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# Journeys through Narrative Space

## The influence of digital technologies on the contemporary experience of reading and writing

Sarah Haynes

**ABSTRACT**

This article explores the influence of digital technology on the practice of reading and writing. Acknowledging the act of reading on any medium as active and immersive, this article explores new possibilities to engage readers further in multimodal literary experiences and considers the roles readers and authors play in digital spaces. Through a history of hypertext and hypermediacy the inherent characteristics of digital technology and the possibilities for fiction that this technology affords is explored. The article proposes that the nature of digital technology engages readers as performers in narrative space and presents writers with the opportunity to author not just the text but the interface through which that is accessed. Multimodal texts can be presented through intradiegetic interfaces, fusing form with content. This shift in practice influences not just how readers engage with texts online but has made multimodal print-based works popular and more accessible too. For writers there are opportunities to author not just the content but also the form and challenges to face from a readership that wants to join in.

## Introduction

By examining how reading and writing practices have developed from print into the digital age this article identifies how changes to communication technologies have affected the experience of writing and reading. Borsuk declares that, "the story of the book's changing form is bound up with that of its changing content" (2018: 1). Leading the reader through a history of reading and writing, Borsuk explores the relationship between the form and content of text based media and notes that, "each medium's affordances – the possibilities for use presented by its form – facilitate certain kinds of expression" (Ibid). She credits technology with playing an influencing role (although by no means the only influencing factor) on the development of writing, noting that it "is influenced by the technological supports that facilitate its distribution" (Ibid: 3). The tools, with which texts are produced, distributed and consumed, affect what might be authored and how it might be read. Weedon et al assert that, "It is necessary to continuously review the definition of the book moving from one bound by its material form to one determined by its function as a means of communication" (2014: 108). This corresponds with Borsuk's work, which shows that throughout the history of what may be termed *the book* there have been material variations in the way that the content has been presented and these in turn have influenced its f*unction*. Today's texts, presented online, on mobile devices and in multimodal contexts test the boundaries of what might be termed a book, challenging notions of authorship, ownership and relationships between readers and authors. Weedon et al note, "as our social interactions are changing with new communication technologies, so is the book" (Ibid: 121).

## Technologies and practices of reading and writing

The development of reading can be traced from ancient times, when reading aloud or telling stories was the norm, when few were literate and a reader was a performer of text for others. At this time narratives were shared, communal activities. The more recent concept of being 'immersed' in a book, an object that affords an individual, private experience, precedes the contemporary habits of reading on screens. Alberto Manguel recounts how Saint Augustine described encountering Saint Ambrose reading, "When he read," said Augustine, "his eyes scanned the page and his heart sought out the meaning, but his voice was silent and his tongue was still. ... for he never read aloud" (1996: 39). Manguel recognizes this reading style, an internal, individualized process, unusual at the time for Saint Augustine, but commonly witnessed today. Borsuk notes that, "reading had been, since the Hellenic era, an oral practice … written in continuous script …withoutspacebetweenwords or changes of case and minimal punctuation. They both required and rewarded sounding aloud" (2018: 54). The technology of these manuscripts, their form, dictated their use in practice. They were designed to favour, and reflected the fact, that they were read out aloud. Borsuk relates the story of the book and how "the Renaissance inaugurated the age of books" (Ibid: 61). With the invention of print new reading practices developed, individual, introspective, which Borsuk notes gave rise to an "increasing intimacy between individuals and texts" (Ibid: 83). Manguel describes this practice of silent reading, as it became the more dominant practice:

> with silent reading the reader was at last able to establish an unrestricted relationship with the book and the words… while the reader's thoughts inspected them at leisure, drawing new notions from them, allowing comparisons from memory or from other books left open for simultaneous perusal.
>
> (1996: 48)

This immersion in reading, the active engagement in deciphering texts in relation to individual experience, imagining characters, enacting the plot in a location conjured in the mind's eye, is an act of introspection. This practice of internalizing, imagining along with the text, affords participation in a fictional world, inspired by the author yet unique in each reader's individual interpretation. Calvino writes about relationships between readers, writers and texts in the novel, *If On A Winters Night A Traveller.* He conjures up the act of reading, the pleasure of bringing to mind a fictional world prompted by the author's manipulation of the reader's imagination, and the resulting experiences that are both at the same time individual and shared with others. The novel instructs us to bring to mind being in a train station and suggests, "all of this is a setting you know by heart" (Calvino 1998: 11). Triggered by prompts in the text, readers picture a station, each version of the station unique, delivered by each individual's experience of railway stations. Reading then is an active collaboration between the reader and author, as Mendelsund reminds us, "a novel invites our

interpretative skills, but it also invites our minds to wander" (2014: 294). Reader's imaginations are triggered by the text but are spurred on to unique and individual experiences.

