

THE UNIVERSITY OF WINCHESTER

Faculty of Arts

The Literary Web: A textual transmission model of readership
and hypertext

Simon Peter Rowberry

Doctor of Philosophy

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This Thesis has been completed as a requirement for a postgraduate research
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ABSTRACT FOR THESIS

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Since the turn of the millennium, hypertext (most popularly known as links on the World Wide Web) has become a banal part of our everyday life and has been largely neglected in scholarly discourse. As digital textual media becomes more versatile and re-usable in a variety of contexts, hypertext once more has become an important facet in digital design but this time as part of the reception of text rather than a foundational part of the text's composition. The current project proposes a framework for understanding the recent transformation of hypertext through the Literary Web hourglass model, which posits that hypertext does not exist as a textual artefact, but rather as a trace of the processes of composition and reception. The Literary Web offers a toolkit for the analysis of literary texts through both a book historical and close reading perspective. This is demonstrated through a reading of Vladimir Nabokov's *Pale Fire*, a foundational work of hypertext fiction. Through reference to some playful examples of contemporary digital literature, termed the hypertext circus, the current project concludes by suggesting ways in which receptional forms of hypertext can be used to create a more open and creative form of hypertext.

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Colophon

The text is set in Garamond 11pt with hyperlinks in Gill Sans MT. The occasional Cyrillic text appears in Times New Roman. Titles are in Arial and table text appears in Helvetica. These fonts have been chosen for readability in print and to create a visual contrast for links that is not diminished when printed in black and white.

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Date: 27 February 2014

Introduction

The early twenty-first century has the deceptive appearance of the Golden Age of digital media. Literature, film, music and a host of other cultural artefacts are being consumed digitally more voraciously with every passing year and the wealth of mass digitisation projects currently underway perpetuates the belief that if it does not exist online, it probably does not exist at all. The major humanities research funds of both the United States (National Endowment for the Humanities) and United Kingdom (Arts and Humanities Research Council) are investing unprecedented amounts of money into research on and around these platforms.¹ This is reminiscent of the euphoria surrounding hypertext, most popularly understood to be a linking mechanism such as the hyperlink on the World Wide Web in the early 1990s, but digital humanities dwarf it in size.² While the quest for new and unexplored digital territory continues in the context of the humanities, hypertext is considered “finished” and a historical relic, associated with the naïve days of virtual reality, multimedia CD-ROMs and Dot-Com bubbles. Research into technology can fall into the trap of the constant search for innovation at the expense of historicisation that would ground beliefs and theories.

This dissertation argues that this trend should be reversed. Although hypertext has been normalised and become a part of everyday life as the connective tissue of the Web, close analysis of hypertext scholarship can produce useful methodologies for understanding the cutting-edge of cultural studies, both physical and digital. Through the development of a new model of hypertext, this thesis will demonstrate that hypertext is not an artefact within a text, but rather emerges from the processes of its creation and reception. This has significant repercussions for hypertext scholarship and design as (1) the processes of composition and reception produce different forms of hypertext that should not be confused; (2) any explicit marks of hypertext within a text are the result of the text’s creation or reception, rather than a part of the text’s ontology; and (3) we need a new framework and vocabulary for hypertext that extends into the field of receptional hypertext. Although there has been a shift towards aspects of this methodology in hypertext design over the last decade, this new form of hypertext is under-theorised and requires an updated vocabulary.³

The current project offers this framework for a revised theory of hypertext as an aspect of composition and reception. In order to build a new model of hypertext, it is necessary to

¹ National Endowment of the Humanities, “Office of Digital Humanities,” 2013, <http://www.neh.gov/divisions/odh>; Arts & Humanities Research Council, “Digital Transformations,” 2013, <http://www.ahrc.ac.uk/Funding-Opportunities/Research-funding/Themes/Digital-Transformations/Pages/Digital-Transformations.aspx>.

² N.B. Hypertext, and other terms, will be defined at greater length at the end of the introduction and in Chapter One.

³ Eastgate System’s *Tinderbox* software, the gestures central to tablet computing and some contemporary hypertext fictions point towards this future.

reconsider traditional hypertext theory and assess its strengths and flaws. These theories were developed before the mainstreaming of hypertext through the Web in the mid-to-late-1990s, and the last decade has seen an accelerated shift towards social networks, linked data and the sociology of things. These developments have been accompanied by the discourse of a continually evolving Web in the form of Web 2.0 (“the social web”), Web 3.0 (“linked data” or “the Internet of things”) and so forth that has “heightened awareness of the interactive qualities ascribed to the Internet.”⁴ The models developed by George Landow, Jay David Bolter, Michael Joyce and other early hypertext theorists do not sufficiently cover the developments of contemporary hypertext systems such as Twitter and the affordances of modern browsers.⁵ As types of connections proliferate and new forms of hybrid hypertext emerge, models such as the Literary Web, the new theory proposed by the thesis, will become more important in order to understand the revitalised importance of hypertext scholarship and design in the future of digital culture.

This work’s methodology naturally falls outside the remit of a single scholarly discipline, since hypertext has developed as a cross between early computer science and debates about textual criticism. The project is therefore situated at the intersection of book history and digital humanities, and uses this interdisciplinary framework to reconsider hypertext from the perspective of materiality. This follows a wider consideration of the materiality in media studies in the last couple of decades. While a material approach has been frequently applied to videogames and digital text, hypertext has received less attention within this framework. The material study of print culture in the form of book history anticipates this archaeological study of hypertext presented in the current study, as scholarship has uncovered a wealth of precursors for digital culture, particularly in the Early Modern period. The current study aims to historicise hypertext in a similar manner to recent studies in book history. Moreover, the thesis borrows methodological approaches from a socio-historiographical approach to book history as the study of the influence of people in the processes of composition and reception can offer valuable evidence about the entire lifespan of a literary text, either physical or digital. This focus on materiality and empirical evidence of reception will be supplemented through the close reading of literary works that are highlight the characteristics of texts under discussion.

The desired outcomes for this thesis are twofold: (1) outline a theory of material hypertext; and (2) distinguish between compositional and receptional forms of hypertext and outlines the consequences of this division. Most importantly, it is a call for closer attention to material

⁴ Marcus Leaning, *The Internet, Power and Society: Rethinking the Power of the Internet to Change Lives* (Oxford: Chandos, 2009), 8.

⁵ George Landow, *Hypertext 3.0: Critical Theory and New Media in an Era of Globalization* (Baltimore: The Johns Hopkins University Press, 2006); Jay David Bolter, *Writing Space: Computers, Hypertext, and the Remediation of Print*, 2nd ed. (Hillsdale: Lawrence Erlbaum Associates, 2001); Michael Joyce, *Of Two Minds: Hypertext, Pedagogy and Poetics* (Ann Arbor: University of Michigan Press, 2002).

hypertext in the study of digital and print culture. As hypertext has become an essential and often banal part of a wealth of digital projects, its aesthetic and cultural value has been ignored. The very fact of its ubiquity demands a reconsideration of the core tenets of scholarship regarding its history and development. The apparent banality of hypertext makes it a perfect example for rigorous analysis, as there is less hype about the potentially innovative aspects we can focus instead on its mechanisms and aesthetic value. Book history's recent renaissance demonstrates the importance of reconsidering what may be considered "finished," and this reconsideration also comes at a pivotal moment in digital history as eBooks and eReaders are becoming increasingly popular options for reading.⁶ The volume of text available for hypertext experimentation has grown exponentially since the early-1990s thanks to large-scale digitisation projects. This different atmosphere provides new challenges for the future of hypertext, so a secondary aim of the thesis is to provide blueprints for future hypertext design. The delineation of compositional and receptional hypertext offers two schools of hypertext with separate purposes and aesthetics. A system that does not clearly distinguish between these two separate schools of hypertext will offer a confused experience and only through a greater understanding of receptional hypertext will the discipline begin to be taken seriously again.

Thesis Outline

The thesis sets to develop a new model of hypertext, the Literary Web, which requires careful explication as to why it is necessary. The first two chapters of the thesis demonstrate the need for a new model of hypertext through historicisation of the field. The third chapter develops the new model and outlines the theory required to use the model as a tool for analysis. The final two chapters then offer two practical case studies of the applied benefits of the Literary Web model. There are several secondary narratives integrated into the thesis, including an argument for Vladimir Nabokov's *Pale Fire* as one of the most important works of hypertext fiction and for greater cooperation between book historians and hypertext as a rich area for interdisciplinary collaboration.

The first chapter reviews the dominant threads of hypertext scholarship as it emerged in the 1960s as an interdisciplinary tool through to its resurgence as part of the humanities in the 1990s. In order to critique these positions, the chapter first considers various definitions of hypertext and how these represent trends in the criticism of the form. A refined definition of hypertext that emphasises receptional manipulation offers new possibilities for hypertext scholarship. A close examination of the literature unsurprisingly reveals a gulf between those interested in technical systems and humanists. There was crossover in early hypertext design

⁶ Yin Zhang and Sonali Kudva, "Ebooks vs. Print Books: Readers' Choices and Preferences Across Contexts," in *ASIST 2013*, 2013, <http://www.asis.org/asist2013/proceedings/submissions/posters/31poster.pdf>.

between humanists and computer scientists evident in early hypertext systems such as *HyperCard*, *Intermedia* and *Storyspace* that explicitly allowed users to apply hypertext to literary investigation. Through analysis of the rough split between humanists and computer scientists, the chapter posits the existence of three separate sub-fields in hypertext: systems, implementations and ideologies. Systems are prototypes that are developed for the explicit purpose of hypertextuality and often feature cutting-edge implementations of hypertext research. Conversely, implementations of hypertext are far more common, as hypertext is part of a larger project. The ideology has been attacked most vigorously, as it misrepresents what is possible within hypertext design and was appropriated by poststructuralists at the turn of the 1990s. Many seminal works of hypertext fiction literalise these beliefs as the dominant opinion of the humanistic hypertext community. The final section of the chapter considers the wider remit of digital work in the humanities that has since supplanted hypertext as the dominant form of digital scholarship and suggests that bibliography and book history provide one of the richer methodologies for the applied material hypertext study in the early twenty-first century.

The second chapter builds upon the framework of material and print culture to argue against the delineation of print and digital literature as two separate entities. The dichotomy of print and digital literature is uneven as it supposes print is the only form of non-digital literature. Instead the chapter argues that we should consider a continuum between physical and digital literature, whereby many works—including case studies of William Gibson and Dennis Ashbaugh's *Agrippa*, Nick Montfort and Scott Rettberg's *Implementation*, Albert Tosi Fei's *Venice: The Ruyi* and Christian Bök's *Xenotext*—feature aspects of both physical and digital literature. These liminal texts, with both physical and digital components, focus on the materiality of both forms. This echoes a trend towards metafiction in digital literature as the early decades of the computer map out the limits of the field. In order to reorientate our understanding of the continuity between physical and digital literature, the second half of the chapter proposes a new taxonomy for exploring a holistic categorisation of literature. This three-dimensional taxonomy reveals convergences in the approach to materiality, structure and executability in both physical and digital texts. Transformation in material and structure are compositional, while executable transformations are receptional. Transformational materiality forces the reader to engage with the book as an object and how it can be read outside of the text. Structural modifications offer the reader different ways in which to trace their route through a pre-created work. Executability allows the reader to make their own changes to the work, whether temporary or permanent. A range of mini case studies that exemplify each stage of the taxonomy supplements the taxonomy.

Chapter three builds upon the previous chapter's distinction of a continuum between digital and physical literature, to propose a new model of hypertext. In this paradigm, we can move beyond

the idea of hypertext being a digital genre, and look at how it can apply to the wider sphere of physical and digital texts. In order to articulate this new model of hypertext, the chapter will consider how book history and hypertext converge. This project will utilise the field of book history as opposed to classical bibliography, which has frequently been used with regards to hypertext. While bibliography is insular and stems primarily from authorship debates in Shakespeare and the rare book market, book history examines the connections *between* not only texts, but also people and other agents. Robert Darnton's influential model of communication and Don McKenzie's "sociology of text" have been instrumental in the development of the field of book history that moves beyond the text being central to critical inquiry to focus instead on a broader range of agents; both human and mechanical.⁷ Traces from outside of the text, particularly those from the reader, can greatly aid interpretation of the reception of the text. Fortunately for us, these traces are increasingly digital and more visible on platforms such as Twitter. In order to understand the many undercurrents in the convergence of book history and hypertext, the chapter formulates a new model, the Literary Web, to explain how hypertext and book history merge. The model posits that the text represents a filter for any information from the composition to the receiving audience. The physical artifact has both a genesis and an afterlife, influenced by the processes around it. These can be changed through the use of "forks" or individual reuses that leave the original intact. The Literary Web provides a framework for discussions about material transformations, intertextuality and textual interconnectivity.

Chapter four applies the principles of the Literary Web to an exemplar: Vladimir Nabokov's *Pale Fire*. Nabokov's 1962 novel is not only frequently lauded for its hypertextuality, but also has a complex remediation history stemming back to Ted Nelson's apocryphal hypertext demonstration of *Pale Fire* in the late 1960s. This case study will trace how *Pale Fire* developed along many of the principles of the Literary Web from Nabokov's composition of the novel using index cards that he would shuffle during drafting through to the complex digital reception of one of Nabokov's most engaging and complex texts. *Pale Fire* is an ideal candidate for study under the Literary Web beyond its familiar physical hypertext features as its form and content critique many of the processes of the model. The indeterminate nature of the text plus the hypertext medium allow for a complex afterlife of the text. The first part of the chapter will consider the tropes of compositional-based hypertext in *Pale Fire* and how Nabokov's composition technique has created a text that proposes a hypertextual reading. The themes of indeterminacy and hypertextuality throughout the novel and how this has effected its critical reception will be explored. The second part of the chapter will then look at the reception of the

⁷ Robert Darnton, "What Is the History of Books?," in *The Book History Reader*, ed. David Finkelstein and Alistair McCleery, 2nd ed. (Oxford: Routledge, 2006), 9–26; D. F. McKenzie, *Bibliography and the Sociology of Texts* (Cambridge: Cambridge University Press, 1999).

text on digital media. This will include tracing the direct and complete remediations of *Pale Fire* as a hypertext from Ted Nelson's demonstration to the more recent Web implementations. These remediations reconfigure Nabokov's text, often diverging from the original hypertextuality of the print novel and often closing implicit links through their interpretations. The chapter offers a framework for the design of a digital edition of *Pale Fire* that is more conducive to the receptional forms of hypertext discussed in the thesis.

