'It wouldn't interrupt the story if you didn't want to go down those lines. The story would still be there, but if you wanted to find out more about the character you could' (L1/D 230). Discovering the story was the main source of interest, and link design should serve that purpose.

One individual comment suggests that linking and the associated inter-activity demanded of the reader might affect more than just narrative structure: 'It creates a lack of trust in the author' (CL/D 128). This idea of the trust relationship between reader and writer may be implicit in many of the comments seen in earlier chapters regarding reading absorption, and it casts an interesting light on the arguments of Barthes (1968) through to Landow 1997) who prefer that the author is no longer regarded in the privileged role of authority figure. Reader CL however, wanted the author to be a trusted guide through the experience.

9.3 *253*

- *Interactivity design*

Interactivity in *253* was offered via the provision of hyper-links on words within the text, and a menu at the bottom of each screen, which includes a link to the interactive Journey Planner graphic. These design features are simultaneously navigation tools, and as we saw in chapter 8, these readers had much to say about the navigational

qualities of *253*. But there were also comments specifically around the visual/spacial design of the screens.

The interface of *253* is a basic text-page layout, with the train carriage maps actually created by the use of simple html tables with borders, rather than images (e.g. jpegs or gifs). Page design elements such line lengths, page widths, and fonts are not controlled by Ryman's design, but by the user's browser software display capabilities. In fact, there is a note on each carriage map page informing readers that: 'This map is not readable by browsers that don't support tables. A text only alternative is available' (Ryman 1996, http://www.ryman-novel.com/car1/alt1.htm). The text-only version has no layout beyond aligning of text on the page.

An immediate response from JC was that *253* looked like a 'basic web page' (JC/T 29), a neutral comment; but JH said that it looked 'very plain, to start, but...it's more of a text based thing,' (JH/T 13) her point being that she expected something more visually attractive because of the medium. JH had unfixed expectations coming to the session, but her experience as a multimedia designer told her that something graphical would appeal more, suggesting that the character-links could have been displayed as images or Cluedo-type icons (JH/T 102). Similarly, PC said that he was 'expecting more of a graphical interface' because this medium offers the opportunity for more than just text (PC/T 114-119). PC added that the design of this piece was not, in his view, substantially different from a printed book, and that was an opportunity wasted: 'It's no different to having one of those choose your own adventure books where it says at the bottom of the page, "go to page so-and-so"' (PC/T 219).

The questionnaires indicated a general approval of the design features: three of the four readers in this group said the visual aspects enhanced the story telling (253/Q 2.12), and three also said that the visual aspects did not distract from actually reading the text (253/Q 2.13). However, there was a slightly less clear range of opinion in the discussions.

The overall mood was summed up by JC: 'It wasn't particularly inspiring, but it wasn't a problem either... if you got with a web developer you could probably make it so much more engaging (253-1/D 372). JV commented similarly that 'more graphic detail' and even video (253-1/D 597) would have made the piece more interesting, and JH suggested again that a graphic realisation of the story's characters, perhaps clickable icons, would be appealing to her. Both JH and PC felt that *253* was too

much like simple reading and page turning: a more spatial, even 3D environment would be 'a nicer way... to be able to read a story on screen' (253-2/D 375-396).

An interesting counter point in this area came from JC who argued that the addition of more graphic and multimedia features would remove the experience too far from that of reading a book: 'it would just distract you more. It would remove it from the idea that it's a book' (253-1/D 616). He saw hypertext as book-like, and thus part of an evolving tradition, but multimedia as something quite other. This individual viewpoint alone might almost sum up the crux of the balancing-act ahead for writers of hypertext, who may want to acknowledge and utilise forms and devices from literature, but find themselves in a medium that almost demands new and very different design aesthetics to be explored and tried.

Overall nonetheless, the feeling was that author Geoff Ryman had a promising design concept in the tube map and train carriages (JC/T 65-109).

- *Links*

One reader liked the use of simple links in the text (PC/T 189), though, by contrast, JH could not 'see which bit to click on first' (JH/T 23); but links were not a significant issue in the think aloud sessions, as familiarising with the navigation system was paramount at that stage. The questionnaires returned some interesting detail about the effectiveness and effect of hyper-linking. Three of the four participants said that links were obvious (253/Q 2.4), everyone felt that links led to places that made sense (in narrative terms) and kept the story moving (253/Q 3.4), but only two of the four felt that the activity of following links added to their enjoyment of the story (253/Q 3.5).

When these aspects were followed up in the discussions, it became apparent that there were cautious mixed feelings, a sense of potential, but also the feeling that *253* did not quite 'work'. The possibility to link and thus jump around in the narrative 'line' was likely to be disruptive to reading and involvement with the story. 'I found it very, um, fragmented, by the clicking' (253-1/D 25), said participant JC, adding later that he could not stop himself from 'jumping around' (253-1/D 194). Choosing within a narrative context felt awkward (253-2/D 85).

It emerged that these readers found that once the offer of hyper-linking was there, it was difficult to ignore it, almost as if they wanted to hold on to their

established habits, and avoid distraction: 'You kept thinking, "Oh, if I go on this one, what will this page...?"' (253-1/D 201). Readers will use choice, given the chance, but this might not be a positive feature of the experience (253-1/D 219). Indeed, JC actively tried to 'do it systematically', which, for him, meant going through the characters (253-1/D 335), in an attempt to limit the non-linearity temptingly offered by all Ryman's links.

On the other hand, JV wanted to jump around, and said she was comfortable with that process because it reflected the way she approached most parts of her life, (253-1/D 341-348). JH said that once she overcame initial uncertainty, she 'got a bit more into it. Definitely got more into it...' (253-2/D 92). Even PC, who felt somewhat at odds with the navigation system and overall structuring of the piece, said that though the decision-making activity demanded by links might be 'unnatural' to him at present, 'I still think the possibilities are there' (253-2/D 148-152).

A suggestion for a way to contain the distracting lure of the hyper-link was that choice could be restricted (as the Storyspace guard-fields theoretically do), so that storylines would be coherent (253-1/D 273-303). Ultimately however, the key to making hyper-linking effective for the ludic reader is the author's 'ability to hold the reader's interest, before they suddenly think, "Oh, I wonder what's round the corner, or the next screen, or..."' (253-1/D 311), a comment which indicates how inter-related and interdependent are all the components of the reading process in hypertext fiction.

9.4 *These Waves of Girls*

- *Interface design and multimedia elements*

It was perhaps predictable that all four participants had a lot to say initially about the look and 'feel' of the interface because it makes strong use of frames, images, different coloured type, and a soundtrack of voices. At first glance, participant RG found the use of animated images appealing: 'It's interesting, it's different (RG/T 33); but overwhelmingly, quite quickly within each session, the comments of all the participants became adverse.

The interface seemed to break with conventions of screen design and operation. The screen layout interfered with reading: 'The actual format is breaking everything

up. Scrolling is difficult, but the imagery is breaking up the text' (EC/T 68). Type was not effectively used: 'This one isn't very user-friendly in terms of font colour. White on white.' (RS/T 38). It behaved awkwardly: 'If I come onto the internet, I expect it to act like the internet, and it doesn't act like a website' (EC/T 52).

These Waves of Girls uses images on every screen, some within nested frames, some as backgrounds, and some which are animated in response to mouse movement. They drew negative comments from participants CV, EC, and KC. CV noted that she was not sure 'what this abundance of images has to do with the story' (CV/T 46), and KC similarly said, 'It's so unclear...and I'm thinking why are they here? And I'm trying to relate them to the text' (KC/T 66). Participant EC was also frustrated that the images seemed not to be part of the story-telling intention:

> At this point now the text is so disjointed and I'm trying to make the story up from the pictures. But the pictures don't tell a story. Here, it's talking about cigarettes and private-eyes and there's a picture of a tooth... oh, here's a tooth... (EC/T 21).

The design qualities were commented upon in the discussion as a frustrating aspect of the hypertext reading experience. At the root of any problems was the apparent clash between expectations of a certain mode of operation, deriving from concepts of 'book' on the one hand and 'digital media' on the other. For example, participant EC came to the experience expecting to read a book on a screen but found instead what she saw as a website that did not behave as a website should:

> the communication model of the internet is that if something hasn't downloaded quick or made sense, you get rid of it, you just move on to the next website... You expect instant gratification (W/D 101).

It was clear that the participants expected images to contribute to the story-telling, but felt that Caitlin Fisher's images did not do this:

> EC: I spent so much time trying to tie the words to the blurred image and the relationship between them, and most of the time I couldn't find one.
> RG: True.

> KC: I looked at the image and I thought, "What has this got to do with what I'm reading?" I couldn't see a link and you couldn't make out most of the images anyway.
> RG: I felt like the images were just there to... try to do something without telling the reader anything substantial about the narrative at all ... (W/D 157)

Finally, the design of *These Waves Of Girls* did not meet expectations for digital interactive media generally, in the view of participant CV:

> I think it's a clear example of historical interactive narrative, so it's already quite dated. So it doesn't respond to certain standards now of accessibility. It wouldn't pass any accessibility test because people can't use it properly. I think we're looking at an antiquated aesthetic and surely that's slightly influencing our opinion of it (W/D 174).

- *Links*

Although all four participants were regular users of the internet and thus familiar with using hyper-links to search material on-screen, the presence of links, as part of the story structure and reading experience, raised comment. It is worth pointing out here that every screen of *These Waves Of Girls* contains multiple links on words within the text as well as menus of links. Participant CV, the multimedia designer, was positive from the start about the availability of links within text and images: 'There are some very interesting images and some interesting leads, hyper-links...in a way you're very much choosing a specific path through this very, very complex narrative' (CV/T 61/91).

However, the other three participants all had trouble with the effect links had on their understanding of narrative structure and their sense of reading smoothness, clearly associating linking with spacial and narrative disorientation:

> Ah, that annoys me usually on websites, when you get loads and loads of links, because then you get lost.... If you want to keep the reader– I mean, look at this, it's heavy isn't it? You can either choose to follow the text or follow the links. People might follow the links and then you just lose the narrative (RG/T 8).

Similarly, participant KC made several comments strongly expressing her sense of being inundated with links and the effort (cf. Aarseth 1997; Nell 1988) of choosing which links to follow:

> There's a lot to do and it's difficult to listen to the story and navigate around and look at the pictures. In terms of a novel that you could get engrossed in, it would be difficult, to me (KC/T 56).

Hyper-linking for this group was generally unrewarding in terms of its enhancement of the story-telling and reading process: all of the readers said links did not make sense or keep the story moving (W/Q 3.4), and three of the four said links disrupted reading (W/Q 3.5). Participant RG's comment suggests that apprehension and appreciation of the story is key:

> I couldn't connect to the story and the hypertext just made it more difficult. If the story had been better then maybe the hypertext wouldn't have been so much of a factor (W/D 51).

Participant KC was notably perturbed by the effect hypertext and linking had upon her sense of story:

> I thought what is the point of this story if there wasn't a beginning, middle and end.... You know, I read because I want to be told a story... you could have clicked anywhere and it wouldn't have made any difference (W/D 85).

Participant RG expressed the tension between linking design and narrative experience very clearly:

> ...when you've got ten links on a page, you don't know how important the ten links are for the narrative or for your understanding. Are they just there for your reference or are they required reading? How much are you supposed to invest in the links? At one point I just gave up and started clicking anywhere (W/D 337).

Similarly, participant EC said of the links that 'none of them made the story proceed, so then I lost interest in the links' (W/D 344). Finally on this aspect, participant CV, said, 'I really, really am intrigued, and like the experience of hypertext jumping, finding different nodes of information, you can go off a tangents and come back to a central story' (W/D 366). But even she found this hypertext to be confusing and ultimately not compulsive reading.

9.5 *The Virtual Disappearance Of Miriam*

- *Interactivity design*

Although interactivity would appear to be a key aspect in all hypertext fiction, some pieces are more interactive than others, for example offering different forms of interactivity beyond simple hyper-links on words. *The Virtual Disappearance Of Miriam* is one such, in that many elements on each screen are active, either words, whole segments of text, or images, or menu buttons, or animated features that can be moved or manipulated in some way. The participants in this group were all very aware of this interactivity during the think-aloud.

Notable is the fact that the book metaphor is largely avoided in *The Virtual Disappearance of Miriam* in favour of other communication symbols and metaphors, such as a graphic depicting a radio which provides music, or a sequence of text in the shape of the head of the narrator.

Menus appeared to be easily read and interpreted, as expressed by participant LS: 'Before I even click the mouse, I'm guided by the menu, so I'm not lost' (LS/T 7). To begin reading the piece, it was a simple matter to select which chapter to start with: 'I think I'll just start with the first. It's labelled one, two, three and four (MT/T 7). It was also easy to return to the main story if a hyper-link were to be followed: 'It was quite good because you could navigate back and forth. You were not taken away from the story when you started clicking on links' (MT/T 52). Along the same lines, participant HO said, 'I like having the forward/back buttons. I easily get confused. I know that I can explore, but I can go the linear way if I want to' (HO/T 18). All these comments indicate that these readers are happy to have the option to choose, but also like the feeling of security that clear menus or navigational aids can provide.

Overall, the group liked and enjoyed the visuality of this piece from the start, which may have been expected of a group with a strong multimedia background. Comments during the think-aloud such as 'Very impressive. I like the layout very much' (HO/T 8) and 'I like the design, I like the way it looks' (MT/T 24), catch the tone of this group's initial reaction.