**The characteristics of digital technologies**

In digital domains swiping the screen or clicking the mouse replaces opening the cover of a book, the turning of a page. Reading becomes fluid, multi-faceted and virtual, no longer ink fixed on paper but windows opening onto a plethora of content related to or remote from the text being read. Not only is the individual texture, weight, smell and patina of the book replaced by the constancy of the device's operating system but this space is also shared with all other network activity. Users do not put down the pen and pick up the page to read. They scroll and click, swipe and select when reading and writing. Not only is their attention diverted, they constantly shift modes between reading, writing, watching, listening, searching, retrieving and sending.

In his seminal article, *As We May Think,* written for *Atlantic Weekly* in 1947, Bush proposed a method to deal with the world's increasing information overload. The *Memex* machine allowed readers to create connections between sets of information. The proposed device, fed by microfilm, would contain vast swathes of encyclopedic knowledge that users could plot pathways through, using what Bush termed, "associative indexing" (1947: 7) which he identified as a natural tendency, connecting idiosyncratic patterns of information.

This concept was influential on digital pioneers such as Nelson, who coined the terms, "hypertext" and "hypermedia", to describe text and media linked associatively. Nelson believed, like Bush, that any system of information storage and retrieval needed to be aligned to human thought processes, which were not linear, nor sequential. Nelson proposed, "*The structure of ideas* is never sequential; and indeed, our thought processes are not very sequential either" (1987: 16). His vision was to develop a shared library of human knowledge, The *Xanadu Project*, in which *tributaries* of information would flow, constantly being added to rather than fixed in print, not frozen at the point of production as the texts of previous generations had been. In his text, *Literary Machines*, Nelson expanded on this idea, "in hypertext we may create new forms of writing which better reflect the structure of what we are writing *about*." (Ibid) In other words, text need not be bound by the conventions of print but could be presented through interfaces that were appropriate to content, not necessarily linear, nor sequential.

Nelson used the term *intertwingled* in his earlier writings, *Computer Lib/Dream Machines* in 1974 to express the idea that everything could be interconnected and that by freeing sets of information, data or text, from the confines of their pages they could be placed in new contexts. Text could be combined and juxtaposed in a myriad of combinations according to the pathway chosen by the reader online and in the context of the content. In contrast, writing on paper, is of necessity linear, with one word following another in order to make sense. Reading, on the other hand, even on paper, Nelson proposed, isn't necessarily linear because thought processes are not linear. Mendelsund notes, "If fiction were linear we would learn to wait, in order to picture. But we don't wait. We begin imaging right out of the gate, immediately upon beginning a book" (2014: 52). He proposes that in actively deciphering the text and conjuring the images of a text in their mind's eye, readers are engaged, not just in the present text they are reading but are thinking back to what's gone before and anticipating what will happen next. He writes of "polydimensionality" (Ibid: 61), in which the reader is in their own physical space yet also cast into the world they imagine of the novel. "The eye saccades around the page…I am picturing something from one part of the page as I am gathering information from another" (Ibid: 103). The act of reading Mendelsund describes is simultaneously inquisitive and acquisitive as readers seek out knowledge of characters, locations and plot and store and retrieve information at relevant points in their own personal meaning making. "Past, present and future are interwoven in each conscious moment – and in the performative reading moment as well" (Ibid: 108). For Mendelsund and Nelson this concept of reading is not only associative but implies a spatial structure, polydimensional, to be traversed. Readers actively construct meaning by a series of connected parts. These concepts of associative linking to construct a larger picture from the sum of a selection of parts are principles that, one might argue, have been revolutionary in the architecture of the Internet and the ways in which people write, share and receive texts online. In patterns that are better conceived of spatially as opposed to sequentially. These ideas are not exclusive to the digital realm, Mendelsund applies them to the experience of reading print, rather this

recognition, of the way that we read and think, was influential in the formulation of digital tools. Nelson saw the potential for computer text to become free of sequentially, having no need to be bound in a book.