The final chapter of the thesis returns to hypertext more generally and looks forward to how it might develop with regards to the delineation between compositional and receptional forms. The chapter revisits the archival impulses of the earliest hypertext pioneers and the ways in which these shaped the archival forms of later systems. Archival forms of hypertext will always favour the conditions of composition rather than allowing for innovative re-uses of the new forms. This can be juxtaposed with the *hypertext circus*, which offers the chance for readers to make their own multiple voices heard without resorting to traditional hypertext methods. The chapter poses a model of deixis in hypertext that allows for systems of implicit and explicit hypertext to be developed. Through this formulation, it is possible to move towards receptional hypertext through the use of media such as Twitter and the vast amount of material available through the Amazon Kindle store. These new forms can be realised as speculative hypertext, micro-experiments that reveal the underlying subjectivity of hypertextuality. The final section of the chapter looks at the Kindle as a system that can smuggle many of the principles of receptional hypertext to a wider audience and how this can be reused by both hypertext specialists and other interested parties in order to build more sophisticated hypertext systems.

Some Notes on terminology

As with any project engaging with complex issues, there is a plethora of complex terminology related to the field of study. Most of these words will be dealt with in due course, but few require closer explication as for their use for other reasons, not ideological ones.

Hypertext/proto-hypertext

Ted Nelson introduced hypertext as a way to represent interconnections visually in ways impossible on paper.⁸ Within this formulation, if a print text happens to resemble a digital hypertext, it is deemed a "proto-hypertext." The current project rejects this dichotomy as it assumes that digital hypertexts are superior to their print-based counterparts, and the development of digital hypertexts represents an "evolution" from proto-hypertexts. As the current project demonstrates, sophisticated hypertexts can be physical or print artefacts, and as

⁸ Theodor Holm Nelson, "Complex Information Processing: A File Structure for the Complex, the Changing and the Indeterminate," in *Proceedings of the 1965 20th National Conference* (New York: ACM, 1965), 96.

such do not deserve the inferior connotation of “proto-hypertext”; therefore, “hypertext” is used to refer to both physical and digital manifestations.

Authorship and reading

Leslie Howsam has aptly argued for a wider movement from the exclusive terms of authorship and readership to more inclusive terms that account for a much wider range of agents in the processes of composition and reception:

Rather than authorship some scholars have focused on *composition* or *inscription*, so as to include transcriptive acts of writing, such as the recording of communal endeavours, or collective feats of memory like folk tales, songs, or recipes [...] And instead of readership, reception is a term perhaps broad enough to embrace the possibility of using the book for purposes other than reading.⁹

In the field of digital textuality, neutral terms are useful for discussion of automated texts and data mining methods. Bell *et al* argue that “reading” does not cover the broad ways in which users interact with digital literature and instead suggest the broader “experience.”¹⁰ Composition and reception will be used to broadly define these activities, unless a more specific party is mentioned.

Digital Literatures

The explosion of literary creativity in digital media after the heyday of hypertext theory needed a name and the Electronic Literature Organization (ELO) was formed in order to devise a future of digital literature and organise the plethora of emerging genres as a better catch-all term than hypertext.¹¹ Electronic literature as a term refers back to the organisation and suggests endorsement, while digital literature offers a more neutral term. Moreover, the plural form, digital literatures, is preferred as it is impossible to group together a wide range of activity currently occurring with the development of digital literatures.

OuLiPo

The OuLiPo, the *Ouvroir de littérature potentielle* (Workshop for Potential Literature), is a group of European avant-garde authors who experiment with “potential literature” or the ability to devise new genres of text through exploiting underlying structures to become as generically useful as the sonnet, haiku or acrostic poem. This activity aimed to exhaust the potential of literature through offering the template for future creative work. As per Daniel Levin Becker, when discussing the group, although the acronym is OuLiPo, this is normalised to Oulipo for the sake

⁹ Leslie Howsam, *Old Books & New Histories: An Orientation to Studies in Book and Print Culture* (Toronto: University of Toronto Press, 2006), 62–63.

¹⁰ Alice Bell et al., “A [S]creed for Digital Fiction,” *Electronic Book Review* (2010): para. 16, <http://www.electronicbookreview.com/thread/electropoetics/DFINative>.

¹¹ Scott Rettberg, “Developing an Identity for the Field of Electronic Literature: Reflections on the Electronic Literature Organization Archives,” *Dichtung Digital* 41 (2012), www.dichtung-digital.org/2012/41/rettberg.htm.

of readability. Levin Becker also recommends the use of Oulipian (capitalised) to discuss works related to members of the Oulipo, while oulipian (in lower case) refers activity that plays conscious homage to the work of Oulipo members. This distinguishes between the literary group and activity that is similar to their work.¹²

Multimedia

The term of multimedia will be avoided, as Wolfgang Ernst argues:

Multi-media describes the way or method of production, the forms of its transport, not its object or content. While a printed letter can only carry the meaning of one phonetic unit, one byte can encode 256 different textual, acoustic or visual options [...] A close reading of the computer as medium, though, reveals that there is no multimedia in virtual space, only one medium, which basically calculates images, words, sounds indifferently, since it is able to *emulate* all other media.¹³

Lev Manovich has recently argued that the shift toward software as the dominant medium has not led to hypermedia or multimedia, but rather what he terms the metamedium.¹⁴ Where appropriate, multimodality (the use of more than one semiotic system within a single representational system) will be used in place of multimedia.

A Note on Sources

eBooks

Occasionally, eBooks have been referenced in place of print counterparts. This has been noted in the referencing. Since page numbers can be inconsistent between print and digital versions, the Kindle's "location" has been used as a standard point of reference.

Twitter and Blogs

Digital humanities research evolves rapidly, with a portion of cutting-edge research and discourse occurring primarily in digital arenas on sites such as Twitter and blogs. Consequentially, the current project makes reference to tweets and blogs to acknowledge ideas and theories that had not made it into more traditional forms of scholarly dissemination when the PhD was completed.

¹² Daniel Levin Becker, *Many Subtle Channels: In Praise of Potential Literature* (Cambridge, MA: Harvard University Press, 2012), ix.

¹³ Wolfgang Ernst, "Dis/continuities: Does the Archive Become Metaphorical in Multi-Media Space?," in *New Media Old Media: A History and Theory Reader*, ed. Wendy Hui Kyong Chun and Thomas Keenan (New York: Routledge, 2005), 108.

¹⁴ Lev Manovich, *Software Takes Control* (New York: Bloomsbury, 2013), 11.

Chapter 1: Literature Review

All digital practice is not contained within the idea of hypertext, and hypertext itself is not limited to multi-pathed fictions or link-node constructions
- Loss Pequeño Glazier (2002)¹⁵

Perhaps it's more accurate to say that Hypertext (meaning the community if not the technology) is what comes after the World Wide Web: and I mean after in both its obvious senses
- Stuart Moulthrop (1998)¹⁶

In a project that discusses the bleeding edge of digital culture, the concept of a literature review may appear quaint. While meta-analyses, big data and systematic reviews are revolutionising scholars' understanding of critical debates in the social and natural sciences, humanities scholarship resists such radical transformations. What follows is a literature review based upon humanist conventions. In order to navigate the fields that comprise the work's methodological core, the literature review takes the form of a narrative through the evolution of the concept of hypertext, its dilution into the Web and what came next, primarily through the lens of canonical critical texts. It is through critiquing this tradition—that has been established primarily through foundational texts—that the case study of hypertext can be re-energised through developing a model that reacts against the inherent tensions in these early canonical texts within larger debates in digital literary and new media studies.

The Tensions of Interdisciplinarity

Definitions of Hypertext

As with many disciplines, defining the core values of hypertext has been contentious. Johnson-Eilola and Kimme Hea state “hypertext has always been a multiple and conflicted term, shifting and reconfiguring at the nexus of local tendential forces. Hypertext coalesces, it seems, around a wish of *what we want text to be*.”¹⁷ This had led to multiple definitions of hypertext, primarily suggesting how it will facilitate the “transformation of culture.”¹⁸ Ted Nelson chose the word hypertext as “the sense of ‘hyper-’ used here connotes extension and generality,” as in hyper-

¹⁵ Loss Pequeño Glazier, *Digital Poetics: The Making of E-Poetries* (Tuscaloosa and London: The University of Alabama Press, 2002), 169.

¹⁶ Stuart Moulthrop, “Straight Talk for Troubled Times, or: The Street Finds Its Uses for Things,” in *Proceedings of the Ninth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 1998), 55.

¹⁷ Johndan Johnson-Eilola and Amy C. Kimme Hea, “After Hypertext: Other Ideas,” *Computers and Composition* 20, no. 4 (December 2003): 415–425 Emphasis my own.

¹⁸ Peter Krapp, “Hypertext Avant La Lettre,” in *New Media Old Media: A History and Theory Reader*, ed. Wendy Hui Kyong Chun and Thomas Keenan (New York: Routledge, 2005), 359.

dimensional.¹⁹ Extension is the keyword in Nelson’s definition as hypertext has never been an attempt to supplant linear text but rather to supplement and extend it. The definition is echoed by Robert Coover’s *New York Times* front page proclamation: “‘Hypertext’ is not a system but a generic term, coined [...] to describe the writing done in the nonlinear or nonsequential space made possible by the computer.”²⁰ In these definitions, hypertext is a computational method superior to print. Barnet argues that Nelson included an aspect of automation in his definition of hypertext to limit the word’s use to the computer, but these processes can occur in other automatic cognitive manners when interacting with something physically.²¹ Many definitions do not reflect this superiority. Katherine Hayles suggests a muted version of hypertext describing hypertext as the ability to reorganise text through the use of nodes—connection points—and links.²² Espen Aarseth, a vocal critic of hypertext, states, “Hypertext, for all its packaging and theories, is an amazingly simple concept. It is merely a direct connection from one position in a text to another.”²³ Aarseth notes the hype in early hypertext criticism but only considers link-and-node versions of hypertext, recognised as the least complex model.

All-encompassing definitions of hypertext have been difficult to provide, so many definitions have instead focused on specific features. Michael Joyce has stressed the importance of visual representation in hypertext as it enables the reader to imagine the multiple pathways offered to them.²⁴ Many early hypertext systems allowed the user to view a map of the macro-structure of the text. Gall and Hannafin suggest, “Hypertext is a method for organizing information that allows meaningful, non-linear access to text-oriented resources.”²⁵ Hypertext does not lead to anarchy, despite the multi-dimensionality implied in the prefix; it can be formed in either an *ad hoc* or planned manner, but the connections must *mean* something rather than exploring text in a random and incoherent method. Interestingly, the link as a mechanism in many hypertext systems does not provide a meaningful connection as there is no information as to why the link has been made. This runs counter to many appropriations of hypertext that can be meaningful through playfulness and experimentation. Hypertext is often defined in juxtaposition to linear text. David Kolb posits “hypertext is reading an item (a piece of text, an image, a page) within a

¹⁹ Nelson, “Complex Information Processing,” 98.

²⁰ Robert Coover, “The End of Books,” *New York Times*, June 21, 1992.

²¹ Belinda Barnet, *Memory Machines: The Evolution of Hypertext [Kindle Edition]* (London: Anthem Press, 2013), loc. 644.

²² Hayles, *Writing Machines*, 26; Perhaps versioning and revisions would have created a greater separation between print-based and electronic hypertexts. C.f Moulthrop: “Print demands perfect expression; a hypertext consists of ‘versions’ or, to borrow from Jorge Luis Borges, ‘an indeterminate heap of contradictory drafts’”. Stuart Moulthrop, “Pushing Back: Living and Writing in Broken Space,” *Modern Fiction Studies* 43, no. 3 (1997): 660.

²³ Espen J. Aarseth, “Nonlinearity and Literary Theory,” in *Hyper/Text/Theory*, ed. George P. Landow (Baltimore and London: John Hopkins University Press, 1994), 770.

²⁴ Joyce, *Of Two Minds*, 19.

²⁵ James E. Gall and Michael J. Hannafin, “A Framework for the Study of Hypertext,” *Instructional Science* 22 (1994): 207.

larger field of explicit connection than linear text can present.”²⁶ Kolb’s formulation offers a useful framework for considering hypertext as large-scale object, rather than at the level of the link. The prevalence of recursion and loops in databases (structures created for the direct purpose of information retrieval in multiple ways) and object-oriented programming (a paradigm of programming that allows users to define their own sub-routines as objects that can be recalled and modified at different points of writing the code)²⁷ suggests non-linearity is not sufficient to define hypertext, although inevitably hypertext will be non-linear. Johnson-Eilola argues non-linearity is not the only shared feature of hypertext as “like every other text and technology, [hypertext] is a *social* technology.”²⁸ Johnson-Eilola reveals a sociality that runs deeper than the social networking technology which has redefined the importance of connections on the Web. Hypertext manifests social connections not only between people but also documents. This is a core formulation of hypertext, and it is impossible to convey the multidimensionality of hypertext without referring to its social element.

Definitions of hypertext vary depending on the critic’s value judgement of the form. This debate generally overlooks an ontological question: is hypertext a medium, a genre, or something else? As Marie-Laure Ryan states, “whereas *genre* is defined by more or less freely adopted conventions, chosen for both personal and cultural reasons, *medium* imposes its possibilities and limitations on the user.”²⁹ Both genre and medium appear to be too narrow in this taxonomy to define hypertext. We can define hypertext instead as a platform, “the abstraction layer beneath code,”³⁰ such as the layers of interpretation that ensure the binary pulses of a computer can translate code written by humans. In platform, there is a possibility of openness and generativity that is locked down by the terms genre and medium. Nelson has defined hypertext in these terms as “the generalization of literature.”³¹ To Nelson, hypertext is the underlying connective tissue that ensures that we read a text outside of a vacuum. Hypertext is still relatively undeveloped as a platform, since “if the book is a highly refined example of a primitive technology, hypertext is a primitive example of a highly refined technology, a technology still at the icebox stage.”³² The book has developed slowly over 500 years, while hypertext has only been a subject of critical inquiry for less than 100 years. It is only with the

²⁶ David Kolb, “Association and Argument: Hypertext in and around the Writing Process,” *New Review of Hypermedia and Multimedia* 11, no. 1 (2005): 12.