However, there were several critical comments about specific elements of design. Participant MT felt that a spiralling text effect was 'a bit too much' (MT/T 32), while participants LS and MT wanted to be able to turn the background music off (LS/T 66, and MT/T 40). In reaction to some apparent links that actually were not active, participant GD made the point that, 'For the uninitiated it might be frustrating. If you're trying to get a wider audience it would be good to include things that wouldn't be a distraction and that would increase the reader's experience' (GD/T 36).

The questionnaires indicated a general satisfaction with the design and operation of the interface: everyone said they were not bothered or irritated by the interface as they read (M/Q 2.9); everyone said that the visual elements enhanced the story telling (M/Q2.12), and everyone said that the multimedia elements, in this case animation and sound, enhanced their enjoyment (M/Q2.14). Interestingly however the group was split 50/50 as to whether the interface 'vanished' and became as instinctive as turning the pages of a book would be (M/Q2.10), which suggests that for less computer-tolerant readers the idiosyncracies and flaws of this interface could prove to be a distraction or even an irritation.

In the discussion, there were several criticisms of operational flaws: unnecessary buttons (M/D 14), superfluous buttons on a TV graphic (M/D 24), and a fast-scrolling screen of text (M/D 27), were all mentioned, but these did not appear to have an overall detrimental effect on readers' enjoyment of the piece. The use of sound, however, was seen as a definite problem:

> LS: Keep the sound but so you can change it.
>
> MT: You can do so much with sound, as in a movie you can change the music and the whole movie changes. Just imagine a movie playing the same song, same music all through the movie – it would be boring.
>
> PD: In that way, it's sort of like a film because it creates a mood for you. In a book you always have a choice – you can read it in a certain way, but you can interpret in a way, the mood you feel. When you have music, it sets it for you....

LS: It was a bit distracting at certain points, so turn it off. (M/D 171-190).

Obviously, some of the hypertext narratives available do not have the range of multimedia elements that *Miriam* has, but when these elements are used, they must be part of the story, not mere decoration, and they must be able to be controlled (note similar responses to *Of Day, Of Night*).

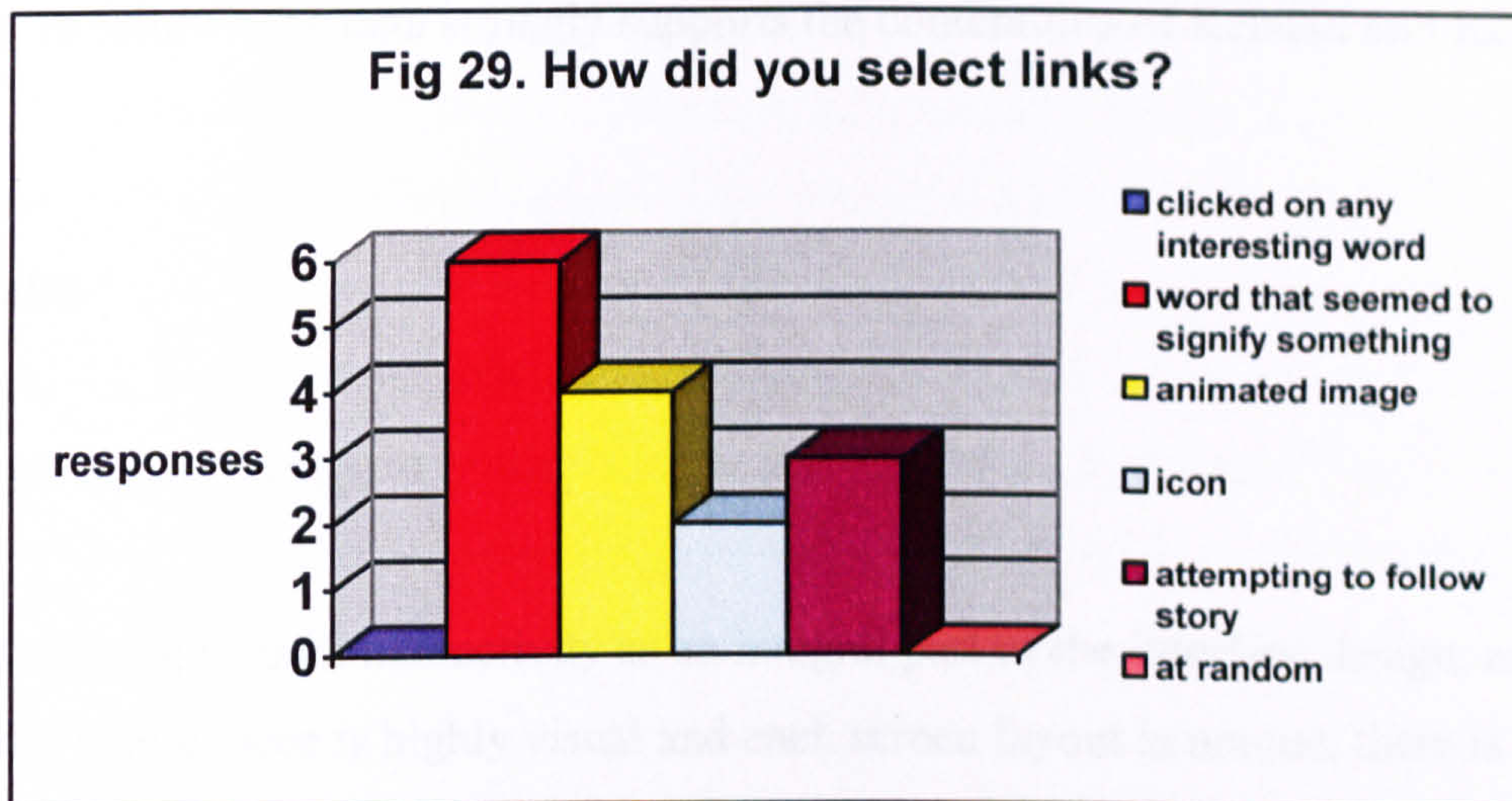
This was a design-knowledgeable group, but even so *Miriam* appears to have been a success in terms of its graphic and multimedia delivery, combining visual appeal with purposeful functionality.

- *Links*

Linking was indicated by the appearance of a hand cursor, whether on words or images, and this was immediately recognised because the hand is a web convention (LS/T 26). Words were further indicated as links by green highlighting, and again this was quickly recognised (PD/T 23). Visible links acted as prompts to choice, a kind of foregrounding, as participants MT and GD noted: 'I see the green outline and I feel tempted to click them' (MT/T 11), and 'I'm drawn to these links' (GD/T 14).

Overall, the linking signposting and operation were seen as straightforward and simple, but there were a few 'glitches' There were occasional highlighted words that looked like links but which were not active. Participant HO pointed out that the hand cursor on one screen indicated that the whole screen was active, which wasn't the case (MT/T 14), while participant DO spotted a redundant button (DO/T 7). The questionnaire asked 'Did the activity of following links add to your enjoyment of the story?' and five out of six answered yes, with one answering that linking disrupted his enjoyment (M/Q 3.5).

Readers used linking in different ways, but everyone said they clicked on words that seemed to signify something, (which were of course 'pre-selected' for them by the author's highlighting, as compared to the linking function in *afternoon*, which does not highlight or underline linked words). Figure 29 (M/Q3.6) shows the range of usage of links.



This group appeared happy with linking as a part of storytelling and ludic reading: five out of six said that links kept the story moving (M/Q 3.4). In the discussion, interactivity was covered in some detail, perhaps because of the particular make-up of the group. The story is seen as central to the experience, as with the other hypertexts so far reviewed: linking and other kinds of interactivity can be enjoyable 'as long as you are not taken away from the story, as long as I can get back to where I was and continue reading' (MT/D 58). Overall, the response was positive: 'The interactivity is actually what made it interesting,' said participant PD.

There were complaints about specific elements of interactivity, as has been noted above, but these were seen as 'bugs' rather than inherent barrier to an enjoyable narrative experience. As participant GD said, interactivity can truly contribute to the story, for example to create comic surprise, when the narrator/author offers a link to an erotic image of his girlfriend:

> It made me laugh, when it gave you a link to press and then it said, "file not found". I thought that was funny, so at times those links also add to the fun, to the humour' (M/D 66).

Although the identification and functionality of linking were received positively by this group, it should be pointed out that links here are far fewer, and far more linear in terms of narrative progression, than the hypertexts so far reviewed, and these seem to have been major factor in readers' responses: where links take the reader to a causally or otherwise coherently connected place in the narrative, they are more

satisfying to follow. The data strongly supports the contentions of Kendall and Réty (2000).

9.6 *Amelie*

- *Interactivity design*

This Masters project uses interactivity as an integral part of the interface design, and because the whole piece is highly visual and each screen layout is unique, there is no consistent layout grid as we have seen in for example, *253* or *LoveOne*. In *Amelie* interactivity may be found on images, on words, and in the film-strip menu. Thus interactive elements have to be discovered on each new screen, as opposed for example to *These Waves Of Girls,* in which interactivity is always on individual highlighted words or in menus.

Uncertainty around design factors characterised the think-aloud responses, and show how interactivity can be facilitated or hindered by interface design. For example, some type sizes were too small to be easily read (GH/T 38), on some screens, hotspots or links on words were not clearly indicated (GH/T 43), and the red tag to open the film-strip menu was not readily noticed (NM/T 61; KW/T 57). NM said, 'If I hadn't been told at the beginning that I could click on those icons, I probably wouldn't' (NM/T 140).

There were nonetheless positive reactions: participant HF said that she liked the 'busy' screen (HF/T91): she liked having control over the experience, and felt that the design and interactivity 'kind of makes you focus on the art side of it. I think that's really good' (HF/T 98). Similarly, KW enjoyed the possibility to click on images of characters as a way to move around the narrative and the site: 'That's good. I like that' (KW/T 118). All four participants said that visual elements enhanced and did not distract from the story (AM/Q 2.12; 2.13), and that they enjoyed the multimedia elements (AM/Q 2.14). However, of the four, three also said that the interface did not eventually 'vanish' and become second nature, as turning a page (AM/Q 2.10).

By the time of the discussion, when one might expect much improved familiarity with the interface and its interactive functionality, this group still had reservations. There was still a level of doubt about what icons represented, suggesting that the author could use more standard web conventions for basic interactivity: for

example, the 'exit' icon 'looked like an envelope' (AM/D 16), and participant GH still felt, 'I think you need someone with you or something to read to explain it... once you knew what the different things were, it made it a lot clearer' (AM/D29).

However, the overall reaction could fairly be described as positive, in terms of design: the graphic elements, animations and sound effects were 'really good' (AM/D 398; 441), and the ability to move around the screen was enjoyed (AM/D 402). Participant NM also made the point that a well designed interface could actually encourage reading:

> It was the animation and graphics that caught– it was nicely split up, amongst the animation and around it, and that made you think, "I'll read that little section, and that little section." The way it was split up was nice... (AM/D 441).

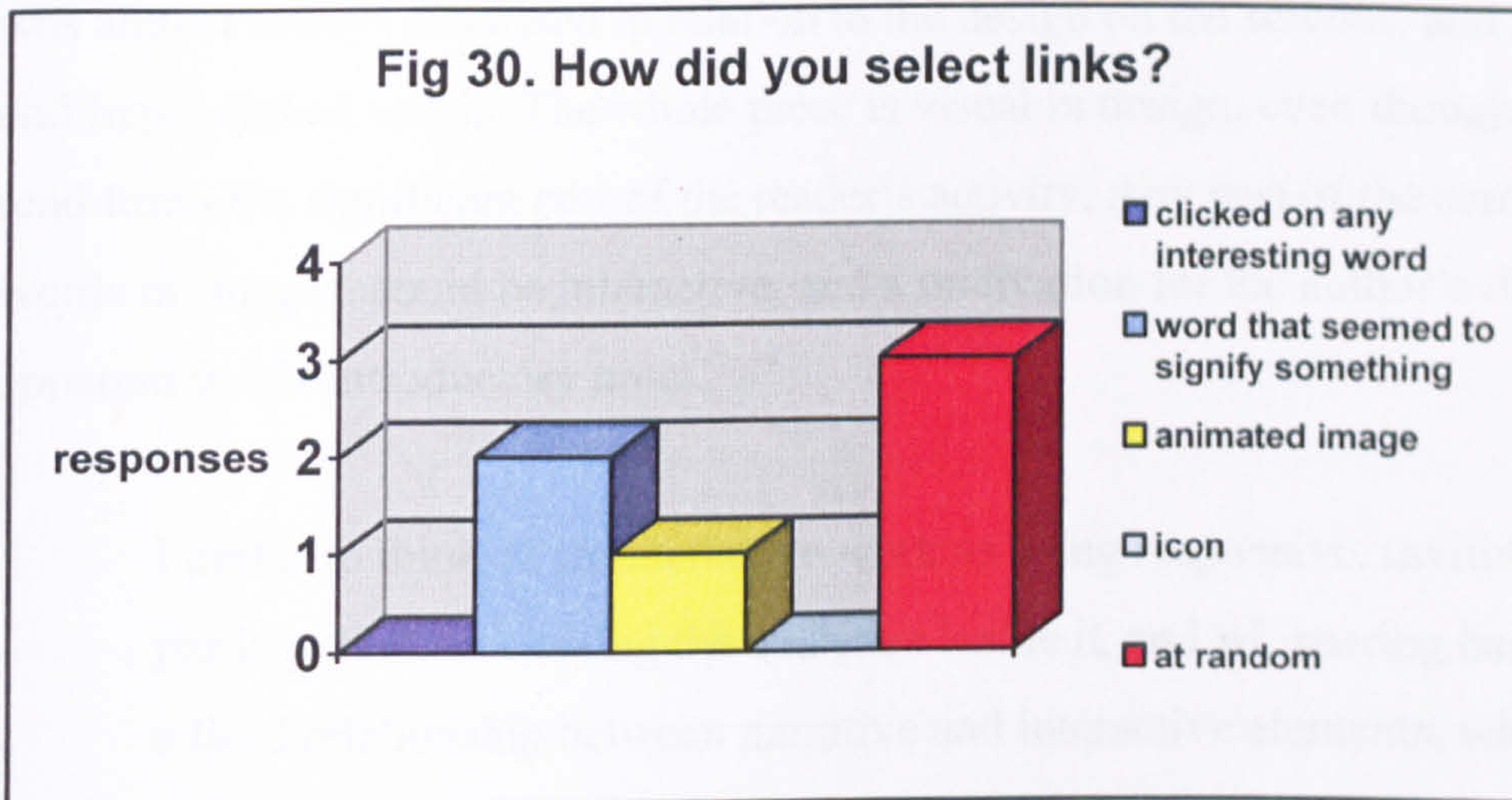
The design of *Amelie* also combined different media well for this group, and HF said 'you can go further than you would could in a movie' (AM/D 420), referring to the various choices to follow character or plot that interactivity gave her as she read.