He posits here,

> sequentially is not necessary. A structure of thought is not itself sequential. It is an interwoven system of ideas (what I like to call a structangle). None of the ideas necessarily comes first; and breaking up these ideas into a presentational sequence is an arbitrary and complex process.
>
> (Nelson 1987: 14)

This reference to the "structangle" points to the spatial dimension of digital technologies, the structure of digital code affording an approach to texts as relational and therefore capable of being conceived of as nodes in space, rather than words lined up in a sentence.

**Journeys through textual space**

In approaches to digital screen-based media there persists the notion of space, a virtual realm. William Gibson first coined the term 'cyberspace' in 1984 in his novel *Neuromancer* to name the computer system that Case, his protagonist, jacks into. Like Bush and Nelson, Gibson drew upon the connection with neural networks to envision how this fictional technology worked. He conjured for the reader a shared space that users connect into and, in this description, cyberspace became an environment to be explored. In the early days of the Internet spatial metaphors abounded in the language used to make these new tools accessible, 'Internet Explorer', 'Netscape', users were invited to navigate pages and Microsoft's 1994 advertising campaign asked, "Where do you want to go today?"

The technology, and this perception of it, affords what Manovich refers to as, "spatial wandering" (Manovich 2001: 49), discovering texts laid out in space. Bolter, posits that, "we tend to conceive of hypertext spatially: the links constitute a path through a virtual space and the reader becomes a visitor or traveller in that space" (1991: 29). In these perceptions of the digital realm as space readers become wanderers, travellers seeking knowledge. Borges explored the notion of wandering in pursuit of knowledge as an end in itself, in *The Library of Babel,* presenting the journey through texts as more important than any particular text. His words, although in a story first published in 1941, are prescient of the Internet today. He writes of the *Library of Babel* as an infinite library that it would be impossible for any man to work his way through in a lifetime and of unfathomable proportions. "There was no personal or world problem whose eloquent solution did not exist in some hexagon" (Borges, 1962: 82). To find texts he instructs, "To locate book A, consult first a book B which indicates A's position; to locate book B, consult first a book C, and so on to infinity" (Ibid: 84) but he warns, "For every sensible line of straightforward statement, there are leagues of senseless cacophonies, verbal jumbles and incoherences" (Ibid). Contemporary users read dispersed material on line, much of which is irrelevant to their initial intention, a passing distraction, but that experience, taken as a whole, has direction and coherence. Meaning is constructed by making associations between disparate texts. Meaning is found by journeying through the network as Borges' librarians did and in finding not just the sought after content but other serendipitous treasures on the way.

These reading habits: of journeying through diverse texts, extracting information, making connections between items, serendipitously discovering, describes the contemporary experience of the Internet user. Jenkins refers to this participatory audience as "informational hunters and gatherers," (Jenkins 2006: 138) believing that the experiences presented in the converged network environment demand an active participation to seek out the texts and that there is pleasure to be had, and satisfaction in finding, and sharing, material. He writes, with regard to transmedia storytelling, about the practice of discovering a narrative, reading text distributed across platforms, and cites Electronic Arts Games developer, Neil Young, who identifies, "additive comprehension," (Young cited in Jenkins 2006: 123), as a means to "shape our interpretations" (Ibid). In this process the audience pieces together information and builds their understanding of a narrative. This ability, to offer opportunities to build knowledge across media platforms that the hypermedia environment of network media presents, provides a different reading experience to that of perusing a book, in which everything is presented, bound within a cover. The ability to read multiple windows in one screen simultaneously, to look up a word, fact or place, whilst still in the same screen as a fiction, or to find images or music associated all in the same device, expands the experiences with which we

might engage, to access components of a transmedia project distributed across diverse platforms. There are possibilities for transmedia work to lead users to choose a level of engagement to match their level of interest or amount of time available to them.

In the Augmented Reality (AR) project, *Sherwood Rise* (Weedon, Miller, Moorhead) readers were provided with content depending on their level of interaction, not just through choosing not to access parts of the content but, as content was sent via email, the narrative system measured users activity and, "the edition of the newspaper the reader received depended on how much they had actively supported or helped Robin, the protagonist" (Weedon et al 2014: 118). In *Sherwood Rise* we can observe the concept of "additive comprehension," (Young cited in Jenkins 2006: 123) as readers, through the use of AR, access layers of meaning with alternative stories to the news stories they have been sent, literally layered on top, like a palimpsest.