²⁷ Grady Booch, “Object-Oriented Design,” *Ada Letters* I, no. 3 (March 1982): 65.

²⁸ Johndan Johnson-Eilola, *Nostalgic Angels: Rearticulating Hypertext Writing* (Norwood, New Jersey: Ablex Publishing Corporation, 1997), 7.

²⁹ Marie-Laure Ryan, “Introduction,” in *Narrative across Media: The Language of Storytelling*, ed. Marie-Laure Ryan (Lincoln and London: University of Nebraska Press, 2004), 19.

³⁰ Nick Montfort and Ian Bogost, *Racing the Beam: The Atari Video Computer System* (Cambridge: MIT Press, 2009), 147.

³¹ Nelson defines literature as all forms of text, from belletrism to grocery receipts. Theodor Holm Nelson, “Transhyperability and Argumedia,” *New Review of Hypermedia and Multimedia* 11, no. 1 (2005): 30.

³² J. Yellowlees Douglas, *The End of Books - Or Books without End?: Reading Interactive Narratives* (Ann Arbor: The University of Michigan Press, 2000), 15.

familiarisation of the form and its integration into everyday culture, such as the infiltration of link-and-node hypertext on the Web, that hypertext can truly be studied in context rather than riding on a wave of novelty. This has been clear from the study of the book, which only truly mobilised in the last century, after an initial 400 years of formation.

Recent French criticism has provided a compelling definition of hypertext. In a summary of contemporary directions in hypertext research in France, Saemmer discusses Jeanneret and Davallon's re-definition of hypertext as "traces and anticipations of readings": the encounter between the parent text and the related text results from an interpretive act, performed by the author, and which fully, partially or hardly meets the reader's expectations."³³ Hypertext is a platform for potential readings, either in a text or between multiple texts as Jeanneret and Davallon state, and should not impose decisions on the reader, but manifests through the author's traces and anticipations. Saemmer continues: "hypertext does not only establish a relation between a parent and a related text, it is also an interactive, 'manipulable' element that combines at least two different semiotic systems through the same active support: a text and a 'manipulation gesture.'"³⁴ A *manipulable* element could be the link in a link-and-node hypertext, the search bar, the words that trigger a connection between two chunks of text, or the workspace through which different elements can be juxtaposed. The manipulation gesture offers a platform from which to build hypertexts guided by both composition and reception, those that are *ad hoc* or pre-structured, and does not necessarily endow hypertext with an overwhelming degree of agency. This definition offers a precise, yet open, definition of hypertext that expands beyond the constrained link-and-node model, and anticipates both implicit and explicit methods of linking.

The Two Cultures

Although hypertext as a textual entity of non-linearity dates back to the oral tradition, where poets would use stock phrases that were interchangeable and fluid,³⁵ hypertext theory's long prehistoric period³⁶ can be traced back to Vannevar Bush's influential *Atlantic* article, "As We May Think," published in 1945. Bush proposed the "Memex," or Memory Extender, an analogue microfilm device that allowed readers to forge new connections between slides.³⁷ Technical interest in hypertext, such as the Memex, started from problems such as navigating

³³ Alexandra Saemmer, "Some Reflections on the Iconicity of Digital Texts," *Language & Communication* 33, no. 1 (2013): 2.

³⁴ *Ibid.*

³⁵ Milman Parry, "Studies in the Epic Technique of Oral Verse-Making. I. Homer and Homeric Style," *Harvard Studies in Classical Philology* 41 (1930): 73.

³⁶ To borrow a term from Chris Funkhouser, *Prehistoric Digital Poetry: An Archaeology of Forms, 1959-1995* (Tuscaloosa: The University of Alabama Press, 2007); It should be noted that Ian Bogost uses a similar phrase for Ted Nelson's early hypertext work in *Persuasive Games: The Expressive Power of Videogames* (Cambridge: MIT Press, 2010), 26.

³⁷ Belinda Barnet, "The Technical Evolution of Vannevar Bush's Memex," *Digital Humanities Quarterly* 2, no. 1 (Summer 2008), <http://digitalhumanities.org/dhq/vol/1/2/000015/000015.html>.

long texts, retrieving information and displaying connections between texts. The contact between literature and hypertext can be traced back to Ted Nelson's apocryphal, and ultimately rejected, use of Vladimir Nabokov's *Pale Fire* for a demonstration of Hypertext Editing System (HES), circa 1967.³⁸ This document, which we will return to in Chapter Four, represents a missing link between hypertext and literature that would guide early hypertext scholarship towards creative convergence rather than the divide between technical hypertext and literature. The successor to HES, File Retrieval and Editing System (FRESS) was used to construct a poetry textbook, the first canonical convergence between hypertext and literature.³⁹ Despite the early success of hypertext mediated through computer science in the prehistoric era, convergence with humanist inquiry was limited. In the humanities, Gérard Genette's *Palimpsests* featured the neologisms "hypertext" and "hypotext" to denote a connection between two texts, whereby the hypertext appropriates elements of the hypotext.⁴⁰ This term was overtaken in humanities scholarship at the turn of the 1990s by Nelson's idea of hypertext. In computing, prehistory turned into history with the institutionalisation of the field through international conferences and working groups in the 1980s such as ACM's annual Hypertext and European Conference of Hypertext (ECHT), and the Hypertext Standardization Workshop.⁴¹ At the time, Apple's *HyperCard* was one of the most popular systems to explore the early years of literary hypertext.⁴²

Case Study: HyperCard

Apple played a pivotal role in the development of the artistic use of hypertext. Many non-specialists first encountered hypertext through the aforementioned *HyperCard*, a program shipped free with the new Apple Macintosh II in 1987.⁴³ *HyperCard* may not have been as

³⁸ Theodor Holm Nelson, *Literary Machines 93.1* (Sausalito, CA: Mindful Press, 1993), 1/31; Although the demonstration was never made public, Nelson documented his oral script and the contents of the demonstration in his archival document "IBM D2," thus confirming the existence of the earliest link between hypertext and literature, although unfortunately the manuscript is undated. Theodor Holm Nelson, "IBM D2" (Brown University, 1968).

³⁹ Belinda Barnet, "Crafting the User-Centered Document Interface: The Hypertext Editing System (HES) and the File Retrieval and Editing System (FRESS)" 4, no. 1 (Summer 2010): para. 31, <http://www.digitalhumanities.org/dhq/vol/4/1/000081/000081.html>.

⁴⁰ Gérard Genette, *Palimpsests: Literature in the Second Degree*, trans. Channa Newman and Claude Doubinsky (Lincoln and London: University of Nebraska Press, 1982), 5.

⁴¹ Richard Furuta, "Call for Papers: Hypertext Standardization Workshop," *Alt.hypertext*, October 19, 1989, <https://groups.google.com/d/msg/alt.hypertext/ZelQbY0Zuqs/xxdg45U1PN4J>.

⁴² For a select few examples of such work, see Barnet, *Memory Machines*; Jay David Bolter and Michael Joyce, "Hypertext and Creative Writing," in *Proceedings of the ACM Conference on Hypertext* (New York: ACM, 1987), 41–50; Mark Bernstein, "Storyspace 1," in *Proceedings of the Thirteenth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2002), 172–181; Andrew M. Fountain et al., "MICROCOSM: An Open Model for Hypermedia with Dynamic Linking," in *Hypertext: Concepts, Systems and Applications*, ed. N. Streitz, A. Rizk, and J. André (New York: Cambridge University Press, 1992), 298–311; James O. Goulding, Timothy J. Brailsford, and Helen L. Ashman, "Hyperorders and Transclusion: Understanding Dimensional Hypertext," in *Proceedings of the 21st ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2010), 201–210; Jacek Jankowski et al., "2LIPGarden: 3D Hypermedia for Everyone," in *Proceedings of the 20th ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2009), 129–134; m. c. schraefel et al., "The Evolving mSpace Platform: Leveraging the Semantic Web on the Trail of the Memex," in *Proceedings of the Sixteenth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2005), 174–183.

⁴³ Mark Levene, *An Introduction to Search Engines and Web Navigation* (London: John Wiley & Sons, 2010), 224.

innovative as other hypertext software at the time, but because it came pre-installed on many Apple computers after 1987 its market penetration was not surpassed until the arrival of the World Wide Web, and as such was “the elephant in the pre-Web hypertext room.”⁴⁴ *HyperCard* offered the trademark easy-to-use Apple interface and employed the common metaphor of index cards, familiar in the late 1980s, since many library catalogues still used index cards rather than fully digitised databases.⁴⁵ Early users already knew how connections worked in *HyperCard*. For users who required more advanced mechanisms, *HyperCard* featured HyperTalk, a natural-language programming language (an attempt to replicate natural language structures as closely as possible), allowing users to build more object-oriented elements within their *HyperCard* stacks and as an extensible language that could be built upon indefinitely, users could install additional code libraries as required.⁴⁶ Due to this malleability, many early works of both commercial and experimental literary hypertext appeared on the *HyperCard* platform including *Myst*, Voyager System’s Expanded Books, Jim Rosenberg’s *Intergrams* and John McDaid’s *Uncle Buddy’s Phantom Funhouse*.⁴⁷ Since *HyperCard* offered a low cost and easy to use programming *tabula rasa*, it was frequently used to prototype software including Ward Cunningham’s WikiWikiWeb, the basis of MediaWiki, implemented by Wikipedia.⁴⁸ *HyperCard* facilitated one of the first substantial convergences between literature and hypertext, although the interdisciplinarity led to several complications in the discussion of hypertext’s ontology.

The Three Hypertexts

From hypertext scholarship, we can discern three separate strands of hypertext: systems, implementations and ideologies. Although these areas are distinct and multiplicitous, there is considerable overlap, particularly between implementations and ideologies. The problems of defining hypertext are due to not separating these three elements. Despite this, a more careful and intricate understanding of the triptych will help explain many of the problems with previous hypertext research and its appearance. *Storyspace*, Microcosm, the Spatial Hypertext Wiki (ShyWiki) and GALE are examples of pure hypertext systems as their primary aim is to construct hypertexts.⁴⁹ Most of these projects were started before the arrival of the Web and

⁴⁴ Barnett, *Memory Machines*, loc. 417.

⁴⁵ Krajewski discusses the convergence between index cards and computation at length in *Paper Machines: About Cards & Catalogs, 1548-1929*, trans. Peter Krapp (Cambridge: MIT Press, 2011), passim.

⁴⁶ Dan Winkler, Scot Kamins, and Jeanne Devoto, *Hypertalk 2.2*, 2nd ed. (New York: Random House, 1994), 21–22.

⁴⁷ Andrew Hutchison, “Making the Water Move: Techno-Historic Limits in the Game Aesthetics of *Myst* and *Doom*,” *Games Studies* 8, no. 1 (2008), <http://gamestudies.org/0801/articles/hutch>; Laura Fillmore, “Internet Publishing: How We Must Think,” *Journal of Electronic Publishing* 1, no. 1&2 (February 1995); Jim Rosenberg, *Intergrams* (Watertown: Eastgate Systems, 1993); John McDaid, *Uncle Buddy’s Phantom Funhouse* (Watertown: Eastgate Systems, 1992).

⁴⁸ H.Rex Hartson and Eric C. Smith, “Rapid Prototyping in Human-Computer Interface Development,” *Interacting with Computers* 3, no. 1 (April 1991): 51–91; D.E. O’Leary, “Wikis: ‘From Each According to His Knowledge,’” *Computer* 41, no. 2 (February 2008): 34.

⁴⁹ Bernstein, “*Storyspace* 1”; Fountain et al., “Hypertext”; Carlos Solis and Nour Ali, “An Experience Using a Spatial Hypertext Wiki,” in *Proceedings of the 22nd ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2011), 133–

since 1992, there have been few new hypertext systems. The arrival of the Web signalled the end of “pure” hypertext research, as the Web’s appropriation of linking became the dominant form to utilise or contradict.

The second major sub-discipline is hypertext implementations, most commonly using hypertext methods in larger systems, creating digital editions or rereading texts while finding new connections. A primary example is the World Wide Web; as its central technical innovation is a system for transferring documents without recourse to a central server, hypertext is an optional feature. More complex hypertext systems can be built on top of platforms such as the Web. MediaWiki, the software Wikipedia runs on, offers the ability to reuse the same content in a variety of locations, known technically as transclusion. Conversely, hypertext systems are built for the purpose of connectivity rather than adding linking mechanisms as a periphery feature. The continued ubiquity of the Web *as* hypertext in the popular imagination and the peripheral need for non-linearity in a variety of software signals the on-going popularity of implementations of hypertext over experimental systems that focus on progressing the discipline as an art. It is easier to identify a hypertext implementation, normally because of its theoretical coupling with one of two classic hypertext ideologies. Implementations are spurred on by faith “in such apparatus as footnotes, endnotes, cross-reference, and so on, undermining the claim that the technology was completely novel.”⁵⁰ This convergence between print and hypertext conventions is a ripe area for hypertext implementations, as it does not require the designer or critic to substantially revise a general theory of hypertext. Mark Bernstein’s “Patterns of Hypertext” identifies several patterns central to hypertext such as the cycle, counterpoint and missing link. “Cycles” are links that loop back into themselves; “counterpoints” feature call-and-response; and “missing links” contain gaps that the reader should fill.⁵¹ Although Bernstein’s toolkit supports close reading of electronic literature, these patterns frequent print literature and are relevant to examining other texts’ potential as hypertext. The cycle is the most important element of Bernstein’s work for hypertext in print as it represents rereading, the clearest example of hypertext in print. Vladimir Nabokov posits “one cannot read a book: one can only reread it. A good reader, a major reader, an active and creative reader is a rereader.”⁵² Rereading allows the reader to make new non-linear connections in the text through an understanding of the whole when revisiting the particulars. This famous quote demonstrates the potential for a hypertextual methodology in print literature. Due to

142; David Smits and Paul De Bra, “GALE: A Highly Extensible Adaptive Hypermedia Engine,” in *Proceedings of the 22nd ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2011), 63–72.

⁵⁰ N. Katherine Hayles, *Electronic Literature: New Horizons for the Literary* (Notre Dame: University of Notre Dame Press, 2008), 31.

⁵¹ Mark Bernstein, “Patterns of Hypertext,” in *Proceedings of the Ninth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 1998), 21–29.