- *Links*

Words are present as a significant element of the story-telling code, but words are no more likely to be highlighted as a link than an image or other icon-like graphic on the screen. Perhaps because website use and the central role of following links was completely familiar to this group of teenage readers, the presence and functioning of hyper-linked elements in *Amelie* was unremarkable for these readers. Comments in the think-aloud sessions were restricted to occasional expressions of uncertainty as to what was active on screen. For example, GH said that words highlighted in red were not immediately obvious to her as links (GH/T 28), and as we noted in the above section, some idiosyncratic symbols were not recognised as links, such as the red bar that if clicked triggered the rolling menu (NM/T 61; KW/T 57).

In the questionnaires, responses suggested that the activity of following links to progress a narrative was not completely enjoyable: three of the four readers said that it was not obvious where links were (AM/Q 2.4), three also said that the availability of links did not help the telling of the story (AM/Q 3.4). It was interesting also to note that the reasons for following links were not specifically related to story-finding, a

notably different response from those seen in regard to the other hypertexts so far reviewed, where attempting to follow the narrative was usually the reason for choosing links. Item A/Q 3.6:



An additional comment in the questionnaires perhaps provided a clue as to why these readers were not wholly focussed on story-finding: one participant who indicated 'at random' as her reason for choosing links also said, 'I didn't understand where any beginning/structure was' (A/Q 3.6). The narrative structure was so unclear, and the screen design so filled with linking choices that finding the story was 'relegated' into the background of activity, behind a kind of playing with the interface (cf.Campbell 2003).

In the discussions, again linking was not seen as a challenge in itself for these readers: positive comments outweighed problematic aspects (AM/D 355-8; 402). certain design issues, as we saw above, did influence reactions to the very central function of choosing and following links, but overall the design and functioning of *Amelie* was enjoyed for itself. The key problematic issue however was that the story did not unfold in a form the group could appreciate, as we discussed in Chapters 7 and 8. Again, 'real' readers say that design and function must deliver narrative.

9.7 *Of Day Of Night*

- *Interactivity and linking*

In this piece, interactivity and linking design are so intertwined within the reader's responses that they are discussed together here. Whereas, for example with *afternoon, a story*, readers might discuss the effectiveness of linking on words without reference to design features, in the case of *Of Day, Of Night*, the effectiveness of interactivity was almost always discussed in relation to the design on the screens, and its hotspots and hyper-linked words. The whole piece is visual in design, even though text to be read formed a significant part of the reader's activity. Any part of the screen, whether words or images, could be interactive, and a motivation for the author's design was apparent in her introductory notes:

> I prefer to think of an interactive work as being responsive, inviting participation, as coaxing the audience inside it, and whispering back. Allowing a fluid relationship between narrative and interactive elements, where participation appears seamless (Heyward 2004).

A prominent central theme that emerged from all the think-aloud sessions was that readers did not know what to do with the interface, and this response came even from members of the group who were very experienced users of multimedia material. Some comments indicated that readers knew that 'something' would happen if mouse clicks were made, but it was ether difficult to find the hotspots, or the likely effect of clicking was not clear. A typical reaction came from AP who commented:

> My initial reaction to this is someone might sit there who's not computer literate and think "what do I do?" There's no light (highlighted) words or anything where "I'll go to that and click."...I'm used to hotspots on graphics that point to the fact that you might want to click, and these are slightly hidden... Maybe it's a bit too subtle – I'm not spotting things (AP/T 18-52).

All the participants made similar comments around the fact that interactivity was made difficult to access and use by the graphic design; for example JG said, 'There's no obvious icon to click' (JG/T 14), while RC verbally expressed her uncertainty at what she was 'supposed' to do when confronted with this unfamiliar screen design: 'I haven't really looked at anything like this – I'm really just used to text, I'm used to clicking on words... There's no specific way to go through it'

(RC/T 12-22). BW did not find the hot spot for the 'Day' section of the narrative, and said, 'That's quite tricky, isn't it?' (BW/T 48). Overall, initial reactions to the interface were that the design was at best stylish (AP/T 57), at worst too 'abstract' (JG/T 31).

However, there were positive comments in regard to the way Megan Heyward's design allowed a freedom to explore. BW found this enjoyable: 'Ah, right! I'm just exploring it! ... you feel as if you're developing something. You're intrigued about what's going to happen in a while' (BW/T 33-39). JL was intrigued by the opening map graphic: 'It might be a sort of schematic for the story... I'm curious, that, now I've realised that, I'm wondering what happens!' (JL/T 9-20). JG liked to play (JG/T 53), also commenting that the mixed media were interesting to her at this initial encounter stage (JG/T 56).

Despite this initial interest, the questionnaires indicated that even after the familiarising 'free reading' phase, the interface continued for some to be obscure. All six readers said that the interface never became 'invisible' to them as turning a page might be (O/Q 2.10). Four of the readers did say that the visual and multimedia elements enhanced their experience (O/Q2.12, 2.14), but on the other hand, if we compare these returns to related comments about narrative engagement, we see that three of the four readers said that nothing about the piece 'carried' them along' and only one said that the 'look and feel of it encouraged exploration' (O/Q3.1).

In the discussion, the dominant topic was the visuality and functionality of the piece: the interface design appears to displace reading to a secondary activity for this group, very much as we have seen in the reactions to *Amelie*. It was significant that this group wanted a clearer design code to indicate interactivity, an aspect that would have knock-on effects for orientation too: there was a need for clear menus at the beginning (O1/D 77, 91), the hidden hotspots were frustrating (O1/D 94), and as JG said,

> after about a quarter of an hour I felt I'd sort of cracked the way she was approaching it and I could explore it all. But it was almost as if you had to find the way in, sort of find all of those hyperlinks, and when I got through that I felt I could explore it (O1/D 145).

This interface demanded a conscious effort from all of these readers/users, and at least part of the problem was that *Of Day, Of Night* ignored several hyperlinking conventions, as described very clearly by AP:

> You know the way you move your mouse over certain parts of the screen and little words will light up: sometimes those were links and other times they just seemed to light up, it was just the word and didn't go anywhere.... It was almost perversely frustrating. Like it was done to annoy you (O3/D 172).

This lack of design conventionality was a barrier to engagement, certainly at first, but it did offer some pleasure once its idiosysncracies were learnt, for example: 'I didn't think the visual was adding much, but when you got to all the little items I guess the visual was actually contributing something' (O3/D98). There was also pleasure to be found in 'solving' the puzzle (O1/D 152) that Heyward's main character was herself trying to solve, a 'quest' to which the visual interface added graphic stimuli. The use of multimedia elements as part of the narrative (soundtrack and video sequences) and as a part of the interface (animated images and text) was also enjoyed, for example: 'I thought the sound, for me, particularly created the mood' (O1/D135).

Finally, the presence of interactivity raises the issue of control and how much of readers want to have, a question that the readers of *afternoon*, *253*, and *The Virtual Disappearance of Miriam* also addressed. The central point is that if reader interactivity is required, then reader-control over that interactivity needs to be highly flexible and to provide in itself satisfactory narrative outcomes (cf. Kendall and Réty 2000, Murray 1997b). This point was made in a number of ways by different participants: JG said, 'I wanted to be able to make my own choices from the start' (O1/D 78), and she compared it to being in charge of a book: 'if you want to click to the end of a book you can, and you make that choice' (O1/D 85). AP said that having interactivity made him 'less receptive to the images' (O3/D 117), and he added, 'I didn't want to sit there and let them just swash over me. I wanted to be more in control of them' (O3/D 118).

The availability of control sets up a tension between reader and author roles. Overall, despite the amount of interactive elements, this group felt that they didn't have real choices, 'it was more a question of trying to tease out what *she* was trying to

put across' (O1/D 346). This was pleasurable (O1/D 348), but it indicates how in hypertext reading the reader's role oscillates between relative relaxed passivity and non-trivial effort.

9. 8 Summary Discussion

- *Expectations and usability*

It is clear, as in the other aspects of hypertext reading we have already discussed in chapters 6,7 and 8, that reader expectation plays an important part in the response to these pieces, no matter whether the hypertext is the text-only format of *afternoon* or the highly graphics-based form of *Of Day, Of Night*. Every reader brings a 'mindset' or a preconception, and this affects their behaviour with the interface, and their attitude to the effort required to find out how that interface works.

Aarseth's (1997) concept of non-trivial effort seems highly significant here, especially when that effort interrupts the absorption (Nell 1988) in the narrative. Hypertext interfaces appear to disrupt expectation more than an idiosyncratic interface in an information-based space or a game would, because of the clash of media and text forms, which we have seen as a problem throughout the data chapters, reflecting Douglas and Hargadon's (2001) theorising. In hypertext, reading and narrative expectations clash with interface expectations, setting up awkwardness, uncertainty, unwelcome effort, and ultimately some reported high levels of frustration and negativity.

Thus is the case of *afternoon, a story*, *LOveOne*, and *These Waves of Girls* the readers were all trying to reconcile their expectations of narrative and reading behaviours, with the expectations of usability for a screen-based medium; essentially they were looking for a reading activity and simultaneously a web-style interactivity. The two behaviours rarely lived comfortably together.

Where the interface design was more overtly visual and thus web-like, there were fewer reported difficulties with interactivity itself: we noted positive reactions to many aspects of interactivity in the cases of *253*, *The Virtual Disappearance of Miriam*, *Amelie*, and *Of Day Of Night*. The reason for this would seem to be that these pieces used a design code that more fully met design expectations for web and other interactive media.

253 seemed to sit between the two ends of the text-visual continuum, and the responses were similarly mid-way between an acceptance of web-style design and a reasonably comfortable reaction to reading small chunks (lexias) of linked text. Remember that it was also commented that the design of *253* could have been more attractive, but in terms of usability, it was seen as satisfactory, employing web-standards in a simple and mostly clear way.

But, even if the interface was attractive and easy to use, and even if interactivity were perceived as enjoyable in itself, if the interactivity design did not facilitate the apprehension of an engaging story, the interface could not be considered a successful design. This was clearly seen in the data from *Amelie* and *Of Day, Of Night*.

As in the previous chapters, the one piece which seemed to 'succeed' more than it failed, was *The Virtual Disappearance of Miriam*. This appeared to be well received by its group because its interactivity was mainly clearly indicated, easy to find and use, enjoyable in itself, and crucially, developed the story, not distracting from the reading of the story. *Miriam* was not without criticism, but it does provide useful positives which highlight and explain the problems seen in the other hypertext studied.

On the basis of the data, it seems reasonable to suggest that *interface design should use web design conventions for interactivity as far as possible, in order to minimise the levels of non-trivial effort required, and thus making access to the narrative as straightforward as possible for the reader.* This is not to suggest that writer cannot experiment with design and/or narrative form, but they must be aware that hypertext currently, in its newness and unfamiliarity to the great majority of readers, places heavy demands on a reader's attention already, without unnecessary work being added by sloppy design.

Furthermore, the data makes it clear that *design needs to be integral to the narrative*: the design now is the narrative: words, images, interactivity, typefaces, colours, the visibility of hotspots and links are all signifying elements in the storytelling process now, in hypertext, as Landow (1997) suggests. The empirical evidence of this study reinforces Landow's point, and indeed makes it an absolutely essential requirement of hypertext narrative design, in conception and delivery.

- *Balance between stimulus and distraction*

Campbell (2003) has argued that a risk for writers of interactive fiction is that the pleasures or other distractions of an interface may detract from the act of reading. Some readers in the study did indeed say that there can be too much happening on a screen, so that reading becomes pushed back to a secondary activity, simply because there are so many interactive features to 'check out'. This will result in the loss of narrative grasp and ultimately a fatal loss of interest in the unfolding narrative; this problem will clearly be amplified if the narrative structure is also fractured and difficult to apprehend. This study has not looked specifically at optimum levels of interactivity related to optimum reading absorption, but the data suggest that *interactivity should be kept at a level which enhances and does not impede reading absorption.* More research needs to be carried out on this aspect, but an important indication is emerging around the need to blend good interface design with narrative structure and reading pleasure. Some of the hypertext examples studied did display features that approached this apparently crucial balance. Various aspects of *253, Miriam, Amelie* and *Of Day, Of Night* worked well for their readers in delivering interesting behaviours and a narrative development.