In the contemporary network environment readers can choose the order in which they read texts, what level of engagement to invest in and have developed habits of reading more than one text simultaneously, thus multitasking (i.e., a user may have a news website open, as they simultaneously watch a YouTube video, with social media running in the background). It is these user behaviours that present new opportunities for writers to develop multimodal environments for readers to explore and construct meaning through their travels in story spaces.

**The interactive reader in multimodal fiction**

Although digital technologies allow for a level of database interaction that would not be possible in print, there is a tradition of multimodal and non-linear printed fiction that offers insights into multimodal reading experiences. Despite being a printed book, *S,* (Abrahams and Dorst 2013), provides an example of an interactive text that offers a multimodal, spatial experience for the reader to explore. It might be argued that books such as *S* would not have been so well received by previous generations of readers more used to the linear flow of a single narrative. Nor is it any surprise to find that experiments with non-linear narrative forms from the 1960s, by authors such as Marc Saporta and B.S. Johnson, have recently been reprinted and have found popularity, as readers find these texts more easily approachable being used to dispersed, nonlinear reading experiences online.

In *S* Abrahams and Dorst use notes in the margins left by other readers to tell a story parallel to the fiction in the book. The characters in *S* include two fictional readers, and their relationship with each other, the characters in the narrative written by an author and the footnotes written by the translator, a fourth voice. The fictional readers are sharing their interpretations and in doing so break down the barriers to their own private experience and develop a communal approach to deciphering what is happening, which they also share with us, the third reader. This echoes the practice of reading online or a digital device where users might leave comments for other readers to see, sharing their ideas with other's simultaneously to their reading.

The experience of reading *S* also recalls the nonlinear, hypertext writing one might find online. The reader has a choice of how to read, where to begin and how to proceed. An option is to read the text of the book completely and then return to the notes in the margins or to read each page's text and notes and anything loose that falls out from between the pages, as postcards, invoices and other loose papers are inserted in the book. Many readers will choose to not read everything, to skim through this letter or those notes, to miss footnotes or postcards.

Lynch et al propose, "Novels such as *S.* …highlight the influence transmedia storytelling is having on the way writers can approach the novel, not just as a form, but as a media object – one that relies on, but is not restricted to, its text-centric modal capacity" (2017: para 21). *S* communicates not only through the text on the pages of the book. It is presented as a library book, this *form* contributing to the fiction alongside the narrative content. Lynch et al employ the term "iterative representation" to describe how example text and digital projects use multimodality to communicate a storyworld through artefacts and the viewpoints of multiple characters. This process iteratively builds a storyworld and presents a multifaceted narrative that may include complexities and contradictions.

The reader develops an understanding of the narrative world, characters and stories by piecing together and weighing up information from various sources. In *S* readers are presented with an experience that has a random nature, with items inserted between pages without immediate relevance to the text but which build an atmosphere, provide a tactile experience and, for the most forensic of

readers, provide information pertinent to the text. Through the collection of material presented in this library book characters show themselves and comment on each other and the text and in this way build the story, which the reader must decipher through interpretation of the evidence, weighing up the comments of the characters in the margins with the artefacts and the footnotes.

The characters reveal themselves not just in description but literally in their handwriting, their choice of pen and the world is brought to life as if by several voices, the author, the translator and the two readers. The fiction has an overall conceit, like an interface, which encourages the reader to believe that this is a library book with notes in the margins left by two students. Without this how would it be possible to explain the way to approach the reading of these texts? *S* therefore is accessible to readers, informed by the interface, which extends this book to be specifically a library book with notes added and items left tucked inside by previous readers. This reading style requires an active commitment from the reader to search and make connections and offers differing levels of engagement with the multiple plots; the novel, *Ship of Theseus*, the footnotes of the novel, the multitude of postcards, letters and documents inserted throughout and the conversations of the two readers in the margins. As readers will read these media in varying orders, inevitably skipping items here and there, they will have a unique reading experience and will create their own patterns of meaning by accessing the information in a variety of orders, potentially spurring differing patterns of connection. The binding element of these distinct and separate reading experiences is the central premise, the interface metaphor, which is, that this book is a library book that others have deposited information in that reveals a plot that extends beyond *Ship of Theseus*, associated with the author and translator.