⁵² Vladimir Nabokov, *Lectures on Literature*, ed. Fredson Bowers (London: Weidenfeld and Nicolson, 1982), 3.

these resonances in Nabokov's works, Brian Boyd structured his two single-text books on Nabokov around the concept of reading and rereading.⁵³ Critical interpretations of a text often depend on rereading as the cyclical revision of material allows the critic to see connections between disparate sections of the work invisible in an initial read.

The final category, hypertext ideology is not made up of one monolithic version of *the* hypertext ideology, but bifurcates between the original ideology of visionaries such as Vannevar Bush, Ted Nelson and Douglas Engelbart and future appropriations by theorists, which stretched many of the concepts of early hypertext theory to fit models developed within then contemporary humanist modes of inquiry. Hypertext ideology has obfuscated technical aspects of the platform. Hypertext research would profit from separating ideology from both systems and implementations, since the damaged reputation of hypertext is the result of ideological concerns rather than practical implementations and systems. Belinda Barnet has argued that this trend is reversible, and her book documenting the oral history of hypertext is a call for arms as: "Hypertext could be different; it doesn't have to be the way it is today."⁵⁴ One of the ways in which hypertext can become resurgent is through careful separation of the ideological aspects from systems and implementations.

The Ideological Fallacy

Classic Hypertext Ideology

We can split the development of the hypertext ideology into two separate waves. One stems from Nelson's original treatise in the late 1960s through to the mid-1980s with the publication of *Literary Machines*, a precursor to the Californian Ideology; that is, an unerring faith in the power of technology to improve society.⁵⁵ The second wave coincides with the rise of critical theory and the convergence of poststructuralist thought with hypertext ideologies, thus transforming many aspects of the original hypertext ideology. Classic hypertext ideology starts from the premise that all texts form a homogenous meta-document that can be extensively linked and reordered. Any individual document is just part of this connective tissue. Borges notes this is a common aim of literature: "the practice of literature sometimes fosters the ambition to construct an absolute book, a book of books that includes all the others like a Platonic archetype."⁵⁶ He satirises this practice in his short stories including "The Library of

⁵³ Brian Boyd, *Nabokov's Pale Fire: The Magic of Artistic Discovery* (Princeton: Princeton University Press, 2001); Brian Boyd, *Nabokov's Ada: The Place of Consciousness* (Christchurch: Cybereditions, 2001).

⁵⁴ Barnet, *Memory Machines*, loc. 402.

⁵⁵ See Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago and London: The University of Chicago Press, 2006) for a summary of the rise of the Californian Ideology through Nelson's peers.

⁵⁶ Quoted in Davin O'Dwyer, "Searching for Cyberspace: Joyce, Borges and Pynchon," 2003, 17, <http://www.themodernword.com/Borges/odwyer.pdf>.

Babel,” a warning of accumulating an infinite amount of information.⁵⁷ The hope that large-scale collation and connection of text would facilitate new knowledge has equally been a driving force of the Web, particularly with the rise of search engines, since in *the* hypertext, the volume of links is too large to organise on a personal level, but requires an external agent like Google to sort for relevant information.⁵⁸

The first system to be labelled explicitly as hypertext, Ted Nelson’s Evolutionary List File, later renamed Xanadu, exemplified the ideology of frustrations of the first-generation hypertext ideology, as Nelson’s chief concern was the ability to maintain textual stability while allowing the text to be reconfigured in various, often unforeseen, ways. Previous visionaries including H.G. Wells had noted the necessity of a system of interconnected text,⁵⁹ but Nelson conceived his system to include interfaces that varied according to the user’s needs, and a modified version of copyright that encouraged micro-payments to offset royalties, so that every time a page was viewed or reused, the author would receive a tiny royalty, rather than suggesting a utopian vision of a post-copyright world.⁶⁰ Nelson was convinced that hypertext and the interconnection of information did not necessitate a wide-scale movement to what has been termed “open access” in recent years, since content generators were still due payment. Xanadu would work within current structures rather than overhaul them and the emphasis was on the textual connectivity. Tragically, such a practical element appears to still be an ideological concept rather than a viable system. The economic ideology of a balanced copyright system is not the only aspect of Nelson’s idea that has been lost since his vision of permanent two-way linking has also been lost in actual design over the years. The World Wide Web, the closest pseudo-hypertext on the scale of Nelson’s ambitious design, does not offer bi-directional links from within the page and additional mechanisms such as trackbacks, which list the locations that link to the resource, and the back button must be used in order for the reader to carefully navigate to previous locations. Nelson’s vision of hypertext necessitated bi-directional links to demonstrate that the content was re-used, something that was not seen as vital to many later hypertext systems.

Doug Engelbart, the other major theorist of first wave hypertext ideology, took a complementary approach to the benefit of his vision: to augment the collective intellect of humanity.⁶¹ Engelbart’s oNLine System (NLS) led to an early public demonstration of hypertext, retroactively called the “Mother of All Demonstrations” since it established many of

⁵⁷ Unfortunately this satire has not stopped some hypertext theorists from making a favorable comparison.

⁵⁸ This ideal is the basis of theories of intertextuality and the ability to create *the* hypertext of literature through the interconnections of quotations and allusions.

⁵⁹ H. G. Wells, *World Brain* (London: Methuen & Co. Limited, 1938).

⁶⁰ Theodor Holm Nelson, “Xanalogical Structure, Needed Now More than Ever: Parallel Documents, Deep Links to Content, Deep Versioning, and Deep Re-Use,” *ACM Computing Surveys* 31 (December 1999): 22. The model has since gained traction in the economics behind audiovisual subscription services such as Spotify and Netflix.

⁶¹ Douglas C. Engelbart, “Toward Augmenting the Human Intellect and Boosting Our Collective IQ,” *Communications of the ACM* 38, no. 8 (August 1995): 30–32.

the principles that dominated computing for decades such as the mouse, videoconferencing and multiple windows.⁶² Engelbart states that the epiphany for developing his hypertext stemmed from imagining “people collaborating interactively on visual displays connected to a computer complex.”⁶³ Engelbart’s ideology was different from Nelson’s in the fact that the NLS represented a blank canvas for collaboration and the ability to supplement interpretation through visual aids. As with Nelson’s vision, structure would be a big part of Engelbart’s vision as a necessary part of collaboration. These two foundational hypertext systems were not widely replicated in the second wave of scholarship, as a different ideology began to dominate discussion of hypertext.

Second Generation Hypertext Ideology

Hypertext’s popularity in the 1980s mirrored the rise of critical theory and hypertext was championed as the embodiment of theory. This shift was not universally liked, as Stuart Moulthrop recalls an early ACM Hypertext conference in which Nelson refuted the speaker, shouting “You! Up there! ... WRONG!”⁶⁴ One of the chief proponents of the new hypertext ideology, George Landow, did not view hypertext as a new paradigm, but asserted that it can be a tool of institutional revolution in line with Brown University’s New Curriculum, an initiative begun in the 1960s to allow students to entirely shape their own curriculum through the use of free elective courses.⁶⁵ Jennings states “Landow perceives hypertext as more than a teaching tool, a learning machine, an ‘educational program.’ For him it is a medium, and its unprecedented massage [sic]⁶⁶ is potentially multicentered and democratizing far beyond the campus.”⁶⁷ Hypertext was the right tool to advocate this ideology at a time where technology was being embraced by the academy. These theory heavy approaches diverge from Nelson’s conservative aims of fair payments for authors and stability of the textual record, which reinforce the status quo rather than acting as a disruptive and democratising force the post-1968 ideologies proposed. Nelson’s vision of transclusion as a stabiliser of the written record is not shared with the Modernist aesthetics of early hypertext literature. Michael Joyce’s *afternoon, a story* was championed as a story that changes with every reading and its invisible links required close attention in order to understand the linking structures within the text.⁶⁸ Xanadu is an archival project, while early works of hypertext fiction subverted traditional user experience

⁶² Douglas C. Engelbart, “The Mother of All Demos,” 1968, <http://sloan.stanford.edu/MouseSite/1968Demo.html>.

⁶³ Engelbart, “Toward Augmenting,” 30.

⁶⁴ Stuart Moulthrop, “Foreword: To Mandelbrot in Heaven,” in *Memory Machines: The Evolution of Hypertext [Kindle Edition]*, by Belinda Barnet (London: Anthem Press, 2013), loc. 138.

⁶⁵ George Landow, “Educational Innovation and Hypertext” In Ilana Synder, ed., *Silicon Literacies: Communication, Innovation and Education in the Electronic Age* (London and New York: Routledge, 2002), 101–115.

⁶⁶ Perhaps this typo is channeling Marshal McLuhan’s “The Medium is the Massage.”

⁶⁷ Edward Jennings, “The Text Is Dead; Long Live the Techst,” *Postmodern Culture* 2, no. 2 (1999): para. 34.

⁶⁸ Michael Joyce, *afternoon, a story*, 6th ed. (Watertown: Eastgate Systems, 2007) N.B. I am using Joyce’s typographic convention of spelling the title in lower-case.

expectations. The agenda of the second wave also invoked loaded terminology. As Aarseth states, “interactivity in this early criticism ‘is a purely ideological term.’”⁶⁹ These claims have led:

to the conclusion that ‘hyper’ is associated with extremism, manic activity and disorder. Hypertext can thus be seen as being disordered by hyperlinks, destroying classification by the innate hyperactivity of its imbedded leaps.⁷⁰

The conflation of theory and hypertext disrupted the spirit of making and building that characterised much early work in the field. Moreover, the rise of the Web canonised a limited vision of what hypertext *could* be and drained the field of any disruptive spirit that existed in the development of early hypertext systems.

The first wave of literary hypertext criticism mirrored a larger shift within the humanities and bootstrapped hypertext principles onto the poststructuralist *zeitgeist*.⁷¹ The poststructuralists’ literary stardom in the 1990s was used as a foundation for early work on literary hypertext and it immediately legitimised a marginal interdisciplinary interest.⁷² This appeared to be the perfect mix as theory and practice, as literary scholars could mix their theoretical interests with cutting-edge design as a holistic argument for inherent traits within texts. Such an approach narrowed the possibilities of using the computer as a tool for textual interpretation as assumed that the computer worked as an infinitely capable machine, rather than a limited resource. As David Hoover argues, “unfortunately for the history of digital humanities, the advent of widely available electronic texts coincided with the Chomsky years in linguistics and the theory years in literary studies.”⁷³ The abstraction of critical theory runs counter to the raw materiality of new media such as the computer, and assumes that the abstract nature of the computer allows for infinite processing power. Moreover, there is a fundamental mismatch between the structuralist principles of computer programming, where rigid linguistic structures are essential for pragmatic reasons and looser poststructuralist theory, as programming languages require stable textual entities in order to understand commands.⁷⁴ Grand overarching projects, such as the ability to interact with computational machines using natural languages and Artificial Intelligence have taken longer to manifest than more computational-minded pursuits that use the brute force ability of computation such as stylometrics (the computational analysis of patterns of word and grammar use found in a given author or genre’s corpus) and automated

⁶⁹ Hayles, *Electronic Literature*, 32.

⁷⁰ Glazier, *Digital Poetics*, 59.

⁷¹ For a summary of the arguments for the convergence between critical theory and hypertext see George Landow, *Hypertext 3.0: Critical Theory and New Media in an Era of Globalization* (Baltimore: The Johns Hopkins University Press, 2006).

⁷² See David R. Shumway, “The Star System in Literary Studies,” *PMLA* 112, no. 1 (January 1997): 85–100.

⁷³ David Hoover, “The End of the Irrelevant Text: Electronic Texts, Linguistics, and Literary Theory,” *Digital Humanities Quarterly* 1, no. 2 (Summer 2007): para. 1, <http://digitalhumanities.org/dhq/vol/1/2/000012/000012.html>.

⁷⁴ Thanks to Dave Millard for the technical insight.

concordances (building organised lists of words that appear within a set of texts). Alice Bell has argued that the confusion about the immateriality of early criticism of hypertexts and a lack of clarity led to a “critical stalemate” in early criticism of digital works.⁷⁵

The second-generation hypertext ideology was defined through a few theoretical concepts borrowed from poststructuralist writing: lexia, rhizome, death of the author, and intertextuality. All four concepts seductively promised to break free from the traditional linear author-dictated structure of text. Roland Barthes proposed the lexia as a thought-experiment, rather than an embodiment of text, as arbitrary and dynamic chunks of text.⁷⁶ Barthes was referring to the plethora of potential interpretations a particular text can generate rather than a literal manifestation of the principle. George Landow introduced lexia into the vocabulary of hypertext theory to describe “texts composed of blocks of text” in actual hypertext systems.⁷⁷ Landow could emphasise “blocks of text” as early hypertext system used familiar metaphors of cards and other discrete units rather than the lengthier units of webpages.⁷⁸ While the lexia provided an analogy for small-scale link-and-node connections, Deleuze and Guattari’s figure of the rhizome offered a theoretical framework for discussing the network as a unified entity. The rhizome rejects linearity, and is suggestive of democratic connectivity whereby any point can link to any other point of the network, as well as its ability to connect to other similar networks.⁷⁹ Deleuze and Guattari’s seductive rhetoric about the manipulable elements of the rhizome disguised the fact that it was primarily a theoretical gesture rather than a literal entity. Many of the elements of liberating the reader through these new forms were predicated through Roland Barthes’ “Death of the Author” which suggests that the author’s biography and bibliography is immaterial and the reader should be empowered as the hermeneutic “key” to the text. Textual meaning materialises only once the text has a reader.⁸⁰ Likewise, intertextuality reframes discussion of connections between texts, as Julia Kristeva defines “an intertextuality: in the space of a given text, several utterances, taken from other texts, intersect and neutralize one another.”⁸¹ Intertextuality’s central innovation, although describing a concept familiar in antiquity, was to suggest that a text does not exist in isolation but on a spatial plane intersecting with other texts through quotations, allusions and other textual resonances. Kristeva posits that “writing subject, addressee, and exterior” exist on a three-dimensional plane, as the word

⁷⁵ Alice Bell, *The Possible Worlds of Hypertext Fiction* (Basingstoke: Palgrave Macmillan, 2010), 185.

⁷⁶ Roland Barthes, *S/Z*, trans. Richard Miller (London: Jonathan Cape, 1975), 13–14.

⁷⁷ Landow, *Hypertext 3.0*, 3.

⁷⁸ *HyperCard* being the most obvious example of this phenomenon, which maybe relies on the low processing power and hardware limitations of early hypertext software to allow for larger nodes.