The data showed how some readers slipped into a kind of play mode either because the story was hard to find because of poor interface design (e.g. *afternoon, These Waves Of Girls, LOveOne*) or because the interface was very busy (e.g. *Miriam, Amelie*), or alternatively difficult to use (*Of Day, Of Night*). We also saw that some readers were distracted from reading by *playing* with the interface to see what it would do, because they actually enjoyed *that* activity, as in the case of *Amelie*. If we wish readers of hypertext fictions to be audiences rather than game-players, the data in this study suggest that authors must strive to achieve a balance between an interface that is visually and operationally appealing, and a reading experience that is absorbing. We are seeing again, as in the other aspects of hypertext reading, that concepts from previously un-associated disciplines are all coming into play in the act of reading hypertext.

Balance between interface playing and reading absorption seems to depend on the optimum mix of interface usability, (where we might reference amongst the reviewed literature, the work of Campbell 2003; Gee 2001; Murray 1997b; and Nielsen 1989,1990), the psychological effort/reward balance (spoken of by amongst others Aarseth1997; Conklin 1987; Csikszentmihalyi 1975, 2002; and Nell 1988), and the interplay between reader and narrative structure (where we might utilise the work

of 'traditional' theory, e.g. Iser 1976; Fish 1970,1980; Brooks 1984; and new-media theorists such as Douglas 2000; Miall 1999; Miall and Dobson 2001; Miall and Kuiken 1994, 1995; and Murray 1997a, b).

The data suggest that *the interface must be simultaneously appealing and non-distracting.* There is very little in the reviewed literature, apart from Campbell's comments, to predict this difficult issue for writers and so the data here must be seen as only the beginning of a potentially fruitful future research area.

Readers in the study did suggest ways in which the interface might become enjoyable and invisible, and it seems that design can counter the problems associated with interface overload or interface distraction.

The first and most obvious step for writers is to make sure that interactive areas, whether those are links to other parts of the story, or menu options for chapters, or simply interactions such as switching sound on and off, should be clearly identified as such. It is again obvious that web conventions could be used, but there is nothing in the data to suggest that readers could not cope with newness, as long as it is clear what is hyper-active. This would have removed several negative comments about *LOveOne*, *Miriam*, *Amelie*, and *Of Day, Of Night*. *If interactivity is clearly presented, then the interface has a chance of being simultaneously engaging and cognitively (in terms of the effort/reward balance) invisible.*

- *Reader versus author control*

Although advocates of hypertext narrative (Bolter 2001, Jackson 1996, Landow 1997, for example) have enthusiastically argued that it offers the reader more creative input, the difficult *balance* between the positive rewards of creative control and the negative effects of unwanted effort, is an aspect barely discussed in the literature. Furthermore the readers' wish for *more* control, at certain points in the narrative and over certain features of the interface, has not been investigated in the literature: this study has apparently opened up a new area for discussion and research.

Whereas agency (Murray 1997b), i.e. the user's ability to affect the development of the narrative, is taken for granted as a game-playing essential, in hypertext it seems that there is a potential conflict between the offer of control and the reader's desire to be taken along in the author's created world. We have already established that games are not the same as narrative fictions, and we saw in the data

that once control is offered it opens a Pandora's box of desire for more control and ever more narrative-directing input from the reader-user, which these hypertexts did not provide. Even if hypertext did provide to the reader full control of the narrative, this may clash with the generation of reading absorption, along the same lines of the tension as we have seen in the sections above on usability and on stimulus versus distraction.

The data strongly supports Murray's (1997b) contention that authorial control and reader agency must be carefully balanced (see chapter 3). What appeared to be happening for the readers in this study, is that the presence of interactivity promised something that hypertext in its current form could not deliver, i.e. a game-like level of user control combined with a novel-like level of audience subordination to authorial leadership. The two experiences seemed to clash destructively in many readers' minds.

Miall in several of his papers (1998, 1999, Miall and Dobson 2001) has suggested that interactivity disrupts the act of imaginative reading necessary for literary pleasure; Birkerts (1997) has also argued that interactivity and narrative art cannot co-exist; Ryan (2006) doubts if we can expect to find familiar narrative pleasures in hypertext. There is evidence to show how what we will now call 'poor' interface design (and we are increasingly including narrative design within this category because the data suggest they cannot be separated) can create this tension between agency and absorption. However, the solution to this problem is suggested in the nature of the comments from the readers.

The readers who commented on this issue all talked about the need for control to be given such that it progressed the narrative at all times. Whether that control is the offer of hyper-linked words, or animated images, whatever the reader does to the screen should develop the story or the interactivity quickly becomes game-playing and/or the story is lost. Interactivity then almost becomes time-wasting in place of the intended activity of engaging with and becoming absorbed in an unfolding story. In the same way that too much activity on screen can push reading to the background, inappropriate or inadequate control can lead to reading being pushed out. Either of these poor design characteristics will spoil or even terminate the reading experience.

For example, the video clips in *Of Day, Of Night* would be considered inappropriate, despite the fact that they clearly were part of the narrative, because they could not be controlled easily and quickly. The point here is that an element of control

has been offered in order for the reader to access the video and watch it, but inadequate control has been offered in order for the reader to stop or maybe rewind the video. If a reader is obliged to watch every video in full every time the piece is run, then inadequate control has been provided, because every reader will expect to be able to control a video's playback.

There is also the suggestion within the data that there is an optimum amount of choice to be given if the narrative experience is to be maintained. In *These Waves of Girls,* for example, too many links on text simply led to choice overload and the perception that there was no story at all. In *afternoon,* the links were too hard to find, thus the opposite problem was occurring, but leading to the same result for the readers – a narrative that was too difficult to generate, and a story that was too difficult to discover. *The Virtual Disappearance of Miriam* and *Of Day, Of Night* seemed to be reaching a satisfactory balance, though not 'perfect' yet. Both of those pieces only offered choices that took the reader to consequential and sequentially logical parts of the narrative. It might be argued by some critics that the narrative in *Miriam* is too linear, not really a departure from the already well-established forms of fiction in print: nonetheless *Miriam* is highly hypertextual.

Narrative development is the key concern and should drive all design decisions, whether of visual or multimedia effects, screen layout, availability of menus, placement of links on text, or use of images as hotspots. *Control must only be offered where it is helpful for navigation or essential for the development of the narrative.* It might even be that authors will have to rein in their narrative ambitions for the time being until they have mastered the art of offering agency within a tightly organised narrative in a way that readers can cope with.

- *The functionality of links*

The data reviewed above demonstrates that *the functionality of links in hypertext fiction is of a different nature from its equivalent in information web-spaces,* creating new potential problems of two kinds, adding new definition to previously published discussions (Bernstein 2000; Calvi 1999; Landow 1997):

Firstly, in 'conventional' web spaces, links are clearly identifiable, by either the web-standard underlining of an active word, or highlighting; or, if an icon or image serves as a link, by a clear visual change to the cursor, usually to a hand symbol. In

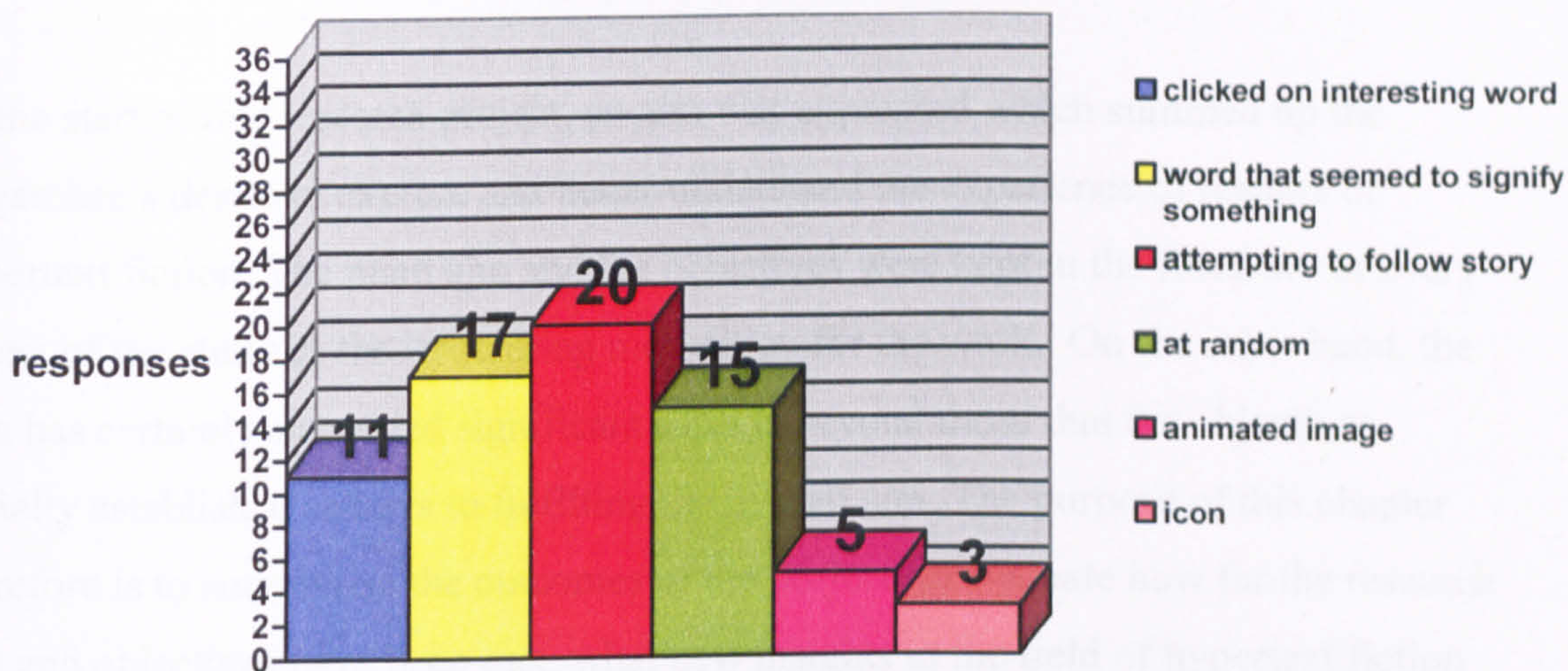
information space, if a link were to be obscure or even hidden it would be rendered totally pointless and useless. However, the data showed, as was predicted in the theoretical chapters of this study, that because hypertext narrative artists are attempting to be original and innovative, they are not necessarily using such recognisable hyper-linking signals.

The evidence from the data is conclusive here: for screen-based fiction, *screen-conventional linking iconography must be used, if the reader is not to be overcome with too many convention-breaking demands on their attention.* This is predicted by studies and discussions from usability studies(e.g. Pace 2003, Thimbleby 2000), from Conklin's (1987) conceptualising of cognitive overload, Nell's (1988) theory of the effort-reward relationship in ludic reading, and Csikszentmihalyi's flow concept (1975): these theoretical explanations are borne out strongly by the evidence of this study, and would appear to refute Landow's (1997) contention that the indeterminacy and challenge of hypertext narrative offers *the* natural and preferable form of reading.

Incidentally, this requirement does not preclude the book metaphor, but the data does firmly preclude the use of an idiosyncratic iconography if that iconography will not readily be recognised for what it is.

Where links were not clearly indicated, readers not only reacted as they might in an information-space, i.e. with confusion and frustration, but they also were likely to give up their reading because the narrative failed to develop in an interesting way. In an information-seeking activity, a reader will look for other useful links until the desired information has been found; but in the reading of hypertext fiction, the motivation to keep reading has to be generated by the links themselves, not solely by the readers' desire to find something out.

Secondly, and inextricably connected to the first point, links are, as some writers (e.g. Calvi 1999, and Kendall and Réty 2000) have argued, highly significant in the telling of the story, and so to discuss the design and functionality of links is also to discuss their role and effectiveness in allowing the reader to 'navigate' the plot. *It is now impossible to separate links as navigation tool from links as story-telling device.* The data show that links need to take readers to places in the narrative that makes sense to them, in terms of an unfolding story. Figure 31 below shows that across all the hypertexts studied, readers use linking as a part of the story reading experience:



We see from the data in Figure 31 (MAS/Q 3.6) that readers are predominantly searching for the story when they choose which links to follow, and it therefore would seem highly desirable for writers to design links with that specific desire in mind. Future research in this area might well use this data alongside Miall's work on literary foregrounding (Miall 2000, Miall and Kuiken 1999,) to support writers in understanding how links may be chosen and reacted to by readers. It is important to note also that the visual hotspot as link in examples such as *Of Day, Of Night*, *Amelie* and *Miriam*, as distinct from words as links, must still signify story association and development: images in hypertext fiction are part of foregrounding, to use Miall's term, because *the reader will assume that every hyper-active element is in some way relevant to the developing narrative.* Interface design must take this assumption into account.

Chapter Ten

Conclusions

At the start of this research project, an aim was expressed which summed up the researcher's desire to explore and better understand the experience of readers of hypertext fiction. The main aim and the objectives were kept in the forefront of every aspect of the study as the structuring motivation for the work. On the other hand, the data has certainly suggested significant aspects beyond those that the objectives initially established as keys to fulfilling the overall aim. The purpose of this chapter therefore is to summarise the outcomes of the project; to evaluate how far the research aim and objectives have been met; what new insights in the field of hypertext fiction have been suggested; how hypertext writers might use these insights; and what might fruitfully be done to pursue this area of study further as the hypertextual medium develops and its narratives evolve.