Mendelsund identifies the role of the author in unleashing and prompting the reader's imagination, but in ways that limit speculation. Readers are not left to ponder all possibilities but are managed to think and explore in set directions. Mendelsund asks, "What is the author's role in hemming in the boundaries of our imaginations?" (2014: 224) and in answer cites Barthes, "to give a text an Author is to impose a limit on that text, to furnish it with a final signified, to close the writing… The reader is …simply that someone who holds together in a single field all the traces by which the written text is constituted" (Ibid). So, although *S* presents a complex interweaving of texts that not all readers will read in their entirety, all of the artefacts contained in *S* are provided with a signification as items in a library book and this 'boundary' allows for exploration within that parameter.

In BS Johnson's *The Unfortunates (1969)* Johnson sought to convey the "mind's randomness", (Johnson cited by Coe 1999: ix) through the presentation of text randomized in a box. The narrative is "what was taking place on the 'inside of his skull'" (Ibid) one Saturday afternoon as he reported on a football match in the city where he had in the past visited his friend who had died of cancer. The text weaves memory with the present activity of reporting the match. The idea behind the novel was to present the work as sections in a box to be read at random, an attempt to convey the truth of the process of memory that Johnson experienced. There is a first and last section and twenty-five sections in between to be read in any order. Due to economy the Hungarian version was printed as a bound book with a preface by Johnson that suggested that readers cut out or copy the sections and make their own random order, so that they did not miss, "the physical feel, disintegrative, frail, of this novel in it's original format; the tangible metaphor for the random way the mind works" (Ibid: xii). In this work the reader is invited to not only read about the memories that occurred to Johnson on that Saturday but to experience them as the moments of consciousness that they were.

In Marc Saporta's *Composition No .1* (1962) the reader works through 150 unnumbered pages presented loose in a box at random to access a fragmented narrative. Published in 1962 this work presents snatches of narrative that deal with war, rape, car accidents and cancer, with characters recurring in events that unfold without order. The work reflects a particular state of mind and places the reader within that chaos. There is an anxiety in stumbling, randomly, across these violent incidents. Tom Uglow, in his introduction to the 2011 Visual Editions publication of the book, writes of the "disconcerting…sensation" of the loose-leaf pages. This is entirely apt. This collection of incidents, from which the reader derives meaning, offers an overarching narrative of random violence and chaos in post war Europe. It is difficult to make sense of and this confusion is not confined in the

bindings of a book. It is a sharing of consciousness, of a troubled mind. The discomfort the reader feels in the loose-leaf pages is by design. Uglow goes on to write of "a world where form augments content rather than defines it" (Ibid). In these instances of non-linear multimodal fiction we see work where the form provides a context for the content that leads the reader's understanding of the text in an experiential manner. The form and content designed to work together. The presentation of these text-based works communicates the themes of the text in their presentation and, as noted by Lynch et al, "the narrative is enriched not just through a mixture of representations, but through a mixture of ways of representing" (2017: para 30).

In the examples presented here of multimodal and nonlinear literature the reader seeks to find and create meaning, connecting aspects of narrative. Encouraged and led by the representations, the methods of presentation contain clues as to how readers should approach these texts. It is a practice made common by browsing online but is not exclusive to the digital realm. It is an attempt to bypass the formal conventions of the linear book that force an order on content. "It is the audience – the readers, the viewers, the 'manipulators' – who do the actual world building," note Lynch et al (2017: para 31). They also argue that "Multimodality can therefore be seen as a conceptual tool, used by writers to represent, subvert and construct their subjective storyworlds" (Ibid). This practice then leads the audience to perform an active role, to participate, to find meaning and uncover the plot for themselves. The interface, the library book, the randomness of memory, leads readers to approach their reading with a logic that provides a particular perspective; library book borrower, experiencing random recollections, piecing together disturbing fragments of memory.