⁷⁹ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: Continuum, 1987), 7–13.

⁸⁰ Roland Barthes, “The Death of the Author,” in *Image, Music, Text*, trans. S Heath (Glasgow: Fontana/Collins, 1977), 142–148.

⁸¹ Julia Kristeva, *Desire in Language: A Semiotic Approach to Literature and Art*, trans. Thomas Gora, Alice Jardine, and Leon S. Roudiez (Oxford: Basil Blackwell, 1982), 36.

simultaneously communicates with the reader and other uses of the word. Intertextuality suggests that due to these resonances, text can be read horizontally on the page to see the word or phrase in context, or vertically off the page through linking it to other similar or identical utterances in other sources.⁸² These four concepts were influential in second-generation hypertext scholarship to allow critics to make outlandish claims based upon their wishes for the future of computing rather than any technical reality.

The appropriation of continental theory for hypertext is problematic. The arbitrary nature of lexia is the opposite of the author-dictated chunks of hypertext fiction. The first narrative lexia of *afternoon* always begins “I try to recall winter.” and finishes with the question “Do you want to hear about it?”⁸³ This node does not expand or change through a rereading. Harpold suggests that this is due to lexia in early hypertext fiction being entirely dictated by the author instead of the reader.⁸⁴ Lexia’s associations with poststructuralist theory and the promise of endless interpretation are problematic, and node, a term inherited from graph theory does not have such strong connotations of the text having agency and dynamism of its own, especially when many hypertext systems do not contain such inherent dynamism. The term “node” offers a neutral term for an entity, textual or otherwise, that is involved in a link. Furthermore, Umberto Eco surmises, “it is doubtful that there are no points or positions in a rhizome; there are only lines [... since] intersecting lines make points.”⁸⁵ This predisposition towards lines has been rampant in early hypertext theory, where the link has been privileged over the node, so the dominance of the lexia runs counter to the focus on linking in the scholarship.⁸⁶ The scale of connectivity on the Web has allowed for the claims of the rhizome to be tested with regards to its structure. Albert-László Barabási’s work on scale-free networks has demonstrated that the democratic structure of the Web does not work with the scale of the Web, but instead, popular websites become more popular over time.⁸⁷ Landow’s proposition that “hypertext creates an almost embarrassingly literal embodiment” of the readerly text is hyperbolic.⁸⁸ Most literary hypertexts with multiple reading paths are still dictated by the author’s intentions. Furthermore, the “Death of the Author” for early hypertext theory runs counter to the romantic conception of authorship and authority of the *Storyspace* School. The multiple reading paths of *afternoon* revolve around a single event, a car crash. The reader remains an explorer of the world that has

⁸² Ibid., 66.

⁸³ At the very least the 6th edition, since there is always a possibility that it could be edited in a future edition. Joyce, *afternoon*.

⁸⁴ Terence Harpold, *Ex-Foliations: Reading Machines and the Upgrade Path* (Minneapolis: University of Minnesota Press, 2009), 176.

⁸⁵ Umberto Eco, *Semiotics and the Philosophy of Language* (London and Basingstoke: MacMillan, 1984), 81.

⁸⁶ Mariusz Pisarski, “New Plots for Hypertext?,” in *Proceedings of the 22nd ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2011), 313.

⁸⁷ Albert-László Barabási, “Scale-Free Networks: A Decade and Beyond,” *Science* 325 (2009): 412–413.

⁸⁸ Landow, *Hypertext 3.0*, 52.

been carefully structured by an author with little options to deviate from these pathways. *Storyspace* creates an asymmetrical environment where readers cannot create new connections, thus falling into what Michael Joyce calls an “exploratory hypertext,” or digital environments that allow the user to only follow paths set by the author, which is not conducive for the classic hypertext ideology.⁸⁹ While it is possible for the reader to become an author, they must recast the work as their own and the reading-writing division remains. Intertextuality provides us with a more useful framework, although in a modified version. What Mary Orr calls “cultural recycling,” or playful reuse of tropes from other cultural artefacts, is prevalent throughout digital culture.⁹⁰ Gérard Genette, Richard Dyer, and Mary Orr have proposed theories for understanding intertextuality and cultural recycling.⁹¹ Genette uses the materiality of the palimpsest, a document that contains material traces of another erased document underneath, as the basis for his theory of literary appropriation. He argues that re-inscribing on top of pre-existing texts is one of the main tropes of literature, particularly the use of pastiche and parody. Conversely, Richard Dyer explores pastiche as a “kind of imitation that you are meant to know is an imitation.”⁹² A palimpsest is a form of rewriting where the new supplants the old, while Dyer’s pastiche writes alongside and reflects upon the original. Orr argues that intertextuality, as a form is central to literature as “reflexivity is indeed the essential motor of language itself for its own rejuvenation.”⁹³ Orr suggests here that literary language develops through reference to the classics in a new context in order to extend the meaning of both the original and the reworked text. These theories of intertextuality offer two fundamental concepts, upon which hypertext systems can, and should, be built. The first of which is the citation, allusion, or direct *explicit link*. This is the most recognisable feature of traditional hypertext systems, but the more interesting, and useful within a literary framework, is the *implicit link*.⁹⁴ While the explicit link has been authorised in the publication or writing process, the implicit link represents connections made entirely by the reader through serendipitous discovery, rereading and juxtaposition. These connections may be shared by other readers, but can also be an entirely personal connection. Espen Aarseth’s conditional links, which require the user to fulfil certain conditions in order to view a link is a restricted example of an implicit link.⁹⁵ Although the link eventually becomes visible, part of the conditions require the user to make a connection that might not have been immediately obvious. The implicit link allows for the reader to make their own connections and

⁸⁹ Joyce, *Of Two Minds*, 41.

⁹⁰ Mary Orr, *Intertextuality: Debates and Contexts* (London: Polity, 2003), 21.

⁹¹ Genette, *Palimpsests*; Richard Dyer, *Pastiche* (New York: Routledge, 2007); Orr, *Intertextuality*.

⁹² Dyer, *Pastiche*, 1.

⁹³ Orr, *Intertextuality*, 28.

⁹⁴ Landow briefly notes this distinction in *Hypertext 3.0*, 55.

⁹⁵ Espen J. Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore and London: The Johns Hopkins University Press, 1997), 65.

to move away from pre-arranged pathways, as in the use of a search feature to connect two disparate parts of a hypertext fiction.

The Storyspace Paradigm

The most recognisable version of literary hypertext comes from the *Storyspace* School, that is, works produced for the *Storyspace* software package and usually published by Eastgate Systems.⁹⁶ *Storyspace* and literary hypertext are synonymous, thus it is important to consider the innovations and limitations of the software and its ideology.⁹⁷ *Storyspace* has always had modest hardware requirements;⁹⁸ instead of pushing the limits of the available hardware with high computational power, it focuses on innovative linking and processing of text and images. Guardfields were *Storyspace*'s central innovation as they allowed the author to specify conditions, such as visiting certain nodes previously, for the reader to be able to explore additional links in the text.⁹⁹ Given the limited size of the novellas such as *afternoon, a story*, the guardfields expand the life span of the fiction.¹⁰⁰ A further revealing aspect of *Storyspace* is Bernstein's comment that the software encourages the use of the keyboard and the mouse to create a two-handed reading position, thus creating a link with reading as a physical activity.¹⁰¹ This high level of physical engagement removes *Storyspace* from later web fiction, whereby one can only click through a limited number of options, often restricting agency more than in print. Despite the availability of these features, they were barely used outside of *afternoon*, which functioned as a technical demonstration for *Storyspace*.¹⁰² Through these simple tenets, the *Storyspace* School created the prevailing ideology in hypertext narrative.

Soren Pold states "imagine [...] hyperfiction without Eastgate's *Storyspace* [...]. This software conceptualizes the user and the material with which users work."¹⁰³ A revisionist history, overemphasising hypertext fiction, and *afternoon* in particular, as the genesis of digital fiction has led to a growing resentment of hypertext. *Storyspace* remains the dominant voice in the community alongside any Web fiction that emphasises linking, since Eastgate preserve their own works for future generations. The titles Bernstein strives to preserve (Michael Joyce's *afternoon*,

⁹⁶ That is, fiction created on the *Storyspace* software and for Eastgate Systems, arguably the most influential software and publisher of literary hypertext respectively. See Hayles, *Electronic Literature*, 6.

⁹⁷ N.B. Given the author's linguistic limitations, this thesis takes an admittedly biased Anglo-centric approach to hypertext literature, which gives a greater affordance to the *Storyspace* School than a more global survey, which would also look at the thriving worldwide hypertext scene.

⁹⁸ Bernstein, "*Storyspace* 1," 172.

⁹⁹ *Ibid.*, 173.

¹⁰⁰ David Kolb notes that "Michael Joyce's literary hypertext novella *afternoon* averages 48 words per node (25644 words in 538 nodes)", the size of a short novella in "The Revenge of the Page," in *Proceedings of the Nineteenth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2008), 91.

¹⁰¹ Bernstein, "*Storyspace* 1," 174.

¹⁰² *Ibid.*, 176–177.

¹⁰³ Soren Pold, "Interface Realisms: The Interface as Aesthetic Form," *Postmodern Culture* 15, no. 2 (2005): para. 33.

Stuart Moulthrop's *Victory Garden* and Shelley Jackson's *Patchwork Girl*¹⁰⁴ will remain "in print" as long as Eastgate remain in business, increasing their cultural capital as works of importance through survival and revision.¹⁰⁵ Meanwhile, other hypertext publishers such as Voyager did not survive, so their hypertext packages have become unavailable and have been marginalised in the history of hypertext scholarship. The on-going strength of the *Storyspace* School serves not only as an economic interest, but also increases its cultural capital. The economic imperative of Eastgate runs counter to open impulse fostered by the community in recent years. Eastgate offered their authors standard royalties off their profits and furnished their publications with traditional ISBNs, allowing the hypertexts to be catalogued alongside print works. Works published by Eastgate tend to be Modernist and literary fiction, and since Eastgate have remained such a visible example of hypertext fiction, there is a myth that hypertext fiction is required to remain generic.¹⁰⁶ Just as much Modernist fiction has not gained a larger audience, hypertext fiction is a niche genre. It comes as no surprise that the most common referent for hypertext fiction is the child-oriented Choose-Your-Own-Adventure (CYOA) series, which moves away from this Modernist aesthetic.¹⁰⁷ Thomas Swiss further offers, "the sponsorship structure of Eastgate has contributed to [...] a surprising consensus among hypertext theorists."¹⁰⁸ The small inner core of early literary hypertext developed a *samizdat* culture, whereby literary hypertexts were often distributed through interpersonal networks rather than published. This is explicitly acknowledged in the colophon of *afternoon, a story*, which notes that the fiction was distributed to selected beta users of *Storyspace* in 1987, delegates of the second ACM Conference on Hypertext in 1989 and with *IF, The Journal of Interactive Fiction and Creative Hypertext*.¹⁰⁹ These early readers of *afternoon* often had access to a symmetrical version of *Storyspace* where they could edit and save the contents of the fiction, but with the commercialization of hypertext in the early 1990s, the reading and writing programs were separated. This has led to accusations that *Storyspace* is hypertext in a laboratory setting, since these *Storyspace* networks were both closed off to larger networks (including other *Storyspace*

¹⁰⁴ Shelley Jackson, *Patchwork Girl* (Watertown: Eastgate Systems, 2002).

¹⁰⁵ Thomas R. Adams and Nicolas Barker, "A New Model for the Study of the Book," in *A Potencie of Life: Books in Society*, ed. Nicolas Barker (London: The British Library, 2001), 31. At the time of re-writing a draft of this chapter (4 December 2013), however, versions compatible with the very latest versions of Mac OS X and Windows were not available, effectively rendering the titles out of print until new versions became available.

¹⁰⁶ See for example, the original brief for *Storyspace* at the first ACM Hypertext conference, where *Storyspace* is called a continuation of the tradition of experimental literature in Bolter and Joyce, "Hypertext and Creative Writing," 44.

¹⁰⁷ C.f. Nick Montfort, *Twisty Little Passages: An Approach to Interactive Fiction* (Cambridge: MIT Press, 2003), 71; Bell, *Possible Worlds*, 2; Simon Penny, "Representation, Enaction, and the Ethics of Simulation," in *First Person: New Media as Story, Performance, and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan (Cambridge: MIT Press, 2004), 77; Espen J. Aarseth, "Narrative Literature in the Turing Universe," in *The Novel Volume 2: Forms and Themes*, ed. Franco Moretti (Princeton and Oxford: Princeton University Press, 2006), 854; Robert Coover, "Hyperfiction: Novels for the Computer," *New York Times*, August 29, 1993, <http://www.nytimes.com/books/98/09/27/specials/coover-hyperfiction.html>; Aarseth, *Cybertext*, 66.

¹⁰⁸ Thomas Swiss, "Music and Noise: Marketing Hypertexts," *Postmodern Culture* 7, no. 1 (1996): para. 20.

¹⁰⁹ Joyce, *Afternoon*.

works) and to larger hypertexts built on the World Wide Web when hypertext has often emphasised interconnection between texts.¹¹⁰

Espen Aarseth's *Cybertext* marked the start of a reappraisal of hypertext theory's dominance in early digital literature criticism. The attack stemmed in part from the growing frustration that interesting work in the field of digital literature was being conflated in the term hypertext. Most prominently, hypertext theorists' appropriation of Interactive Fiction, a genre with a rich history that originated earlier than literary hypertext, as a sub-genre of hypertext literature was crass and rightly corrected.¹¹¹ *Cybertext* is "a perspective on textuality,"¹¹² more specifically, "the concept of cybertext focuses on the mechanical organization of the text, by positing the intricacies of the medium as an integral part of the literary exchange."¹¹³ Through cybertext theory, Stuart Moulthrop's *Hegirascope*,¹¹⁴ which restricts the reader to a limited time to read the current node, can be assessed in terms of user experience beyond assessing the qualities of the links. Although *Hegirascope* contains pages with several links, Moulthrop's model was predicated on reducing the reader's agency by only allowing them in-between three and thirty seconds before refreshing and presenting the next node in a pre-determined sequence. This mechanism was not created by the Web's hypertext affordances, but rather is a feature native to the Hypertext Transfer Protocol (HTTP) that governs document delivery over the Web.¹¹⁵ Aarseth's framework replaced hypertext theory as the dominant critical approach to digital literature and along with Lev Manovich's *Language of New Media*,¹¹⁶ facilitated closer engagement with digital objects. In the aftermath of this shift, Eskelinen declared the death of "the golden age of media essentialism;" that is, an unerring belief that a set of characteristics are inherent to a particular medium, regardless of evidence to the contrary.¹¹⁷ Eskelinen notes the blind faith of poststructuralist hypertext theory in the ability for the computer to literalise these theories in powerful new ways impossible by paper with no account of their materiality. Cybertext theory attempted to correct the problems of media essentialism by creating a theory broad enough to consider all media. This comes with a caveat, however, as naturally Aarseth has a tendency to emphasise the newness of digital literature and videogames in his new taxonomy of mechanical

¹¹⁰ Glazier, *Digital Poetics*, 88.