To reiterate the starting point for the study, the overall aim was:

To find out how readers of hypertext fictions interact with the narrative, in terms of:

- their imaginative, aesthetic response to the fiction itself

and

- their interaction with the electronic interface.

In order to fulfil that aim, four objectives needed to be met, as follows:

1. To understand how hypertext fiction is read
2. To discover whether hypertext fiction presents narratives that satisfy readers' expectations of what a 'good story' should offer, or whether it offers something new

3. To investigate how the interface influences the reader's experience of the narrative
4. To evaluate how far established theories of reading and interface design can explain readers' reactions to hypertext

These objectives are reviewed in 10.1 to 10.4 below.

10.1 How is hypertext fiction read?

- *The act of reading hypertext*

The study sought to ascertain how hypertext is read and enjoyed by accessing readers' responses to selected pieces. This research has referred to and made use of aspects of reader response theory, in particular Iser (1976) and Fish (1970, 1980), to attempt to understand what happens to pleasurable (lucid) reading when hypertext is added into familiar narrative forms.

Readers of hypertext, the data suggests, 'act' as Iser's 1976 model explains: they react to ideas and concept within the text, they interpret and adjust significances and meaning as they read, and as they carry out this process of gathering and making sense of the author's design, they try to build a consistency of understanding which will in turn allow them to engage with and enjoy the narrative. The act of reading itself is, as Fish (1980) argues, dependent on communal knowledge of conventions of narrative and reading, which both authors and readers consciously or unconsciously utilise.

Readers gain aesthetic appreciation from hypertext narratives as they do from other narratives in print. Hypertext is enjoyed by readers when they are able to participate in an Iser-like imaginative partnership with a text (which now of course includes images, menus, links etc), and when they are not overly distanced from the Fishian 'community' of narrative understandings by a flood of new, convention-challenging features.

There are many theoretical explanations from different disciplines, as we have seen in the previous chapters, which provide useful, though discrete, explanations of various elements of hypertext reading: for example, Iser (1976) helps us to understand aesthetic reading, Csikszentmihalyi (1975) defines the flow process that now seems to

be of high significance in hypertext reading, Nell (1988) explains aspects of psychological pleasure in reading, Brooks (1984) outlines the importance of plot, Murray (1997b) emphasises the demands of interactive structures upon writers and readers , Nielsen (1990) posits 'rules' for navigation systems. But none yet merge fully to explain hypertext reading in a unified model. Livingstone's (2004) call for new model of audience research perhaps implies this need, but as yet the hypertext discourse has not fully moved to its own model of reading.

We must now accept that the term 'reading' is not, in its current usage, adequate to describe what a participant does when engaging imaginatively with a hypertext: reading, watching, choosing, operating are now all part of the experience, and must all therefore be utilised in the creative process by the author, just as the combination of words is created in a print fiction, to attempt to stimulate generate a state of imaginative absorption, almost unconscious of effort, towards a state of flow.

We have seen in the seven pieces and the 36 readers studied that reading enjoyment could be severely hampered, even destroyed, by factors around narrative and structure, the behaviour of linking, and interface design. At a surface level this finding would appear only to bear out the views of the hypertext doubters, such as Birkerts, Miall, and Miller, and confirm the worries of more analytically neutral hypertext theorists such a Murray and Douglas, whilst seriously challenging the arguments of prominent hypertext advocates such as Bernstein, Bolter and Landow.

This might suggest that the core debate about hypertext's value and future has not been loosened at all. However, the data do offer an 'answer': the act of reading cannot be separated from narrative structure and linking and interface design, suggesting that a different approach to hypertext criticism will need to be developed. None of the theories and critical views in the reviewed literature fully take into account the interdependence and interrelationship between reading, narrative structures, navigation systems, and interface design.

This study suggests that the act of reading in hypertext must now be seen as an interdependent set of processes which includes reading text, reading images, reading navigation systems, and reading screen designs: all four of these elements are part of the 'text' that hypertext authors present to their readers.

Cavallo and Chartier (1997) argue for this approach generally as part of their thesis concerning the relationship between reading and the form of the book: this study moves their discussion on, in that we now see that in hypertext the 'book' is the

text (words, graphics, video and sound), its delivery medium (computer, CD, web, and screen), and the design (visual elements, navigation tools, linking structure, control over interactivity, design metaphors, layout). In print the latter three components have not been universally regarded as crucial in the analysis of reading and the reading experience: in hypertext they must be.

Figure 32 below is a simple visualisation of the integrated nature of hypertext reading, emphasising key factors suggested by the data in this study:

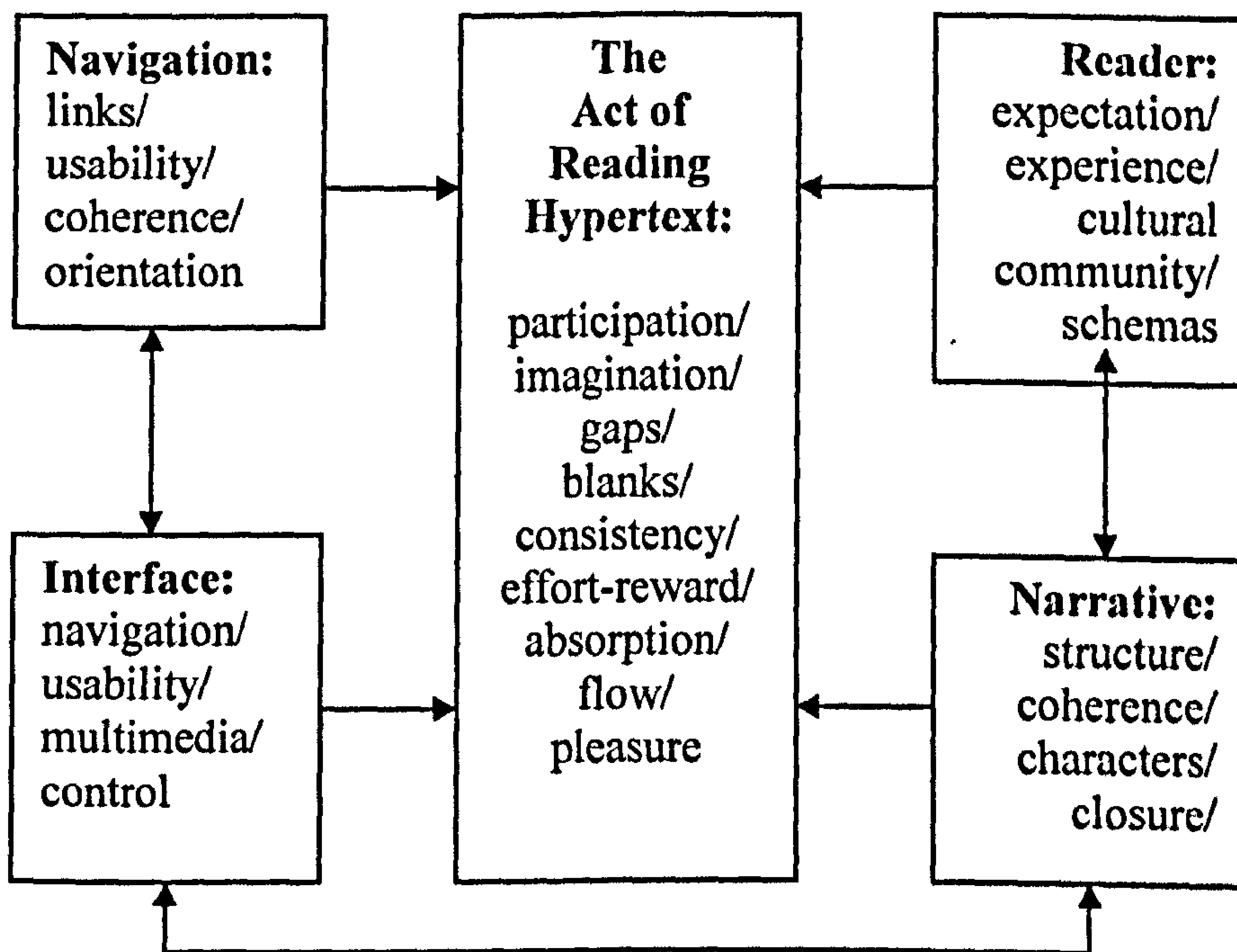


Fig. 32: The Hypertext Reader

- *The rebirth of the author*

A further issue which straddles all of the research objectives, but which bears strongly upon the nature of the reading itself, is that of the role and status of the author: Barthes' famous declaration that the author is dead (1968) is not well known or even pertinent to the 'average' reader who buys a novel or watches a film hoping to be led along by the author's creative vision in the author's designed world. Individual response will vary, according to the factors defined by such as Iser and Fish, but all the readers in this study would like to let themselves be guided along the reading

journey by the author: they are quite happy to read stories that end conclusively or which are open-ended; they are happy with non-linear structures; they are happy to blend reading with interactivity; they are quite used to the idea that the reader does a lot of 'work' to bring the aesthetic object to life in their minds. But for them to feel they are engaging with a work of art, they also want to sense the author, to sense that the author knows how his/her story is unfolding.

For this set of readers, hypertext is enjoyable when a story is being offered to them by a strongly present author. Janet Murray's (1997b) conception of the new kind of author (part poet/part programmer) is compatible with the data gathered by this study: an author who understands narrative structure and understands that each segment (whether called a lexia or a screen or even a level) must be linked through reader-activity to the next in a meaningfully sequential way. Douglas' (2000) argument that the author in hypertext is more than ever 'present' in the act of reading is also supported by the data: the important point here is that readers *want* this authorial presence.

The Barthesian discussion of the author as dispersed into culture may well still be of relevance at a philosophical level, and the arguments of Bolter (2001) and Landow (1997) that hypertext blurs boundaries between author and reader may also be in fact technically true; but for all practical purposes, readers, at least those in this study, want to feel that the author is the one who has conceived of and created the structure through which the reader accesses a pleasurable experience.

10.2 Does hypertext fiction present narratives that satisfy readers' expectations of what a 'good story' should offer?

Narrative structures are so much a part of all our lives that experience of narrative is almost analogous to our understanding of life itself (Brooks 1984). The readers in this study support Brooks, but in hypertext we need to add that structure itself becomes an issue for readers if it blocks narrative development. Modernist literature made structure and texture its own subject, but hypertext is not Modernist literature, it is new media literature, it is interactive fiction, it is digital fiction: hypertext does not explicitly *set out* to draw attention to itself as Modernist literature did via its narrative structure and content, but hypertext does draw attention to itself by its very nature, i.e. its newness and its radical challenge to expectation.

Hypertext is not a genre such as 'historical romance' within an existing narrative form and medium: hypertext contains every genre of fiction, but it exists in a new, radically unfamiliar form because of interactivity and visual design, and it exists in a constantly changing medium, as computers and software develop at a pace driven by commerce. Hypertext is in the strange position of needing to display and at the same time hide itself. This is a paradox, a dichotomy which hypertext authors will continue to need to struggle with: expectation and convention versus the potential for radical newness in *every* aspect of the narrative. Readers will enjoy the new (the interactivity, the linking, and the visuals) but not at the expense, the data here suggest, of the old (the established, well-loved structures and features of dramatic stories).

Thus we have seen in the data that every expectation of reading, of literature, of narrative structure, and of the medium itself is challenged in hypertext. This is such a central issue that it pervades every element of the data, and we have been obliged to touch on the issue of expectation in all four data chapters. Expectation is at the heart of the enthusiasm for hypertext and at the root of the frustration with it.

In terms of narrative expectation solely, which this particular research objective addresses, it is clear from the data that despite the existence of Modernist works, and despite even the many non-linear narratives familiar to print fiction and cinema audiences, fractured structures and non-linear sequences combined with the demands of the interactive medium often create too much work for readers.

However, it is not a totally bleak picture, because the data did also indicate aspects of hypertext fiction where expectation and newness could co-exist to a satisfying end. This set of readers showed that where narrative expectations were approached or fulfilled there was considerable interest in and tolerance of the newness of the medium and the narrative form: but no matter what other factors enhanced or hindered the act of reading, the desire for narrative progress was paramount for every reader.

It is proposed here also that the newness of the reading medium and its forms led to a restricting of readers' confidence in dealing with a difficult narrative structure: some readers did indeed say that they were afraid of losing the narrative when they interacted with the hypertext medium, a worry that a reader of Modernist fiction, (or perhaps a highly non-linear film, for example *21 Grams*) would not encounter. Difficult and unsettling though the narrative of *21 Grams* might be, the way the medium operates and the narrative to be viewed are both known. The

narrative structure might well make accessing the underlying chronological story difficult to piece together, but the narrative structure is clear and the operation of the medium to access that structure is also simple. Simple though the underlying story of *Of Day, Of Night* might be, the added challenges of the screen-based text and interactivity makes a simple story a difficult narrative experience.

Some critics may wish to argue that non-linearity, challenging textual weaves, and the dissolving of the boundary between author and reader are all desirable components for pleasurable reading, but the readers in this study did not totally agree. Clearly, some writers of hypertext will work at a highly experimental level, and may create critically praised new-Modernist pieces: perhaps *afternoon, a story* is one such, a new-Modernist work. But given that hypertext is still largely unknown to readers outside of the writing and academic communities, it is again clear from the data that hypertext narrative forms will have to allow themselves to be more 'conventional', at least for the time it takes for readers to adjust to more challenging, interactive, multi-sequential experiences.