**Explorations of digital narrative spaces**

In common with works of multimodal fiction in print, interactive digital narratives (IDN) also offer, through interfaces, a system of logic to guide readers, fusing form with content. However, the nature of digital technology engages readers to interact in narrative space and presents writers with the opportunity to author not just the text but the interface through which that is accessed, designing actions for readers to perform in order to discover the narrative. Readers on digital devices are not in the habit of reading sequentially and the perception of digital space and metaphors of digital as space are pervasive, leading readers to consider themselves as moving through the digital environment with a freedom not possible in printed texts, 'even novice web users conceive of themselves as actively moving on the web under their own steam'.( Maglio and Matlock quoted by Thomas :1144) Habits of reading linearly on paper, by contrast, have a long history, bound up with the technology of the form. 'The sequentially of text is based on the sequentially of language and the sequentially of printing and binding. These two simple and everyday facts have led us to thinking that text is intrinsically sequential' (Nelson 1987:14). This predisposes reader's expectations and behaviours when encountering printed text. For example, readers of the print version of Saporta's Composition Number 1, The Literary Platform noted, 'were reluctant to shuffle the pages of the physical book – that somehow shifting the order of the pages was sacrilege. The iPad app edition of Composition No.1 leaves the reader no choice.' With the app forcing the reader to stop shuffling pages and hold a page down to read it. This interaction and the ability to explore through using drag, pinch and swipe gestures engages the reader in a swirling chaotic interface, which they can only read through their interaction. It is this physical interaction through a computer interface, a space that defines for the reader the interactive possibilities, I propose, that alters the relationship between the reader and the text, allowing the reader to enter the text. To clarify,

> Entering the narrative now does not mean leaving the surface behind, as when a reader plunges into an imaginative world and finds it so engrossing that she ceases to notice the page. Rather, the 'page' is transformed into a complex topology that rapidly transforms from a stable surface into a 'playable' space in which she is an active participant.
>
> (Hayles 2008:13)

It is the transformation of the text into a digital environment that can be interacted with, which transforms the reader into a performer in the narrative space. Not only does the reader of IDN operate through intradiegetic interfaces in roles defined by the text but because digital texts are presented in a spatial context, with interconnected narrative nodes, they also call for readers to perform in the narrative, to move in the narrative. Koenitz et al propose that, the aim of interactive

digital narrative, "is the age-old dream to make the fourth wall permeable; to enter the narrative, to participate and experience what will unfold" (2015: 1). Although, as previously shown, multimodal texts can exist as print based works, computers add new dimensions, being able to place texts in complex patterns to be discovered through an experience that enhances the discourse, placing the reader in an environment, casting them in a role in relation to the text, dissolving the fourth wall. For example, in *Disappearing Rain*, (Larsen: 2000), a hypertext novel, the reader is immediately introduced to the scenario that Anna is missing and that her sister Amy has found computer files that may shed some light on her sister's disappearance. The scene is set, and the interface casts the reader in the role of someone searching for Anna, just like her family, using the familiar territory of searching online in a fictional computer space that allows access to this character's life.

In IDN readers have agency in relation to the text by deciding which direction to take the narrative in through the selection of where to read next, although of course this is limited to the confines of what has been coded. This agency is embedded in the narrative experience, possibly occurring through the performance of an action, opening a file in a simulated computer space like *Disappearing Rain* (Ibid), for example, or exploring a pathway leading from a particular word choice that may seem random. This performative nature of reading a hypertext is highlighted by Joyce, the author of the acclaimed hypertext, *Afternoon* (1994), cited here by Travis. 'In his instructions to the reader, Joyce writes, "The lack of clear signals isn't an attempt to vex you, rather an invitation to read either inquisitively or playfully and also at depth. Click on words that interest or invite you" (Joyce quoted in Travis 1996: 121).

This agency alters the relationship between reader and author, providing the reader with more autonomy to move through the narrative space to explore and to interpret the findings of those explorations according to their own experience and the order in which they have proceeded through the text so far. Koenitz et al note that,

> The IDN vision is as much about narrative and control as it is about balance. Indeed, the quest for the right artistic measure, for equilibrium between agency and a coherent, satisfying experience, might be the ultimate challenge of the field.
>
> (Ibid)

The challenge, in the field of interactive narrative, is in coding the reader's ability to interact, to navigate a text, within the intradiegetic interface, so that the interaction is seamless with the storyworld. Readers become users with choices and permissions to access texts according to those choices. This might not lead to the most satisfying, dramatic or comedic way to proceed. Of course the reader of a printed text is always at liberty to start on the last page or to leave a book unfinished. However the challenge of IDN is to present choices to readers in a way that enhances the text and leads to a logic (even if the logic is randomization) that enhances the experience and doesn't, as Joyce says, "Vex" the reader, isn't used as a gimmick but adds a dimension to the experience. Inherent in this technology is the opportunity for communication between reader and text that means that each reader could have a unique experience. "The reader provides the only center hypertext can have, with the center changing in each reading" (Travis 1996: 117). The danger inherent here is that the reader misses sections and has, as a result, an impoverished narrative experience.