¹¹¹ Montfort, *Twisty Little Passages*, 9.

¹¹² Aarseth, *Cybertext*, 24.

¹¹³ *Ibid.*, 1.

¹¹⁴ Stuart Moulthrop, "Hegirascope [version 2]," 1997, <http://www.cddc.vt.edu/journals/newriver/moulthrop/hgs2/hegirascope.html>.

¹¹⁵ The basic template for causing such an effect is apparent from exploring the source code in the header of the webpages: "<META HTTP-EQUIV='Refresh' CONTENT='30; URL=HGS012.html'>" The content parameter allows the designer to adjust the timeperiod before the next page appears and Moulthrop oscillates between three seconds for the two introductory nodes and thirty seconds for the rest. *Ibid.*

¹¹⁶ Lev Manovich, *The Language of New Media* (Cambridge: MIT Press, 2001).

¹¹⁷ Markku Eskelinen, "Cybertext Theory: What An English Professor Should Know Before 'Trying,'" *Electronic Book Review* (2001), <http://www.electronicbookreview.com/thread/electropoetics/notmetaphor>.

textual features rather than demonstrating its full application in non-digital literature outside of print such as performance and oral literature.¹¹⁸ Although Aarseth includes dynamic print texts such as William Gibson's *Agrippa* and Vladimir Nabokov's *Pale Fire*, the print examples are more homogenous than the digital texts. The result of this revised idea of digital fiction was the formation of the alternative coalescence around "electronic literature," a form that allowed for a larger variety of works.

Beyond Classic Hypertext

The Emergence of Digital Humanities

While electronic literature has replaced hypertext as the term for creative efforts in digital literature, digital criticism and scholarship has been reframed around the digital humanities. The meta-critical debates regarding definitions of digital humanities and its origins have been rehearsed in a large body of literature and are outside the concern of this thesis, which is interested instead with the individual methods developed by digital humanities practitioners.¹¹⁹ As Matthew Kirschenbaum argues, "digital humanities" is a tactical term,¹²⁰ a role hypertext fulfilled in the 1990s. The term is often evoked to receive funding or other career furthering goals, while staying relatively marginal to the humanities as a whole. Digital humanities originated in humanities computing, which focused on using computational methods to analyse traditional texts. At the turn of the century, however, humanities computing combined with emerging fields such as media archaeology, game studies and reconsidered established fields such as bibliography. Steven Jones argues that this transition began around 2004 as the initial euphoria of an immaterial view of "cyberspace" became more nuanced and "based on relatively down-to-earth ideas of what networked technology could do."¹²¹ Through this shift, the digital humanities now have been transformed into a loose collective of disciplines positioned to critique not only individual disciplines but also the role of the academy in the twenty-first

¹¹⁸ Aarseth, *Cybertext*, 1, 68–69.

¹¹⁹ See Anne Burdick et al., *Digital Humanities* (Cambridge: MIT Press, 2012); Matthew K. Gold, ed., *Debates in the Digital Humanities* (Minneapolis and London: University of Minnesota Press, 2012); Patrick Svensson, "The Landscape of Digital Humanities," *Digital Humanities Quarterly* 4, no. 1 (Summer 2010), <http://digitalhumanities.org/dhq/vol/4/1/000080/000080.html>; Patrick Svensson, "Envisioning the Digital Humanities," *Digital Humanities Quarterly* 6, no. 1 (Winter 2012), <http://digitalhumanities.org/dhq/vol/6/1/000112/000112.html>; Susan Schreibman, Ray Siemens, and John Unsworth, eds., *Companion to Digital Humanities*, Hardcover (Oxford: Blackwell Publishing Professional, 2004), <http://www.digitalhumanities.org/companion/>; Paul S. Rosenbloom, "Towards a Conceptual Framework for the Digital Humanities," *Digital Humanities Quarterly* 6, no. 2 (2012), <http://www.digitalhumanities.org/dhq/vol/6/2/000127/000127.html>; Thomas Bartscherer and Roderick Coover, eds., *Switching Codes: Thinking Through Digital Technology in the Humanities and the Arts* (Chicago: The University of Chicago Press, 2011); David M. Berry, ed., *Understanding Digital Humanities* (Basingstoke: Palgrave Macmillan, 2012); N. Katherine Hayles, *How We Think: Digital Media and Contemporary Technogenesis* (Chicago and London: The University of Chicago Press, 2012).

¹²⁰ Matthew G. Kirschenbaum, "Digital Humanities As/Is a Tactical Term," in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis and London: University of Minnesota Press, 2012), 415.

¹²¹ Steven Jones, *The Emergence of the Digital Humanities* (New York: Routledge, 2013), 3.

century.¹²² One of the major lessons from the failure of the hypertext ideology for digital humanists is to focus on method over theory.¹²³ Mark Sample argues that the digital humanities should try and avoid the institutionalisation that plagued hypertext:

We belong on the margin... The digital humanities should not be about the digital at all. It's about innovation and disruption. The digital humanities is really an insurgent humanities.¹²⁴

This innovation and disruption can be seen throughout creative work in the digital humanities of “deformative criticism,” critical work that transforms the original object into something new and often subjective, revealing overlooked features hidden in the work.¹²⁵ McGann and Samuels posit four types of textual transformation—reordering, isolating, altering and adding—as the pillars of deformance.¹²⁶ These four techniques allow the critic to read through the work on previously unexplored levels. Moreover, these deformances enact the principles of the manipulable gesture and can be seen as part of receptional hypertext as the deformative reading transforms the original text into something new but inherently connected to the original.

In particular, hypertext resonates with media archaeology, one of the newer fields collected under the digital humanities title. Wolfgang Ernst suggests that media archaeology “is meant as an epistemologically alternative approach to the supremacy of media-historical narratives.”¹²⁷ While media history has often focused on a monolithic history, media archaeology offers non-linear histories “in experimenting with alternatives, in quirky ideas, in excavating novel paths outside the mainstream,”¹²⁸ and the excavation of “lost ideas, unusual machines and re-emerging desires and discourses searching for elements that set it apart from mainstream technological excitement and hype.”¹²⁹ Jussi Parikka states media archaeology aims “to look at ‘old media’ such as literature as media systems for transmitting, linking and institutionalizing information (with a nod towards Harold Innis).”¹³⁰ In others words, media archaeology argues that there is no such thing as “new media,” as every new technology has often forgotten precursors. Friedrich Kittler, an influence on media archaeology, coined the term Discourse Networks which “can also designate the network of technologies and institutions that allow a given culture

¹²² Patrick Svensson, “Beyond the Big Tent,” in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis and London: University of Minnesota Press, 2012), 47.

¹²³ Tom Scheinfeldt, “Why Digital Humanities Is ‘Nice,’” in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis and London: University of Minnesota Press, 2012), 59.

¹²⁴ Mark Sample, “I’m Mark, and Welcome to the Circus. Response to I’m Chris. Where Am I Wrong?,” *HASTAC*, September 8, 2010, <http://hastac.org/blogs/cforster/im-chris-where-am-i-wrong/>.

¹²⁵ Lisa Samuels and Jerome J. McGann, “Deformance and Interpretation,” *New Literary History* 30, no. 1 (Winter 1999): 25–56.

¹²⁶ *Ibid.*

¹²⁷ Wolfgang Ernst, *Digital Memory and the Archive*, ed. Jussi Parikka (Minneapolis: University of Minnesota Press, 2013), 55.

¹²⁸ Jussi Parikka, *What Is Media Archaeology?* (Cambridge: Polity, 2012), 2.

¹²⁹ Garnet Hertz and Jussi Parikka, “Zombie Media: Circuit Bending Media Archaeology into an Art Method,” *Leonardo* 45, no. 5 (2012): 427.

¹³⁰ Parikka, *What Is Media Archaeology?*, 68.

to select, store, and process relevant data.”¹³¹ From the foundation of the printing press to the beginning of the twentieth century, books and newspapers represented the dominant discourse network. At the turn of the century, print culture’s role as the dominant discourse network lessened as mass media such as the film, radio, television and the Internet became integrated into a much more complex media ecology. It is essential to view books as only part of a discourse network since they cannot exist without this context. From a hypertextual perspective there is much to gain from a media archaeological perspective. Traces of hypertext in old media demonstrate the archaeological significance of the platform and recent work in the archaeology of the book offers a useful toolset for the analysis of hypertext.

Book History

The examination of the book from a historical perspective takes two main forms: bibliography and the history of the book as an interdisciplinary field. Bibliographers read textual and extratextual evidence to deduce the intentions of the author and produce an accurate representation of an ideal version of the text. Book historians consider agents outside of the text as part of the production process and examine their role in the production and dissemination of ideas. Bibliography as a scholarly discipline dates back to editing of the classics and the institutionalisation of the field through a coalescence of antiquarians in the nineteenth century. The field developed into the formalist New Bibliography from the early to mid twentieth century where pioneers including W. W. Greg, J. Dover Wilson and Ronald McKerrow focused on consecrating Elizabethan authors through striving for textual purity. They had a deep conviction that their work was thoroughly empirical and argued that their discipline was a scientific pursuit: “like detective work – indeed, it has forensic applications – bibliographical analysis combines drudgery with excitement and can turn up bits of information that, though seemingly minor, may have considerable significance.”¹³² The core idea of bibliography until the late-twentieth century was reconstructing the “copy-text,” that is, the text that represents the author’s intentions most clearly.¹³³ Bibliographers aimed to strip away any influence of the publishers, printers, and others composers to create a text that demonstrated the author’s “pure” text. This orthodoxy was challenged in the latter half of the century from two separate angles: the sociology of text and genetic criticism. Anglo-American scholarship followed a pathway set by Don McKenzie and Jerome McGann towards the “sociology of text,” that posits it is important to consider the development of a text’s reputation through not only re-evaluating the role of publishers and printers, among others, but also through tracking the developments in the

¹³¹ Friedrich Kittler, *Discourse Networks 1800/1900*, trans. Michael Metteer and Chris Cullens (Stanford: Stanford University Press, 1990), 368.

¹³² Wiliam Proctor Williams and Craig S. Abbott, *An Introduction to Bibliographical and Textual Studies*, 4th ed. (New York: The Modern Language Association of America, 2009), 15.

¹³³ W. W. Greg, “The Rationale of Copy-Text,” *Studies in Bibliography* 3 (1950-1951): 19–37.

text's material form over reprints and what would traditionally be considered textual corruptions.¹³⁴ Concurrently, the European school of genetic criticism, most controversially represented by Hans Gabler and his computerised synoptic edition of *Ulysses*,¹³⁵ argued for an approach to editing that mapped out the processes of revision and accretion that led to the development of the final text.¹³⁶ The genetic edition is amenable for hypertext as it presents the revision process through the connection of multiple manuscript states.

The complicated origins of book history have been well recited in recent years.¹³⁷ Lucien Febvre and Henri-Jean Martin's *The Coming of the Book* and Elizabeth Eisenstein's *The Printing Press as an Agent of Change* were catalysts for wider debate about the origins of print, particularly as a social and technological instrument.¹³⁸ Both texts argue for a technological deterministic understanding of the book's importance in the development of the early modern period and one of the vital features of the Renaissance. The transformation from bibliography to book history can be seen in the shift in interest towards print culture as a social phenomenon. Rather than focusing on the insular nature of the text and reading its material properties, book history instead proposed to look at the social relationships that form around print. This elevated agents in the book trade who were overlooked, exemplified through the return of the reader, and particularly annotator, to bibliographical and historical study.¹³⁹ One of the most influential

¹³⁴ D. F. McKenzie, "Typography and Meaning: The Case of William Congreve," in *Making Meanings: "Printers of the Mind" and Other Essays*, ed. Peter D. McDonald and Michael Suarez (Amherst and Boston: University of Massachusetts Press, 2002), 198–236; McKenzie, *Bibliography and the Sociology of Texts*; Jerome McGann, *Radiant Textuality: Literature after the World Wide Web* (Basingstoke: Palgrave, 2001).

¹³⁵ James Joyce, *Ulysses: A Critical and Synoptic Edition*, ed. Hans Walter Gabler, Wolfhard Steppe, and Claus Melchior, 3 vols. (New York and London: Garland, 1984); See Bruce Arnold, *The Scandal of Ulysses: The Life and Afterlife of a Twentieth Century Masterpiece*, 2nd ed. (Dublin: The Liffey Press, 2004), chap. 6–7 for an overview of the controversy of this edition.