Hypertext therefore can meet readers' expectations and provide the same kinds of fascinations that print fiction can: *253*, *The Virtual Disappearance Of Miriam* and *Of Day, Of Night* in this study offer the brightest 'hope' for the future. In their combination of relatively linear narrative structures and narrative-integrated navigation and design formats, they did attract some praise and generated some enthusiasm for the form.

10. 3 How the does interface influence the reader's experience of the narrative?

The importance of interface design in hypertext reading has been established in the data presentation chapters of this study. The integration of design into the creation of a fictional narrative text has also been shown to be of high significance in readers' reactions to the hypertext reading experience.

The area of interface design was split into two separate chapters in the data presentation section of this study: navigation and design. Really though, they are both aspects of interface design, and in any discussion of hypertext reading, it is argued here that navigation and visual design have to be considered together.

We saw that enjoyable reading is most likely when the reader perceives a meaningful narrative development, delivered by meaningful and usable navigation and screen design. *Navigation in the service of narrative progress is the key to enjoyable reading experiences,* it appears.

The data also showed that visual styling can ease or hinder navigation, as navigation can ease or hinder the narrative's development. It is the contention of this researcher that in creating hypertext fiction authors must design navigation as an integral part of the visual styling, as well as a crucially important part of the narrative structure they wish to offer. The visual styling includes the iconography of links, the metaphors used to pictorialise navigation tools, the visual elements (e.g. video or animation) of the narrative. Navigation is a facet of design which is not only to do with finding one's way around a space, but is also to do with the reader's imaginative grasping of narrative structure, which is then clearly also to do with the act of reading the narrative.

In practice for example, a writer could provide a facility such as a timeline which would indicate to the reader where he is in the reading space, where he has been already, and where there is still left to go. This was mentioned as needed by several of the participants in the study. If a writer preferred to 'hide' from a reader his whereabouts in the physical book, it is suggested that the narrative structure be relatively linear and easy to follow, as in *The Virtual Disappearance of Miriam*, which keeps to a linear structure within each chapter, so that readers cannot easily get 'lost in space'. In the case of *Miriam,* loss of the macro narrative structure is also unlikely because the chapter menu can be readily checked by the readers simply by returning to the home page.

It is suggested that an ideal would be a navigation system that allows the reader to go anywhere in the narrative sequence, read sections in any order they choose, find any part of the narrative or the 'space' as they wish. In addition to all of this choice for the reader, the narrative should develop coherently, no matter what choice of sequencing, via links, the reader makes.

This aspect of hypertext reading is under-researched, and at the time of writing it is the researcher's belief that the integration of narrative design and interface design is still not discussed as a serious issue for hypertext writers, because reader response is also largely ignored, apart from in one or two studies (Douglas 2000; Gee 2001). The reviewed literature skirts around the subject, concerned often with highly

specialised and esoteric aspects: Bernstein's 1998 'Patterns of Hypertext' is one such discussion that omits reader response in its formulations. And yet the data here shows very powerfully that the design of the navigation system and the visual styling of the interface are both centrally influential in the reading experience.

Hypertext functions as a medium that may still want to refer to its ancestors, the book, stage and cinema screen, but it is in fact something different. Bolter's (2001) concept of remediation is helpful , but it does not take into account that readers of hypertext fiction are *struggling* with that remediation and need help to find their way through the transition period. Book, stage, cinema, and computer screen all merge in the interface and thus readers need aids to help them grasp the new narrative form that is hypertext. Carefully thought-out design of navigation and screen configuration can offer that help.

The Storyspace-delivered hypertexts are pioneering, and have stimulated many of the discussions that have energised this research project, of that there can be no doubt. But the data indicate forcefully that hypertext fiction needs to move on from 'text-on-screen-with-links' if it is to find wider readerships. The data here suggest that writers who are well versed in multi-media and interface design (or those who will collaborate with web designers) are more likely to be able to create serious, engaging, stimulating narratives that also give a relaxed pleasure to readers (the kind of pleasure the readers in this study obviously wanted), as opposed to an academic challenge.

10.4 Evaluation of theory that can help in developing hypertext fiction

- *Iser's act of reading*

Iser's model of the act of reading has already been noted as potentially helpful in the study of hypertext reading (see chapter 2), and referred to in the literature, particularly by Douglas (2000); the data in this study appear to support Douglas and perhaps give, if it were needed, further validation to Iser's conceptualising of the reading experience. The readers in this study did attempt to engage imaginatively as Iser suggests, and several of Iser's key concepts are seen to be operating: the need to fill gaps and blanks, the consistency building process, and the interaction between the readers' culture and the writer's culture.

It is particularly important to note that, in hypertext, gaps (asymmetry between author and reader awareness) and blanks (implicit connections between words, ideas etc) become even more indeterminate because of the presence and effect of links and the likely polysequential narrative structures. This does not devalue Iser's concepts, but rather makes them even more significant, especially for writers to consider when designing link mechanisms and patterns. If gaps and blanks become too many and/or too difficult to resolve in the reader's imagination, the necessary consistency-building will not take place, leading to cognitive strain, interruption of absorption and poor likelihood of flow.

- *The reading-writing community*

Fish's (1980) concept of the community of readers and authors is also valuable, as we see that where hypertext authors stretch all conventions of writing, plot and medium, common codes for understanding are too few, and imaginative engagement with the text collapses.

- *Schema theory*

The schema theory explained by Iser (1976) and later re-used by Douglas and Hargadon (2001) seem to this researcher to be of great importance in understanding readers' reactions to hypertext. Questions around expectation emerged again and again, across all the hypertexts studied and across all the aspects of hypertext reading, narrative structuring and interface design. This is an aspect that the data has re-emphasised, and highlighted. Readers approach hypertext ready to use schemas from narratives they know, and from media they regularly use and enjoy. Because hypertext challenges and even more importantly perhaps, merges schema across narrative and media forms, readers are likely to be at best intrigued and puzzled, at worst frozen with uncertainty. Future research into the writing and reading of hypertext fiction should pay close attention to the use and effect of schemas. It should be noted here that Miall (2003) disputes whether schema theory properly describes reading, but the empirical evidence of this study suggests that schema are a helpful concept in attempting to understand how and why readers react to hypertext. Schema

particularly seem to be useful in explaining the various reading 'blockages' noted by the readers in this study.

- *Ludic reading and flow*

Nell's analysis of the psychology of ludic reading was considered to be highly relevant and useful in the empirical study: the readers themselves often presented comments that echoed and thus supported the Nell's conceptualising of reading pleasure. The concept of the reward-effort balance in particular seemed highly explanatory of hypertext reading, particularly when we consider interface factors within that equation.

In that area of discussion, Csikszentmihalyi's (1975, 2002) concept of flow now looks a very useful theory to refer to in future research and indeed in future writing.

Flow is mentioned only briefly by Douglas and Hargadon (2001), and they think that it may be problematic, because it seems to be more about mastery of game-playing challenges than it is about engagement with a sophisticated narrative. Elsewhere in the literature of hypertext, flow is not discussed. However, the data suggest that flow is a helpful explanation of what might take place in truly absorbing hypertext reading.

Flow is a state that hypertext readers would achieve if their imaginative response to the narrative were complimented by their enjoyment of the interactivity of the interface. Nell's ludic reader concept allied to Csikszentmihalyi's flow explanation will provide researchers and writers with a strong conceptual foundation for understanding the reception of interactive, multi-sequential narratives.

- *The importance of plot*

The plot appears to become even more important to readers of hypertext than it already is for the general reader of print fiction: when faced with several challenges at once to their expectations of genre, narrative form, and reading behaviour, the readers in this study 'retreated' from so much unfamiliarity in the experience. Whilst theorists across several literary fields of literary criticism advocate that difficult text, rhizomic structures, and a blurred author-reader relationship are likely to stimulate a Barthesian

'bliss' (1973) as opposed to a shallow (perhaps lazy is implied) entertainment, the readers in this study, all of whom were keen readers and in some cases highly 'informed' (Fish 1970), wanted clear plot movement.

We do not have to take the line that hypertext fiction can only be highly plot-driven, but it appears that the additional demands of interactivity and multiple structures almost 'force' readers to look for plot, perhaps even making them more concerned with plot, as a familiar framework for grasping the story and then for generating the all-important imaginative participation.

The views of Birkerts (1997), Miall (1998, 1999), and Ryan (2006), that interactivity and narrative force cannot not live together are not wholly supported by the data here, though we did see examples where that was the case. There are identified factors in the design of those examples that cause the difficulties readers noted, but at least in the example of *The Virtual Disappearance Of Miriam*, a strong narrative can be facilitated by interactivity. Brooks' (1984) conceptualising of the importance of plot provides a helpful explanation of readers' almost innate desire for narrative features such as mystery, tension, empathetic characters, climax, and closure.

As this researcher (Pope 2006) has previously argued, hypertext writers may need to offer narratives that are more Aristotelian than Protean if they are to capture a wider audience of ludic readers.

- *Usability research*

Usability research and methodology provides ways to test interfaces. It is argued here that, because the data suggests so strongly that the interface must be usable and meaningful as part of the narrative, usability study understandings would well be applied to hypertext fiction writing, criticism, and future reader-response studies. Usability is a key aspect of an interface's success to do its job, which in hypertext as we have noted, is not just about taking a user from place to place in a website or interactive space, but also about allowing the reader to move purposefully through a narrative structure.

Careful usability studies of hypertext fictions, (using methods advocated by (Ebling and John 2000, Kjeldskov et al 2004, Nielsen 1989, Nielsen et al 2002, Pace 2003, Petersen 1998, Wright and Monk 1990) will help hypertext writers and their

collaborators to create the whole 'thing' that is a hypertext narrative. Effectively, every time a writer creates a new hypertext fiction he/she is creating a new form of the book, and the design of the book is crucially important in the telling of the story, in a way it simply would not be in the medium of print. In the data it is clear throughout that the design of the hypertext's interface and associated navigation system is of high significance: consideration of usability during design, and testing preferably before public 'release' will help to create hypertext fictions that deliver a pleasurable experience for readers.

10.5 Limitations of this study

- *Audience*

A different set of readers may react differently, but it is argued that this set of 36 contained a good and useful cross section of ages, interests and computer familiarity along with a common enthusiasm for trying new forms and an openness to technology. It is also argued that is this set of readers was largely already well disposed towards hypertext and that a less well-'motivated' set of readers might have returned even more negative reactions.

- *Software developments*

Software developments, particularly in web-based applications such as Flash, are frequently shifting the possibilities for writers of interactive fiction. It might be considered therefore that the data in this study could be rendered obsolete fairly quickly by new software allowing writers new possibilities for narrative structuring and interface design. On the other hand, it has been possible for many years to create hypertext fictions that make productive use of the kinds of linking and other design features that this study suggests are important to readers. It is the contention of this researcher moreover that the data here has revealed and made more defined several core principles for the understanding of hypertext reading, which have been discussed above.

These core principles will apply no matter what innovations new software versions bring, and it is not anticipated that these will ever become less significant.

- *Dated examples*

Comments from the readers in the study suggested that at least four of the examples are already dated in that the software and interface has restricted their delivery potential. It is true that *afternoon, LOveOne, Waves of Girls,* and *253* make little use of features that have been available for some years, such as rollovers, animated gifs, colour, and graphics. Michael Joyce might well argue that he never intended his piece to include visual elements anyway. Perhaps then, pieces such as *afternoon* and *LOveOne* are dated more in terms of their conception than they are in terms of software capabilities: Eastgate's Storyspace authoring software, for example, is capable of including graphics and multimedia elements, but Joyce presumably chose to create *afternoon* as a written piece. Nonetheless, it seems clear from the data that if narrative is to be presented on screen then readers will expect visual and multi-media elements to play a prominent role in both the presentation of the narrative and the interface.

If *afternoon, 253, Waves,* and *LoveOne* are dated, it is insofar as they do not fully understand the implications for readers and the reading experience of choice, of multiple narrative structures, of links-as-structure and of interface design. But it would be somewhat unfair to criticise these writers, in the early years of a new narrative form, since there will obviously be many more phases of development before hypertext is a mainstream narrative form and the computer a mainstream medium for literary narrative.

- *Usability understandings for hypertext fiction interface design*

Usability testing techniques were, it is believed, utilised successfully in the gathering of data, but usability theory itself was not deeply explored in the review chapters, because the literature around hypertext largely ignores this field, and it was not anticipated how big a role interface design would play in the readers' responses. The significance of the interface cannot be overstated now, given the data we have seen.

The data here has suggested some interesting and potentially fruitful areas for future research and more could be done, for example in the area of the use of metaphors in interactivity design.

If for example, despite Nielsen's view, the book metaphor helps the reader to make the schematic shift from print to screen, then perhaps hypertext fiction should exploit this transitional moment more fully. Further reader-user studies could focus on metaphor-use to that end.

10.6 Extensions and developments of this research

- *Foregrounding*

David Miall and his colleague Don Kuiken (Miall 2000; Miall and Kuiken 1994,1995, 1999) have written about the operation and effects of foregrounded elements in literature: in this work Miall contends that the stylistic elements of literary language (e.g. metaphor, alliteration, imagery) are prominent in readers' affective responses to literary works. In hypertext, we have seen that many more elements, not only words, influence the reading process and consequent responses. Readers expect that every part of the 'page' should signify something of relevance to the unfolding story.

Images, icons, media controls, screen layouts, even fonts all draw attention to themselves, and then become part of the story-telling process (or, as the data shows, *should* be part of the story telling process). Furthermore the link is clearly an element of foregrounding, and is under the same artistic control as a metaphor, simile, or other literary device used by any author in print.