Joyce's *Afternoon* (1994) consists of 538 lexia providing not only different pathways through the narrative but different narrative events. Therefore the choices the reader requests from the system result in particular instances and provide unique reader experiences. Murray, "notes that digital media is inherently procedural and participatory, … IDN bestows co-creative power on its users through interaction" (Murray quoted in Koenitz et al 2015: 185). These choices that users make provide them with an agency in the narrative, "turning readers into participants, which Murray terms interactors" (Ibid).

In early hypertext fiction (HF) the interaction offered choices in a branching narrative. In *Afternoon* (Joyce, 1994) the choices are aspects of the narrative. When reaching a fork readers split off on differing trajectories. Other early hypertext work allowed readers to explore the story through categories, in *Sunshine '69* (Bobby Rabyd, a.k.a. Robert Arellano, 1996) for example, users could access text aligned with particular characters, locations, music and a calendar of events. In Shelley's *Girl* (Shelley, 1995) the interface is a map of the woman's body. Koenitz et al note that a "design strategy in HF is in the

equivalence between content and structure" (Ibid: 13). The interface through which the narrative is accessed is also part of the narrative. The illusion that text is attached to a point on a map is also a part of the fiction of the work and the reader is, in making the selection, just triggering a piece of code that calls up the specific text item, but in terms of the storyworld is accessing content on a map.

Koenitz et al also note that:

> HF relies on the principles of segmentation and linking, as authors produce screen-sized segments, or lexias, and connect them with different types of hyperlinks. Interactors traverse the story by selecting links, unveiling new lexias, or returning to the ones already visited.
>
> (Ibid: 13)

Unlike fiction in print, whereby the reader accesses the text through the interface of pages bound in a book (generally), authors of digital fiction can utilize the interface to create logic for their fiction. For example, the hypertext *Sleepless* (Theodoridou 2017) through intradiegetic interaction presents a dreamlike scenario that draws readers into a world where people have stopped sleeping. This *what if* scenario is immersive and the whole project represents insomnolency, provoked by flickering screens catching our peripheral vision, fragments of sound and shifting texts that invite selections from us through piquing our curiosity but in a way that feels like the first stirrings of consciousness on awakening rather than logical choices. This project, I would suggest, offers immersive interaction through its interface by virtue of the integration of the interface (through which the reader makes choices) with the narrative intent.

*Gone Home,* (The Fullbright Company 2013) an interactive fiction, in contrast to *Sleep,* a hypertext*,* involves the reader in a more procedural interaction to search an empty house to discover what has happened to the reader's fictional family. This narrative is presented in an immersive 3D environment that offers the reader an interactive role as Katie, who has returned after a year away, to her family, who have, in the meantime, moved into a new house. This project is presented as a virtual environment that the user navigates through. She/the reader arrives at the house to find the door locked and, having searched for and found the key, enters the house and searches for the missing family, reading clues in various documents stumbled across in drawers and on tables in the different rooms of the house. The intradiegetic interface is a house that the user moves through and the logic, which the reader applies to uncover the plot, is to search the house, however the narrative is still largely delivered by text that the reader finds.

Equipped with a backpack to gather evidence and a map of the house, this narrative proceeds like a puzzle, though many of the clues are text-based and the reader is searching for pages that are given context and imbued with meaning by the way in which they are found. Text on paper discarded in a bin leads the reader to imagine this was something not meant to be read. The interface therefore adds other layers of meaning to the text. The finding of text is also a pleasure of this work. The "hunting" of texts leads to satisfaction and narrative rewards. The reader is immersed in this environment, cast as a character (Katie). The unfolding of the narrative is by their action, their journey through the house. They have agency as a character in the plot to uncover the truth of what happened to Katie's family. Unlike a game the final reward in *Gone Home* is to complete the narrative rather than win. As Hayles notes, "With games the user interprets in order to configure, whereas in works whose primary interest is narrative, the user configures in order to interpret." (2008:8) The reader plays the role of Katie in order to reveal the story and the end goal is narrative closure.