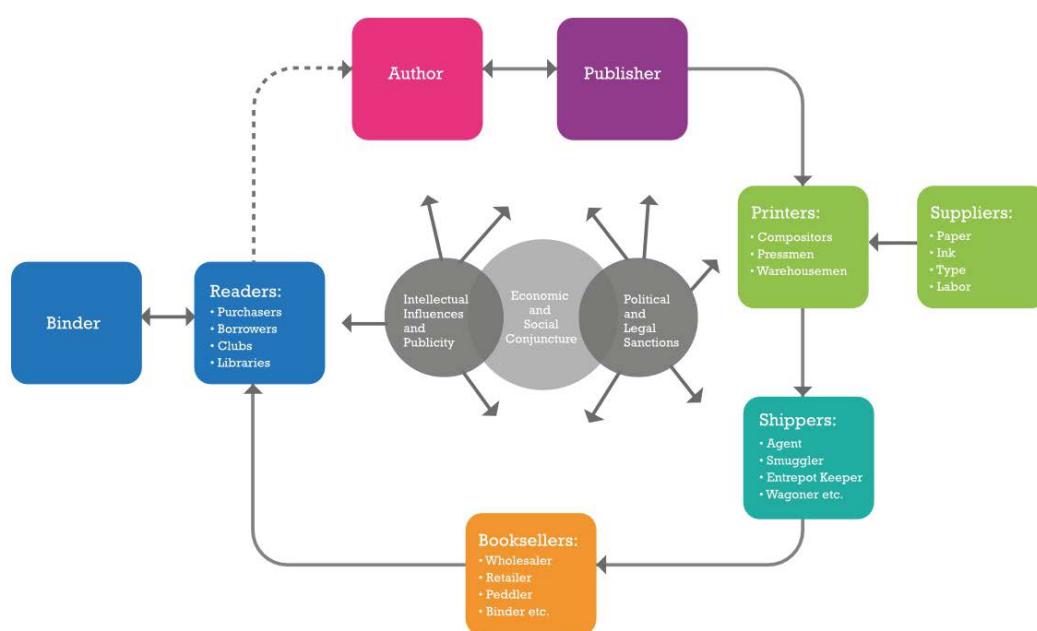
¹³⁶ See Geert Lernout, "Continental Editorial Theory," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 61–78; Louis Armand, ed., *Joycemia: James Joyce, Hypermedia and Textual Genetics* (Prague: Charles University, 2004); Krapp, "Hypertext Avant La Lettre"; John Bryant, "Rewriting *Moby-Dick*: Politics, Textual Identity, and the Revision Narrative," *PMLA* 125, no. 4 (October 2010): 1043–1060.

¹³⁷ D. F. McKenzie, "'What's Past Is Prologue': The Bibliographical Society and History of the Book," in *Making Meanings: "Printers of the Mind" and Other Essays*, ed. Peter D. McDonald and Michael Suarez (Amherst and Boston: University of Massachusetts Press, 2002), 259–275; Darnton, "What Is the History of Books?"; Leslie Howsam, "What Is the Historiography of Books? Recent Studies in Authorship, Publishing, and Reading in Modern Britain and North America," *The Historical Journal* 51, no. 4 (2008): 1089–1101; Howsam, *Old Books & New Histories*; Joseph A. Dane, *What Is a Book? The Study of Early Printed Books* (Notre Dame: University of Notre Dame Press, 2012); Roger Chartier and Peter Sallibrass, "What Is a Book?," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 188–204; David Finkelstein and Alistair McCleery, eds., *The Book History Reader*, 2nd ed. (London: Routledge, 2006); Michael Felix Suarez, "Historiographical Problems and Possibilities in Book History and National Histories of the Book," *Studies in Bibliography* 56, no. 1 (2003): 140–170; Leah Price, "From *The History of a Book* to a 'History of the Book,'" *Representations* 108, no. 1 (November 2009): 120–138; David Pearson, *Books as History: The Importance of Books beyond Their Texts* (London: The British Library & Oak Knoll Press, 2008); Adams and Barker, "New Model."

¹³⁸ Lucien Febvre and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing, 1450-1800*, ed. Geoffrey Nowell-Smith and David Wootton, trans. David Gerard (London: Verso, 2010); Elizabeth L. Eisenstein, *The Printing Press as an Agent of Change* (Cambridge: Cambridge University Press, 1980).

¹³⁹ Lisa Nakamura, "'Words with Friends': Socially Networked Reading on Goodreads," *PMLA* 128, no. 1 (2013): 238–243; Paul Saenger, *Space Between Words: The Origins of Silent Reading* (Stanford: Stanford University Press, 1997); Christian Vandendorpe, "Some Considerations About the Future of Reading," *Digital Studies/La Champ Numérique* 2, no. 2 (2011), http://www.digitalstudies.org/ojs/index.php/digital_studies/articles/view/186/250; Anouk Lang, ed.,

theories to emerge from book history is Robert Darnton's communication circuit (figure 1), which traces the agents who interact through the production of literature.¹⁴⁰ Darnton's circuit has come under criticism as it focuses primarily on the people and processes that emerge around the book trade rather than the book itself,¹⁴¹ but it helps to demonstrate the relationships between the various agents, both mechanical and human that shape the processes of the book trade. The model does not represent the ideal book trade wished for by bibliographers, as he includes the parties of "smugglers" and "peddlers" in his model, representing the seedy underbelly of the book trade that would typically be dismissed as piratical in bibliographical versions of the text's transmission despite their pivotal role in shaping the reception history of a text. Darnton's circuit also presents the influence of agents outside of the text, as marked by the three circles in the middle of the diagram: "intellectual influences and publicity," "economic and social conjuncture" and "political and legal sanctions." This distances book history from the largely acontextual approach of bibliography and places the history of textuality within a wider context.



 Adapted from Robert Darnton's communications circuit (1982)

Figure 1 Robert Darnton's communication circuit¹⁴²

From Codex to Hypertext: Reading at the Turn of the Twenty-First Century (Amherst and Boston: University of Massachusetts Press, 2012); David S. Miall, "Empirical Approaches to Studying Literary Readers: The State of the Discipline," *Book History* 9, no. 1 (2006): 291–311; H. J. Jackson, *Marginalia: Readers Writing in Books* (New Haven and London: Yale University Press, 2002).

¹⁴⁰ Darnton, "What Is the History of Books?," 12.

¹⁴¹ Adams and Barker, "New Model"; Peter D. McDonald, "Implicit Structure and Explicit Interactions: Pierre Bourdieu and the History of the Book," *The Library* XIX, no. 2, 6th Series (June 1997): 105–121.

¹⁴² Adaptation from Padmini Ray Murray and Claire Squires, "The Digital Publishing Communications Circuit," 2013, <http://www.bookunbound.stir.ac.uk/the-digital-communications-circuit2/>.

Book history, Bibliography & Hypertext

For many years, digital editions and projects mapping aspects of the development of print have coalesced around digital humanities techniques. Matthew Kirschenbaum has led the theoretical charge to consider the materiality of digital literature stating “I would maintain that neither hypertext theory nor cybertext theory yet talks about the materiality of first generation electronic objects with anything near the precision or sophistication scholars habitually bring to bear on more traditional objects of literary or cultural studies.”¹⁴³ Blanchette traces this “trope of immateriality” to William Gibson’s *Neuromancer*, with its “Cyberspace. A consensual hallucination experienced daily by billions” and even further, “dating back at least to the telegraph.”¹⁴⁴ Bibliography can help to correct this, since “the contemporary textual studies community has furnished us with some of the best accounts we have of the nature of texts and textual phenomena.”¹⁴⁵ Kirschenbaum further states the field of digital forensics offers a methodology for digital bibliography: “I remember the first time I opened a computer forensics textbook, and it all just seemed so familiar (‘This is bibliography!’ I said to myself).”¹⁴⁶ This convergence between technical aspects of computing and the needs of bibliographic projects has led to interest in the ways in which traditional bibliography can be represented by digital media. Many successful hypertext projects, such as the *Persus Project* and *William Blake Archive*, revolved around the principles of textual studies, and more recently these principles have been transposed to cataloguing early electronic documents including *Spacemar!* and *Adventure*, an early text-based interactive fiction.¹⁴⁷ Kirschenbaum has also formed a considered bibliographic reading of Michael Joyce’s *afternoon*, relying on the different editions of *afternoon* and archival material from the Michael Joyce collection at the Harry Ransom Centre at the University of Texas.¹⁴⁸ Undoubtedly, there are still bibliographic histories to be written of the major and minor electronic fiction of the Golden Age, many of which will revolve around the problems of preservation and translation to more advanced hardware, such as the *Agrippa* Files at the

¹⁴³ Matthew G. Kirschenbaum, “Materiality and Matter and Stuff: What Electronic Texts Are Made Of,” *Electronic Book Review* (2001), <http://www.electronicbookreview.com/thread/electropoetics/sited>.

¹⁴⁴ William Gibson, *Neuromancer* (London: HarperCollins, 1995), 67; Jean-François Blanchette, “A Material History of Bits,” *Journal of the American Society for Information Science and Technology* 62, no. 6 (2011): 1043.

¹⁴⁵ Matthew G. Kirschenbaum, “Editing the Interface: Textual Studies and First Generation Electronic Objects,” *Text* 14 (January 2002): 19.

¹⁴⁶ Matthew Kirschenbaum comment on Trevor Owens, “The Is of the Digital Object and the Is of the Artifact,” *The Signal: Digital Preservation*, October 26, 2012, <http://blogs.loc.gov/digitalpreservation/2012/10/the-is-of-the-digital-object-and-the-is-of-the-artifact/>.

¹⁴⁷ Gregory Crane, ed., *Persus Digital Library*, vol. 4 (Boston: Tufts, 2005), <http://www.persus.tufts.edu/hopper/>; Morris Eaves, Robert Essick, and Joseph Viscomi, eds., *The William Blake Archive*, 2008, <http://www.blakearchive.org/blake/>; Steve Russell, Martin Graetz, and Wayne Witanen, *Spacemar*, PDP-1, 1962; William Crowther and Martin Woods, *ADVENTURE*, PDP-10, 1977; Jerome McDonough et al., “Twisty Little Passages Almost All Alike: Applying the FRBR Model to a Classic Computer Game,” *Digital Humanities Quarterly* 4, no. 2 (2010), <http://www.digitalhumanities.org/dhq/vol/4/2/000089/000089.html>.

¹⁴⁸ See Matthew Kirschenbaum, “Save As: Michael Joyce’s *afternoon*” in *Mechanisms: New Media and the Forensic Imagination* (Cambridge: MIT Press, 2012), 159–211.

University of California Saint Barbara and Jim Andrew and other's work on bpNichol's "First Screening: Computer Poems."¹⁴⁹

As Kirschenbaum has argued the convergence between hypertext and bibliography is a natural combination. A closer examination of bibliographic discourse offers empirical evidence for some of the tenets of hypertext theory. For example, the sociology of the text emphasises connections, since "literary production is not an autonomous and self-reflexive activity; it is a social and an institutional event."¹⁵⁰ Bibliography and book history explore the social conditions of the production and reception of literature, with bibliography isolating the text from these conditions, while book history revels in exploring these social conditions. Bibliographers distinguish between many of the priorities of hypertext scholarship in a concrete way. When David McKitterick states, "texts are not fixed. They are always mobile - at the time of writing, the time of production, the time of publication, and over the course of time, quite apart from in the hands of different readers," he does not refer to Barthesian concept of the *lexia*, but the variants and indeterminacy that occurs when trying to produce a large quantity of texts in a variety of circumstances that transform a text through copies.¹⁵¹ This is hypertext on a material level that demonstrates how language is reused and texts are reprinted introducing new dimensions to a text in the way that hypertext scholarship often referred to, but in a more abstract manner. When examining the transmission history of a text and revealing the indeterminacy inherent in print, we can see the multi-dimensions behind the text. As Kirschenbaum states, "the historical transmission, inevitable decomposition, and subsequent critical evaluation of written artefacts is the constant mandate of textual studies."¹⁵² Textual scholarship such as bibliography has become vogue again in the digital age as the challenges of the constantly shifting formats of hypertext and digital media challenge traditional assumptions about textuality.¹⁵³ Jerome McGann traces the hypertext lineage back to the New Bibliography as many "works like the *Rossetti Archive* or *The Persens Project* or *The Dickens Web* are fundamentally archival and editorial;" they are not built to be reconfigured by the reader but promote textual stability.¹⁵⁴ The manipulable gesture that exemplifies hypertext is not truly present within these projects as the deep structure of these projects are guided by the archival principles behind the print and manuscript behind the texts. For example, the *William Blake Archive* is primarily organised by Blake's publications. While the historical convergence of bibliography with

¹⁴⁹ Alan Liu et al., "The *Agrippa* Files," 2005, <http://agrippa.english.ucsb.edu/>; bpNichol, "First Screening: Computer Poems," 2004, <http://vispo.com/bp/index.htm>.

¹⁵⁰ Jerome McGann, *A Critique of Modern Textual Criticism* (Virginia: The University Press of Virginia, 1992), 100.

¹⁵¹ David McKitterick, *Print, Manuscript and the Search for Order 1450-1830* (Cambridge: Cambridge University Press, 2003), 97.

¹⁵² Kirschenbaum, "Editing the Interface," 16.

¹⁵³ Proctor Williams and Abbott, *Introduction to Bibliographical*, 69.

¹⁵⁴ McGann, *Radiant Textuality*, 17.

hypertext is clear, book history and hypertext have rarely met outside of empirical research on how hypertext affects reading experiences.¹⁵⁵ Book history covers a wider purview than the archival and editorial nature of much traditional bibliography that could offer a rich framework for hypertext. The social aspects of textual composition and reception offer the possibility to build hypertexts upon the historical conditions of these particular processes. Book history's archaeological impulse in finding important artefacts such as *Little Gidding's Harmonies* and the books of Matthew Parker's library,¹⁵⁶ rather than producing clean versions of literature favoured by bibliography has produced a genealogy of print-based hypertext based around the manipulable gesture that extends beyond discussion of footnotes and other basic linking mechanisms. More recent discussion of the convergence of the traditional codex and eBooks in book historical scholarship has offered a further framework in which to discuss the similarities of book history and hypertext as mass digitisation has led to reconsidering the future of reading on the screen in a way that hypertext systems did in the 1990s.¹⁵⁷

pBooks & eBooks

Hypertext enthusiasts often suggested, "the future of serious writing will lie on the screen."¹⁵⁸ Although this may be connected with a commercial agenda, the view is typically naïve, most notably for the belief that serious writing can only lie on one single medium, disregarding the notebook and diary and other very personal and intimate forms of writing do not always take place on the screen. Just as the manuscript as a form has not become endangered for personal writing, the media landscape will reposition itself to accept the new form rather than displacing an old one. The shift from print to computer reflects this as there are many metaphors of print—desktop, files, folders, webpages—that dominate screen-based computing. Ted Nelson calls this obsession the "paperdigm", based not on the traditional notion of What You See Is What You Get (WYSIWYG) but rather What You See Is What It Will Look Like Once You Print It.¹⁵⁹ The page-oriented screen restricts activities that develop interfaces beyond our current understanding of text. Furthermore, Bonnie Mak argues that the page-screen debate creates a stereotype of the page, and that we should rethink the page across manuscript, print

¹⁵⁵ David S. Miall and Teresa Dobson, "Reading Hypertext and the Experience of Literature," *Journal of Digital Information* 2, no. 1 (2006), <http://journals.tdl.org/jodi/index.php/jodi/article/view/35>.