It is suggested therefore that study of reader responses to foregrounded elements in hypertext would add usefully to our understanding of how readers choose links and make sense of narrative in the multi-media environment. Miall and Kuiken's Literary Response Questionnaire (1995) might well be used or adapted to conduct such a study.

- *Links as story*

The data in this study shows that the very presence of links has potentially stimulating effect on readers, but that the activity of following them can also have a deadening effect on readers' imaginative responses to hypertext. The data does indicate however that careful visual design and strong integration of linking into the narrative structure *can* facilitate engaging and enjoyable experiences for readers, as is argued to be the case by Kendall and Réty (2000) and Murray (1997b).

It is suggested that a practice-based research project might attempt to write and design an hypertext story using the findings from this study, particularly the data reviewed and discussed in Chapter 8 on navigation. Such an experimental piece could then be 'tested' on readers, to record how well links functioned in the dual task of involving the reader's participation in the narrative structure and in generating meaningful narrative development.

Kendall and Réty (2000) say that their Connection Muse software helps to achieve meaningful linking patterns, and a reader response study might also be carried out specifically on Connection Muse driven pieces, for example Craven's *In The Changing Room.*

- *Structures*

It is conclusive in the data that, in hypertext, narrative structures can be simultaneously potentially dynamic and intriguing, and potentially completely incomprehensible. In that respect the data merely reflects the debate reviewed in chapters 2 and 3 of this study. Reactions vary across hypertext examples, but reader reaction was constant across all 36 readers in that too-obscure structures defeat ludic reading.

However, we did see 'glimpses' that hypertext can generate narrative interest and satisfaction. A major area of research for hypertext scholars and writers must therefore be to investigate in detail how multi-structuring can be aesthetically pleasing for readers. The most warmly received piece in the current study was *The Virtual Disappearance Of Miriam*, but it might be argued that it avoids 'trouble' via its very linear narrative. This researcher has argued here and elsewhere (Pope 2006) that hypertext narrative structures may need to be more conservative as authors and readers adjust and develop their accommodation with poly-sequential narratives.

However, only seven hypertexts were examined here, and a study of a much wider range of hypertexts, looking specifically at structure and interactivity, would add significantly to the current debate. An empirical study of a large spread of hypertext examples might be impracticable, but close readings using knowledge gained from this study, would provide new insights into how writers are using interactivity to create flexible and meaningful narratives (or if they are indeed doing that!).

- *Characters*

The way readers might grasp and identify with characters in hypertext fiction has barely been discussed in the literature, and yet it has emerged as a significant aspect of readers' responses to the examples studied. It is a gap in the present study, and in the state of the debate.

One consequence of fractured structures and the reader-choice offered by interactivity is the result that many readers in the study noted that they did not get to know or care about the fictional characters. The exceptions to this general reaction were *Miriam* and *Of Day, Of Night*, which did, for different reasons of structure and interactivity design, generate interest in a character or characters. *Of Day, Of Night* told the story of one character only, while *Miriam* concerned two main protagonists: the tight focus on a small number of characters might help to offset narrative uncertainty when combined with interactivity.

It is further suggested that a new development in hypertext studies would be an investigation of the ways in which characters are received and grasped by hypertext readers. For example, one suggestion from a reader of *253* (participant JH) was that a visual iconography for characters would have helped her to follow narrative threads and keep track of a character's story: so, future research might well focus on exploring the ways in which interface design could help readers to 'care' about fictional characters.

- *Interface design testing*

There is very little discussion of interface design testing in the literature of hypertext apart from Kendall's 1998 short paper. However, the data in this study makes it clear that interface design is of crucial importance in hypertext fiction writing and reading.

It is not being advocated here that hypertext writers and designers should feel constrained by human-computer interface 'rules' but it is clear that the use of good interface design by authors can only help readers to transfer their expectations of reading, viewing, gaming, web-browsing etc. into hypertext fiction 'reading'.

Nielsen and Tahir (2002) have published a deconstruction of web homepages, in which design and navigation principles are used to assess the selected examples' communication effectiveness. A possible starting point for a detailed and systematic study of hypertext fiction design might be a similar deconstruction of a wide range of selected hypertext interfaces, using principles generated in this study as assessment 'criteria'.

10.7 A future for hypertext fiction?

The excitement about hypertext narratives amongst academics and writers is certainly supported in some aspects and to some extent by the reactions of the readers in this study. Hypertext fiction does have the power to interest, to engage, and to generate reflective, imaginative reading. However, there is clearly room for improvement, and some of the concerns registered by the readers in this study will perhaps confirm what hypertext doubters have already argued.

However, overall, in providing a closer understanding of readers' responses to a highly innovative narrative form, the data has undoubtedly offered hope that hypertext fiction can continue to develop, attracting new readers. Furthermore, the readers in this study *wanted* hypertext fiction to 'work', they had interest and enthusiasm for a new form or storytelling, even if they had good reasons for criticising aspects of the examples they saw. Despite their reservations, they had ideas for ways in which hypertext could be made more enjoyable for them.

With continued creative output from writers and designers, and with further research, interactive fiction will surely begin to reach out to a wider audience of readers who love to read, who will love to interact in all of the many ways hypertext can offer, for the pure pleasure of a good story.

Bibliography

ANSUTEGUI, IZARO, 2005, *Amelie,* unpublished

AMERIKA, MARK, 1998, 'Stitch Bitch; The Hypertext Author as Cyborg-Femme Narrator' in *Amerika Online 7* (online http://www.ct.heise.de/tp/english/kolumnen/ame/3193/1.html accessed 15.10.02)

ARISTOTLE, 'Poetics', in *Aristotle's Theory of Poetry and Fine Art,* editor BUTCHER, S.H., 1951, New York, Dover Publications

AARSETH, ESPEN, 1994, 'Nonlinearity and Literary Theory' in *Hyper/Text/Theory,* ed. Landow George P, 1994, Baltimore, Johns Hopkins University Press

AARSETH, ESPEN, 1997, *Cybertext: Perspectives On Ergodic Literature,* Baltimore, USA, John Hopkins University Press

BALDICK, CHRIS, 1990, *Oxford Concise Dictionary of Literary Terms,* Oxford, Oxford University Press

BARRETT, MARK, 2000, 'Graphics: The Language of Interactive Storytelling', in *ACM SIGGRAPH Computer Graphics,* Volume 34, Issue 1 (August 2000) pp7-10

BARTHES, ROLAND, 1968, 'The Death of the Author', in *Image-Music-Text,* 1977, pp142-148, London, Fontana

BARTHES, ROLAND, 1973, *The Pleasure of the Text,* Paris, Editions du Seuil (edition cited 1990, Oxford, Basil Blackwell)

BEDFORD, MARTYN and CAMPBELL, ANDY, (2000), *The Virtual Disappearance of Miriam,* (online http://www.dreamingmethods.com/miriam)

BELL, JUDITH, 1999, *Doing Your Research Project,* Buckingham, Open University Press, (2000 edition cited)

BERNSTEIN, MARK, 1998, 'Patterns of Hypertext' in *Proceedings of Hypertext '98,* New York, ACM (online http://www.eastgate.com/patterns accessed 10/11/2004)

BERNSTEIN, MARK, 1999, 'Structural Patterns and Hypertext Rhetoric', in *ACM Computing Surveys* 31 (4), ACM (online http://www.cs.brown.edu.memex/ACM_HypertextTestbed/papers/45.html accessed 13/112003)

BERNSTEIN, MARK, 2000, 'More Than Legible, or Links That Readers Don't Want To Follow', in Mark Bernstein website (online http://www.markbernstein.org/LectureNotes.html accessed1/11/05)

BERNSTEIN, MARK, 2002, 'Storyspace 1', in *Proceedings of the Thirteenth Conference on Hypertext and Hypermedia,* New York, ACM Press, pp 172 – 181

BERNSTEIN, MARK, 2004, email communication to researcher (dated Monday 12/01/04 Bernstein@eastgate.com)

BIRKERTS, SVEN, 1997, 'Digital Storytelling: Is It Art?' in *Synapse* (online http://hotwired.wired.com/synapse/braintennis/97/31/index0a.html accessed 27/02/02)

BLANTON, JOHN, 1996, 'A Novel Medium' in *Wall Street Journal Eastern Edition* 28/3/96, Issue 62, p10

BOLTER, JAY DAVID, 2001, *Writing Space* 2nd ed., USA, Lawrence Earlbaum Associates.

BROOKS, PETER, 1984, *Reading for the Plot*, Oxford, Oxford University Press.

BUSH, VANEVAR, 1945, 'As We May Think' in *Atlantic Monthly*, July 1945, pages 101-108, reprinted in Nyce, James, and Kahn, Paul, 1991, eds, *From Memex to Hypertext: Vannevar Bush and the Mind's Machine*, San Diego, Academic Press

CAMPBELL, ANDY, 2003, interviews on *Dreaming Methods* website (online http://www.dreamingmethods.com/ accessed 3/11/05)

CAMPBELL, ANDY and ALSTON, JUDI, undated, *Inside: A Journal of Dreams* (online http://www.dreamingmethods.com/inside/)

CAVALLO, GUGLIEMO and CHARTIER, ROGER, 1997, *A History of Reading in the West,* Paris, Editions du Seuil

CALVI, LICIA, 1999, ' "Lector in Rebus": The Role of the Reader and the Characteristics of Hyperreading', *in Proceedings of the Tenth ACM Conference on Hypertext and Hypermedia*, New York, ACM Press, pp101-109

CONKLIN, JEFF, 1987, 'Hypertext: An Introduction and Survey', in *IEEE Computer*, Volume 2, Number 9, September 1987, pp17-4

COOVER, ROBERT, 1992, 'The End of Books' in *New York Times Book Review*, June 21, 1992 (online http://www.nytimes.com/books/98/09/27/specials/coover-end.html 18/12/2003)

COOVER, ROBERT, 1998, 'Hyperfiction: Novels for the Computer' *in New York Times Book Review*, August 29, 1, pp8-12 (online in *New York Times on the Web* http://www.nytimes.com/books/98/09/27/specials/coover-hyperfiction.html accessed 7/01/2004)

CRAVEN, JACKIE, 1998a, *In The Changing Room*, Word Circuits (online http://wordcircuits.com/gallery/changing/ accessed 12/07/2006)

CRAVEN, JACKIE, 1998b, 'Afterpaper' for *Media Morphs the Messenger 98* (online http://www.wordcircuits.com/htww/craven2.htm accessed 12/07/2006)

CSIKSZENTMIHALYI, MIHALI, 1975, *Beyond Boredom And Anxiety*, San Francisco, Jossey-Bass

CSIKSZENTMIHALYI, MIHALI, 2002, *Flow*, London, Rider

DENSCOMBE, MARTIN, 1998, *The Good Research Guide*, Buckingham, Open University Press (2001 edition cited)

DOUGLAS, JANE YELLOWLEES, 1994, 'How Do I Stop This Thing?' Closure and Indeterminacy in Interactive Narratives', in *Hyper/Text/Theory* ed. George Landow, Baltimore, John Hopkins University Press, pp 159-188 (online http://web.new.ufl.edu/~jdouglas/stop.pdf accessed 7.11.2004)

DOUGLAS, JANE YELLOWLEES, 2000, *The End of Books, or Books Without End?* USA, University of Michigan Press

DOUGLAS, JANE YELLOWLEES, and HARGADON, ANDREW, 2001, 'The Pleasures of Immersion and Engagement: Schemas, Scripts and the Fifth Business' in *Digital Creativity* Volume 12, Number 3, pp153-166

Dreaming Methods, website for digital fiction, http://www.dreamingmethods.com/

EBLING, MARIA R., and JOHN, BONNIE E., 2000, 'On the Contributions of Different Empirical Data in Usability Testing', *in Symposium on Designing Interactive Systems* archive: *Proceedings of the Conference on Designing Interactive Systems: Processes, Practices, Methods and Techniques,* ACM Press, New York, USA, pp289-296.

FISH, STANLEY, 1970, 'Literature in the Reader: Affective Stylistics', in *New Literary History*, Volume 2, pp 123-63.

FISH, STANLEY, 1980, *Is There a Text in This Class? The Authority of Interpretive Communities*, Cambridge, Mass., Harvard University Press.