Each room visited in *Gone Home* not only provides a building block in the narrative, but also augments the storyworld, and unlike a printed text, affords the reader an exploratory experience, gathering impressions of the house and the characters who live there as well as developing narrative progression.

In both *Sleepless* and *Gone Home* the intradiegetic interface, and interactions in the space defined by that interface, offer readers a level of immersion. Through inviting participation, the interfaces of these texts immerse the reader, as another insomniac in *Sleepless* and as Katie in *Gone Home*. The performance of these interactions progresses the narrative but also provides a context and a point of view.

Zaluczkowska identifies that immersion and interactivity do not amount to the same thing, that fiction has always had the power to be immersive, but that interactivity may aid immersion, that, "providing an opportunity to interact is certainly one

of those practices in that once a person has invested in the idea and contributed to it, the idea becomes harder to turn off or leave" (2018).

It is this interaction in a spatial dimension that separates IDN from print based experiences. It calls for writers to author not just the text but the experience that is offered to the reader, to create a space which not only makes the work accessible but is also meaningful itself, providing a context to signify to the reader the logic of the structure and their role within it.

**The roles of readers and authors in a participatory culture**

Digital technologies I propose have created audiences who sit forward ready to scan, skim, swipe and click; who seek interaction. Rose identifies that this change in audience expectation is not just since the digital age, "simultaneity as the salient fact of our culture long predates the Internet. It was television that got people acclimated to the idea – especially after remote controls started to proliferate in the seventies" (2011: 119). This desire for interaction is not just about choice and selection, these readers want "to carve out a role for themselves, to make it their own" (Ibid: 8).

The reader of today is mostly a person who also writes. They tell their own stories on social media (360 million users write on Facebook according to Facebook Newsroom, 2019), they blog, vlog and are more likely than ever to have their own creative output (80 Million writers produce content on Wattpad according to Wattpad, 2019). Since the advent of Web 2.0 in 2005 there has been a huge outpouring of creative work by ordinary people. A culture not of published work and broadcast material but work produced in bedrooms and studies, in spare time or spin offs from school, college or night school courses. Kelly proposed that everyone will, "write a song, author a book, make a video, craft a weblog, and code a program. This idea is less outrageous than the notion 150 years ago that someday everyone would write a letter or take a photograph" (2005).

The "global villag"' McLuhan had foreseen was one that everyone would join. McLuhan ends the *Medium is the Massage* with a cartoon from the *New Yorker* magazine, of a boy in his father's library explaining to his father that, "Now, with TV and folk singing, thought and action are closer and social involvement is greater" (McLuhan 1967:158). We now have the generation who want to sit forward and participate and the challenge is what narrative experiences might be offered that engage these readers as participants. Weedon reminds us that, "storytelling was originally a folk art, and it is again now that we can tell stories on Instagram, Snapchat, and Facebook and through the multitude of apps for the mobile which allow the user to combine photos, audio, music, and video" (2018: 51). That in the digital era there is a role for us all as storytellers.

Rose identifies the cultural shift and change in balance between authors/ producers and readers / consumers:

> In a command-and-control world, we know who's telling the story; it's the author. But digital media have created an authorship crisis… An author can still speak to an audience of millions, but the communication no longer goes just one way.
>
> (Rose 2011: 83)

Zaluczkowska embraces the audience's desire to participate in these new story spaces, rather than seeing this as a crisis. She identifies that, digital platforms, "necessitate new ways to engage and respond to audiences who want to belong to the worlds we are creating" (Zaluczkowska 2018). That it is incumbent on writers to find ways to satisfy the contemporary audience.

**Conclusion**

It seems evident that "each medium's affordances … facilitate certain kinds of expression" (Borsuk 2018: 1) and that digital technologies, by their nature, and the Internet in particular, present new spaces for narrative experiences that are non-linear, structured according to context and call for multimodal reading and writing. These technologies enable writers to author the form, to create intradiegetic interfaces, through which readers can engage with their work. In doing so authors can design narrative environments that invite users in, to explore and interact, satisfying a readership that want to participate, creating narrative spaces for readers to journey through.

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## About the Author

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Sarah is currently working on *The People's Compendium of Plants for a Virtual Garden* (https://www.thevirtual-garden.com/), a compendium of plants. Readers are invited to contribute their own specimens of writing to this site that proposes new taxonomies with which to consider plants.

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