FISHER, CAITLIN, *These Waves of Girls*, site launch February 2001, http://www.yorku.ca/caitlin/waves/navigate.html

FORSTER, E.M. 1927, *Aspects of the Novel*, Edward Arnold; edition cited 1977 Middlesex, Penguin Books

FREUND, ELIZABETH, 1987, *The Return of the Reader: Reader-Response Criticism*, London, Methuen

GEE, KIM, 2001, 'The Ergonomics of Hypertext Narrative: Usability Testing as a Tool for Evaluation and Redesign', in *ACM Journal of Computer Documentation*, Volume 25 Issue 1, Feb. 2001 (online http://portal.acm.org accessed 11/11/2004)

GUYER, CAROLYN, and JOYCE, MICHAEL, 2000, *Lasting Image*, (online http://www.eastgate.com/LastingImage/Welcome.html)

HAMILTON, CRAIG A., 2002, 'From Iser to Turner: Reception Theory Meets Cognitive Criticism' in *Style*, Winter 2002 (online: http://www.findarticles.com/p/articles/mi_m2342/is_4_36/ai_98167917 accessed 03/03/2005)

HEYWARD, MEGAN, 2004, *Of Day, Of Night*, Watertown: Eastgate Systems

HOLLAND, NORMAN, 1975, *5 Readers Reading*, New Haven, Yale University Press

HUBERMAN, MICHAEL A., and MILES, MATTHEW B., 1994, 'Data Management and Analysis Methods', in DENZIN, NORMAN K., and LINCOLN, YVONNA S., editors, 1994, *Handbook of Qualitatve Research*, Thousand Oaks: Sage

ISER, WOLFGANG, 1976, *The Act of Reading*, (English translation cited 1978, London; Routledge and Kegan Paul)

JACKSON, SHELLEY, 1995, *Patchwork Girl*, USA, Eastgate Systems (floppy disk version)

JACKSON, SHELLEY, 1997a, 'Stitch Bitch: The Patchwork Girl', in *Transformations of the Book*, MIT October 24th -26th 1997 (online http://web.mit.edu/m-i-t/articles/jackson.htmlaccessed 17/08/00)

JACKSON, SHELLEY, 1997b, *My Body* (online http://www.altx.com/thebody accessed 27/11/2004)

JACKSON, SHELLEY, undated, *Ineradicable Stain* website (online http://www.ineradicablestain.com/reviews.html accessed 31/10/05)

JAMES, HENRY, 1934, *The Art of the Novel*, ed R.P. Backmur, New York, Scribner's

JOYCE, MICHAEL, 1987, *afternoon, a story*, USA, Eastgate Systems

JOYCE, MICHAEL, 1997, 'Nonce Upon Some Times: Rereading Hypertext Fiction' in *Modern Fiction Studies* Volume 43, Number 3, pp579-597

KEEP, CHRISTOPHER; MCLAUGHLIN, TIM; PARMAR, ROBIN, 2000, *The Electronic Labyrinth* website (online http://www.iath.virginia.edu/elab/elab.html accessed 18/04/02)

KENDALL, ROBERT, 1998, 'Testing, Testing' in *WordCircuits* website (online http://www.wordcircuits.com/comment/htlit_2.htm accessed 01/12/2004)

KENDALL, ROBERT, 1999a, *But I Know What I Like* (online http://wordcircuits.com/comment/htlit_5.tm accessed 1/12/2004)

KENDALL, ROBERT, 1999b, *Dispossession*, (online http://www.eastgate.com/Dispossession/Welcome.html accessed27/11/2004)

KENDALL, ROBERT and RETY, JEAN-HUGUES, 2000, 'Toward an Organic Hypertext' in *Proceedings of the Eleventh ACM on Hypertext and Hypermedia,* New York, ACM Press, pp161-170

KJELDSKOV, JESPER; SKOV, MICHAEL B.; STAGE, JAN, 2004, 'Instant data Analysis: Conducting Usability Evaluations in a Day', *in Proceedings of the Third Nordic Conference on Human-Computer Interaction,* New York, USA, ACM Press, pp233-240

LANDOW GEORGE P, undated, *Stitching Together Narrative, Sexuality, Self: Shelley Jackson's "Patchwork Girl"* (online http://www.altx.com/ebr/reviews/rev3/landow.htm)

LANDOW GEORGE P., 1997, *Hypertext 2.0,* USA, Johns Hopkins University Press

LANDOW, GEORGE, 2004, 'Is this Hypertext Any Good? Evaluating Quality in Hypermedia', in *dichtung-digital 3/2004* (online http://www.dichtung-digital.com/2004/3/Landow/index.htm accessed 24/1/04)

LINDLOF, THOMAS A., 1995, *Qualitative Communication Research Methods,* Thousand Oaks, Sage

LIVINGSTONE, SONIA, 2004, 'The Challenge of Changing Audiences. Or, What is the Audience Researcher to do in the Age of the Internet?' *in European Journal of Communication* Volume 19, Number 1, pp75-86

MARCUS, STEVEN, 1974, 'Freud and Dora: Story, History, Case History', in *Partisan Review,* Volume 41, Number 1 (1974)

MCCAFFERY, LARRY, 2001, 'Comments on Fiction Award' in The Electronic Literature Organisation website
(online http://www.eliterature.org/awards2001/comments-fiction.php accessed 11/1105).

McQUAIL, DENIS, 2000, *McQuail's Mass CommunicationTheory, 4th Edition*, Thousand Oaks, Sage

MIALL, DAVID S. and KUIKEN, DON, 1994, 'Beyond Text Theory; Understanding Literary Responses' in *Discourse Processes*, Volume 17, 1994, pp 337-352 (online http://www.ualberta.ca/~dmiall/reading/BEYOND_t.htm accessed 24/02/03)

MIALL, DAVID S. and KUIKEN, DON, 1995, 'Aspects of Literary Response: A New Questionnaire', in *Research in the Teaching of English*, Volume 29, 1995, pp37-58 (online http://www.ualberta.ca/%7Edmiall/reading/index.htm accessed 24/10/02)

MIALL DAVID S., 1998, *The Hypertextual Moment*, (online http://www.ualberta.ca/~dmiall/Moment.htm accessed 16/09/2003)

MIALL, DAVID S., June 1999, 'Trivializing or Liberating? The Limitations of Hypertext Theorizing', in *Mosaic* Volume 32 Issue 2, pp157-172 (online http://www.umanitoba.ca/publications/mosaic/backlist/1999/june/miall.htm accessed 24/10/2002)

MIALL, DAVID S. and KUIKEN, DON, 1999, 'What is Literariness? Three Components of Literary Reading', in *Discourse Processes*, volume 28, 1999, pp121-138 (online http://www.ualberta.ca/~dmiall/reading/Literariness.htm accessed 24/02/2003)

MIALL, DAVID S., 2000, 'On the necessity of Empirical Studies of Literary Reading' in *Frame. Utrecht Journal of Literary Theory*, Volume 14, 2000, pp43-59 (online http://www.ualberta.ca/~dmiall/reading/necessity.htm accessed 12/12004)

MIALL, DAVID S. and DOBSON, TERESA, 2001, 'Reading Hypertext and the Experience of Literature', *Journal of Digital Information* (online dated 13/08/01, http://jodi.ecs.soton.ac.uk/Articles/v02/i01/Miall accessed 24/10/2002).

MIALL, DAVID S., 2003, 'Reading Hypertext – Theoretical Ambitions and Empirical Studies', presented to REDES group, University of Munich December 16th 2003. (online http://www.daf.uni-muenchen.de/DAF/PERSONEN/PEERDE/REDES/MIALL_Vortrag_Hypertext.pdf accessed 10/11/05)

MILLER, LAURA, 1998, 'www.claptrap.com' in *New York Times Book Review*, March 15th 1998 (online http://www.nytimes.com/books/98/03/15/bookend/bookend.html accessed 12/04/2005)

MOLLOY, JUDY, 1994, *L0veOne*, (online http://www.eastgate.com/malloy/welcome.html)

MOULTHROP, STUART, 1991, *Victory Garden*, USA, Eastgate Systems.

MURRAY, JANET H, 1997a, 'Digital Storytelling: Is It Art?' in *Synapse* (online http://hotwired.wired.com/synapse/braintennis/97/31/index0a.html accessed 27/02/03)

MURRAY, JANET H., *Hamlet on the Holodeck*, 1997b, Cambridge Mass., MIT Press

MURRAY, JANET H., 2001, 'When Stories Come Alive', in *Women's Review of Books*, Feb 2001, Volume 18, Issue 5, p11-12 (online via EBSCO Academic Search Elite, accessed 09/10/02)

MUYLLE, STEVE; MEONART, RUDY; and DESPONTIN, MARC, 1999, 'A Grounded Theory of World Wide Web Search Behaviour', in *Journal of Marketing Communications*, volume 5, pp143-155

NELL, VICTOR, 1988, *Lost in a Book - The Psychology of Reading for Pleasure*, New Haven, Yale University Press

NELSON, TED, 1981, *Literary Machines, 5th Edition*, self published

NELSON, TED, 2001, lecture given at Bournemouth University, UK

NIELSEN, JAKOB, 1989, 'The Matters That Really Matter For Hypertext Usability' in *Proceedings of the Second Annual ACM Conference on Hypertext*, New York, USA, ACM Press, pp 239-248

NIELSEN, JAKOB, 1990, 'The Art of Navigating Through Hypertext' in *Communications of the ACM*, March 1990, Vol 33, No. 3 pp 296-310.

NIELSEN, JAKOB, 1997, *The Use and Misuse of Focus Groups* (online http://www.useit.com/papers.focusgroups.html accessed 03/02/05)

NIELSEN, JAKOB and TAHIER, MARIE, 2002, *Homepage Usability – 50 Websites Deconstructed*, USA, New Riders

NIELSEN, JANNI; CLEMMENSEN, TORKIL; YSSING, CARSTEN, 2002, 'Getting Access to What Goes on in People's heads?: Reflections on the Think-Aloud Technique', in *Proceedings of the Second Nordic Conference on Human-Computer Interaction*, New York, USA, ACM Press, pp 101-110

PACE, STEVEN, 2003, 'A Grounded Theory of the Flow Experiences of Web Users', in *International Journal of Human-Computer Studies*, Volume 60, Number 3, March 2004, pp327-363.

PETERSEN, MARIANNE G., 1998, 'Towards Usability Evaluation of Multimedia Applications', in *Crossroads* Vol 4 issue 4 (Spring 1998) New York, USA, ACM Press pp 3-7. (online http://portal.acm.org/crossroads/xrds4-4/usability.html accessed 25/11/2004)

POPE, JAMES, 2006, 'A Future For Hypertext Fiction', in *Convergence*, Volume 12, Number 4, November 2006

PROTOPSALTIS, ARISTIDIS and BOUKI, VASSILIKI, 2005, 'Towards A Hypertext Reading/Comprehension Model', in *Proceedings of the 23rd Annual International Conference On Design Of Communication: Documenting & Designing For Pervasive Information*, pp159-166. New York, ACM Press

PUCHTA, CLAUDIA and POTTER, JONATHAN, 2004, *Focus Group Practice*, London, Sage

RICHARDS, I.A., 1924, *Principles of Literary Criticism*, London, Routledge and Kegan Paul

RICHARDS, I.A., 1929, *Practical Criticism*, New York, Harcourt Brace and Co.

RICHTEL, MATT, 1998, 'Making Web Sites More Usable Is Former Sun Engineer's Goal', in *New York Times* archive, July 13 1998 (online http://www.nytimes.com/library/tech/98/07/cyber/articles/13usability.html accessed 17/07/2006)

RYAN, MARIE-LAURE, 2006, *Avatars Of Story*, Minneapolis, University of Minnesota Press

RYMAN, GEOF, 1996, *253* (online http://www.ryman-novel.com/)

SAPORTA, MARC, 1962, *Composition No. 1*, Editions Du Seuil (edition cited 1963, translation by Richard Howard, New York: Simon and Schuster)

SELIG, ROBERT L., 2000, 'The Endless Reading of Fiction: Stuart Moultrop's Hypertext Novel Victory Garden', in *Contemporary Literature* Winter 2000, Volume 41, Number 4 (online http://www.jstor.org/view/00107484/ap040133/04a00040/0 accessed 26/09/02)

SKOPEE, DAVID, 2003, *Digital Layout for the Internet and Other Media*, Switzerland: AVA Publishing SA

SILVERMAN, DAVID, 2001, *Interpreting Qualitative Data*, London, Sage

SILVERMAN, DAVID, 2005, *Doing Qualitative research 2nd Edition*, London, Sage

SMART, KARL L.; RICE, JUDY COSSELL; WOOD, LARRY E., 2000 'Meeting the Needs of Users: Toward a Semiotics of the Web' in *Proceedings of IEEE Professional Communication Society International Professional Communication Conference*, and *Proceedings of the 18th Annual ACM International Conference on Computer Documentation: Technology and Teamwork*, pp 593-605, IEEEE Educational Activities Department, Piscataway, USA

STUDIO 7.5 (ZWICK, CAROLA; SCHMITZBURKHARD; PIENKOS, IMKE), 2002, *Navigation For The Internet And Other Digital Media,* Switzerland, AVA Publishing

THIMBLEBY, HAROLD, 2000, 'Permissive User Interfaces', in *International Journal of Human-Computer Studies*, Volume 54, Issue 3, March 2001, pp 333-350

THURY, EVA M., 1998, 'Analysis of Student Browsing Behavior: Implications for Designing and Evaluating Web Sites' in *ACM Special Interest Group archive, Proceedings of the 16th international conference on computer documentation,* pp265-270, New York, ACM Press.

TURNER, MARK, 1996, *The Literary Mind,* New York, Oxford University Press

VAN DJIK, RUTGER, 2005, *The Mobius Case*, unpublished

WALKER, JILL, 1999, 'Piecing Together and Tearing Apart: Finding a Story in afternoon', in *Proceedings of the Tenth ACM Conference on Hypertext and Hypermedia,* New York, ACM Press, pp111-117

WATT, IAN, 1957, *The Rise Of The Novel*, Chatto and Windus (edition cited 1977, UK, Penguin Books Ltd)

WENZ, KARIN, 1999, *Patterns of Hypertext and their Impact on Reading Activities* (online http://www.uni-kassel.de/fb8/privat/wenz/hypertext accessed 10/11/04)

WRIGHT, PETER C., AND MONK ANDREW F., 1990, 'The Use of Think-Aloud Evaluation Methods in Design', in *SIGHI Bulletin* January 1991, Vol 23 Number 1, pp55-57.

ZYNGIER, SONIA, 2003, 'What is Literature Really? A Corpus-Driven Study Of Students' Statements', in *Style*, Spring 2003 (online http://findarticles.com/p/articles accessed 03/03/2005)