¹⁵⁶ See William H. Sherman, *Used Books: Marking Readers in Renaissance England* (Philadelphia: University of Pennsylvania Press, 2008), chap. 7–8.

¹⁵⁷ Alan Galey, "The Enkindling Reciter: E-Books in the Bibliographical Imagination," *Book History* 15, no. 1 (2012): 210–247; Whitney Anne Trettien, "A Deep History of Electronic Textuality: The Case of Eng/ish Reprints Jhon Milton Areopagitica" 7, no. 1 (2013), <http://www.digitalhumanities.org/dhq/vol/7/1/000150/000150.html>; Yung-Hsing Wu, "Kindling, Disappearing, Reading" 7, no. 1 (2013), <http://www.digitalhumanities.org/dhq/vol/7/1/000115/000115.html>.

¹⁵⁸ Mark Bernstein, "Into the Weeds," in *Reading Hypertext*, ed. Mark Bernstein and Diane Greco (Watertown: Eastgate Systems, 2009), 2.

¹⁵⁹ Nelson uses the phrase in *Dream Machines* in *Computer Lib/Dream Machines* (Redmond: Tempus, 1987), 27.

and digital media as “the material manifestation of an on-going conversation between designer and reader.”¹⁶⁰

Critics do not always share a nuanced approach to the continuity between the screen and the page. Sven Birkerts’s *The Gutenberg Elegies* argues for a deep Ludditism that still persists to this day that the use of the computer for reading is negative to the idea of reading.¹⁶¹ This apparent fall and rise of reading connected to the computer revolution was chronicled by three National Endowment of the Arts reports: “Reading at Risk” and “To Read or Not to Read,” which both mourned the loss of reading cultures, while the more recent “Reading on the Rise” is more optimistic of the benefits of new forms of reading.¹⁶² Moreover, Richard Lanham states that “print [...] is a ‘philosophical’ medium, the electronic screen a deeply ‘rhetorical’ one.”¹⁶³ The juxtaposition of the introspective “philosophical” against “rhetorical” suggests scepticism towards the potential hype of the screen. Lanham argues that the page mediates deep thinking, while writing on the screen tends towards the superficial and flashy for the sake of exploring the medium. Shallow reading exists in electronic reading,¹⁶⁴ but print equally facilitates hyper-reading; “skimming, scanning, fragmenting, and juxtaposing texts, is a strategic response to an information-intensive environment, aiming to conserve attention by quickly identifying relevant information, so that only relatively few portions of given text are actually read.”¹⁶⁵ These methods of reading predate the Personal Computer revolution by Vannevar Bush’s Memex and early modern gentlemen would often read through juxtaposition and scanning.¹⁶⁶ Thus, digital hypertext does not represent a clean break from the book but extends traditional reading methods. David Miall argues that this process is exacerbated in digital media, where the screen offers many distractions.¹⁶⁷ Although there are different types of reading on the screen and page, the screen does amplify some of the distractions apparent in print.

The reactionaries are not alone when it comes to being hyperbolic about the future of the page and screen:

¹⁶⁰ Bonnie Mak, *How the Page Matters* (Toronto: University of Toronto Press, 2011), 9; 21.

¹⁶¹ Sven Birkerts, *The Gutenberg Elegies: The Fate of Reading in an Electronic Age* (New York: Fawcett Columbine, 1994).

¹⁶² National Endowment for the Arts, *Reading at Risk: A Survey of Literary Reading in America*, 2004, <http://www.nea.gov/pub/readingatrisk.pdf>; National Endowment for the Arts, *To Read or Not To Read: A Question of National Consequence*, 2007, http://www.nea.gov/research/ToRead_ExecSum.pdf; National Endowment for the Arts, *Reading on the Rise: A New Chapter in American Literacy*, 2009, <http://www.nea.gov/research/readingonrise.pdf>.

¹⁶³ Richard A. Lanham, *Electronic Word: Democracy, Technology and the Arts* (Chicago: University of Chicago Press, 1995), xii.

¹⁶⁴ For example, consider Jakob Nielsen’s eyetracking study, which exposed the “F-shaped” pattern of much online reading in “F-Shaped Pattern for Reading Web Content,” *Jakob Nielsen’s Alertbox*, 2006, http://www.useit.com/alertbox/reading_pattern.html.

¹⁶⁵ Hayles, *How We Think*, 12.

¹⁶⁶ Vannevar Bush, “As We Should Think,” *The Atlantic*, July 1945; Steven Johnson, *Where Good Ideas Come From: The Natural History of Innovation* (London: Allen Lane, 2010), 86.

¹⁶⁷ David S. Miall, “Confounding the Literary: Temporal Problems in Hypertext,” in *From Codex to Hypertext: Reading at the Turn of the Twenty-First Century*, ed. Anouk Lang (Amherst and Boston: University of Massachusetts Press, 2012), 204.

true freedom from the tyranny of the line is perceived as only really possible now at last with the advent of hypertext, written and read on the computer, where the line in fact does not exist unless one invents and implants it in the text.¹⁶⁸

Coover ignores the fact that reading is temporally linear and thus the reader *has* to create a line through the text. David Solway argues that dismissing linearity as tyrannical does not correct this situation.¹⁶⁹ Print works that offer multiple routes through the text, such as Jacques Derrida's *Glas* and Mark Danielewki's *Only Revolutions* force the reader to make a conscious choice between the divisions in the text.¹⁷⁰ Reading is always a one-dimensional temporal activity, as the human eye cannot concentrate on two strands of narrative simultaneously. When given a choice between several words, we read only one choice at a time and not multiple threads simultaneously. This is not a limitation of hypertext, but rather of the physiology of reading. Coover's media essentialism is corrected by Lev Manovich, who delineates between narrative (as linear) and database (non-linear) in the influential *Language of New Media*.¹⁷¹ Through the conversion of traditional narrative into database forms typified by programs such as *Storyspace* and other hypertext authoring tools, there has been a fear that a similar fate awaits digitised texts:

Your anxiety about *reading interruptus* is intensified by what might be called *print interruptus*, a print book's fear that once it has been digitized, the computer will garble its body, breaking it apart and reassembling it into the nonstory of a data matrix rather than an entangled and entangling narrative.¹⁷²

Digital tools allow the reader to re-arrange the text into unexpected arrangements that may garble the original. This is limited to certain environments, however, as digital media does not often allow the reader to disrupt the text in any major manner.

Although the hype of hypertext predicted the importance of reading on a screen, it was not until the mid-2000s that the idea started to gain traction, despite experiments with the eBook by authors such as Stephen King who optimistically published an eBook in 2000 before the technological infrastructure, apparent now with the rise of the Kindle and Kobo as standalone hardware and stores, was in place.¹⁷³ Commonly known as eBooks, to be distinguished from p-books, or printed books,¹⁷⁴ electronic books have become increasingly popular over recent years.

¹⁶⁸ Coover, "The End of Books."

¹⁶⁹ David Solway, "On Hypertext, or Back to the Landau," *Academic Questions* 24 (2011): 341.

¹⁷⁰ Jacques Derrida, *Glas*, trans. John P. Leavey and Richard Rand (Lincoln and London: University of Nebraska Press, 1986); Mark Danielewski, *Only Revolutions* (New York: Pantheon Books, 2006).

¹⁷¹ Manovich, *Language of New Media*, 231.

¹⁷² N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Performatives* (London: The University of Chicago Press, 1999), 41.

¹⁷³ John B. Thompson, *Merchants of Culture: The Publishing Business in the Twenty-First Century*, 2nd ed. (London: Polity, 2012), 313.

¹⁷⁴ Ted Striphas, *The Late Age of Print: Everyday Book Culture from Consumerism to Control* (New York: Columbia University Press, 2011), x.

The format dates back to 1971 with the establishment of Project Gutenberg, a project that scans public domain texts and releases them as plain text files.¹⁷⁵ eBooks build upon plain text files by wrapping them in interfaces that protect the text through proprietary, copyright protected formats that can be extended through user annotations and other extra-textual platforms. Despite these innovations, “eBooks haven’t yet managed to secure a monopoly of knowledge at all comparable to the one printed books once enjoyed.”¹⁷⁶ This is partially due to the suspicion of the digital word and its veracity, which has only had half a century to solidify its reputation compared to the 500 years print books have enjoyed their higher status. Adrian Johns has argued that print began with a similar lack of stability and highbrow reputation as it was frequently endangered by piracy, counterfeits and other underworld activities.¹⁷⁷ eBooks allow for more experimentation as costs for failures are lower. Moreover, since eBooks are not yet a mature format, Alan Galey poses “the eBook demo as a performance genre, and traces the appearance and disappearance of texts as material artefacts in those performances.”¹⁷⁸ We are deeply concerned with the transformative quality of the eBook market and what we might lose with the translation from print to digital.¹⁷⁹ This tension is visible in the default position of new Kindle eBooks; rather than showing any introductory paratext, eBooks start at the beginning of the main text.¹⁸⁰ Despite these potential differences, the eBook still remains relatively close to its older sibling. Goldsmith argues that “emulating the limitations of the old format” enriches eBooks.¹⁸¹ Ellen McCracken argues that the current eBook is a transitional state to what electronic literature will become. McCracken suggests that:

On the centrifugal vector, for example, while reading an eBook, readers can easily engage with blogs, other readers’ comments, or an author’s web page without putting aside the e-device. Centripetal paratexts, in contrast, modify readers’ experience on inward vectors. On centripetal digital pathways, readers engage with new paratextual elements such as formats, font changes, word searching, and other enhancements.¹⁸²

Systems such as the Amazon Kindle are engaging directly with this new ecology in ways that challenge the future of the book. The Kindle explores the use of intricate networks around the text that allow the reader to share annotations, tweet quotations, track characters’ appearance through the novel and look-up the definition of difficult words without leaving the App. This is

¹⁷⁵ Frederick Kilgour, *The Evolution of the Book* (New York: Oxford University Press, 1998), 153.

¹⁷⁶ Striphas, *Late Age of Print*, xvi.

¹⁷⁷ Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: The University of Chicago Press, 1998).

¹⁷⁸ Alan Galey, “The Enkindling Reciter: eBooks in the Bibliographical Imagination,” *Book History* 15, no. 1 (2012): 211.

¹⁷⁹ Jonathan Westin, “Loss of Culture: New Media Forms and the Translation from Analogue to Digital Books,” *Convergence: The International Journal of Research into New Media Technologies* (2012): 2.

¹⁸⁰ Galey, “Enkindling Reciter.”

¹⁸¹ Westin, “Loss of Culture,” 9.

¹⁸² Ellen McCracken, “Expanding Genette’s Epitext/Peritext Model for Transitional Electronic Literature: Centrifugal and Centripetal Vectors on Kindles and iPads,” *Narrative* 21, no. 1 (2013): 107.

an effort to counter people inevitably bootlegging plain text files in a disruptive manner akin to Napster or Bit Torrent, but “when it comes to text, we haven’t seen anything nearly like the bootlegging phenomenon.”¹⁸³ Many forms of media, particularly videos and music files only truly became digital objects after the ability to pirate and edit files became trivial although this is yet to happen with eBooks. The growing ecosystem of formats such as ePUB and AWZ (the proprietary Kindle format) are leading to a dominant culture without the large-scale copying as users are happy with the added value of efforts such as Amazon’s. This is despite the ability for these texts to be a lot richer in their electronic format. eBooks seem to be a middle ground whereby the reader is not confronted with too many of the tenets of digital media while allowing some new features, but not to the degree predicted by hypertext theorists.

Recent Hypertext Criticism

Recent hypertext scholarship has predominantly examined hypertext fiction through the lens of narratology to move away from the associations with critical theory. David Ciccoricco argues “contrary to the practice of reading ‘hypertext’ in a critical vacuum as a revolutionary technology with untold implications for the production and reception of texts, it is the close analysis of actual works of digital literature [...] that marks what has come to be known as a second generation of digital-literary scholarship.”¹⁸⁴ Recent work within this field includes exploring aspects of focalisation in hypertext fiction, the proliferation of second-person narrative in hypertext fiction as an aid to immerse the reader, and the use of possible worlds theory in classic hypertext works.¹⁸⁵ This approach is not without its own pitfalls, however, as narratology in its extreme forms can be as formalist and reductive as cybertext theory; both narratology and cybertext criticism at their purest turn to the schematisation of a work to its basic units, albeit narrative or mechanical.¹⁸⁶ The kind of digital work under study is a mixture of the linguistic play of narratology and the mechanical nature of cybertext, and as such needs to be treated in a hybrid framework rather than a single form of analysis. Moreover, Landow has noted the discrete units of poetry are more amenable to hypertext and the computing paradigm than prose.¹⁸⁷ It was possible to create a poetry generator without a graphical user interface (GUI) and with a limited amount of memory, while manipulating prose requires a much higher computational effort.¹⁸⁸ The response to these limitations was to create smaller fragments of

¹⁸³ Kenneth Goldsmith, *Uncreative Writing* (New York: Columbia University Press, 2011), 82.

¹⁸⁴ David Ciccoricco, “The Materialities of Close Reading: 1942, 1959, 2009,” *Digital Humanities Quarterly* 6, no. 1 (2012): para. 1, <http://digitalhumanities.org/dhq/vol/6/1/000113/000113.html>.

¹⁸⁵ David Ciccoricco, “Focalization and Digital Fiction,” *Narrative* 20, no. 3 (2012): 255–276; Alice Bell and Astrid Ensslin, “‘I Know What It Was. You Know What It Was’: Second-Person Narration in Hypertext Fiction,” *Narrative* 19, no. 3 (2011): 311–329; Bell, *Possible Worlds*.

¹⁸⁶ Ian Bogost, *Unit Operations: An Approach to Videogame Criticism* (Cambridge: MIT Press, 2008), 68.

¹⁸⁷ Landow, *Hypertext 3.0*, 264.

¹⁸⁸ Funkhouser, *Prehistoric Digital Poetry*, 38.

fiction. Due to the difficulty of creating engaging fiction in chunks, early hypertext fiction responded by coalescing around tales of intrigue, suspense and memory loss. This had the intentional effect of discombobulating readers akin to postmodern fiction with nodes with links containing little indication of where the story was going in these instances. The possibility of developing a varied corpus using this approach was difficult, thus later forays naturalised and problematised the paratext. Shelley Jackson's *Patchwork Girl* was a landmark work for the integration of theme, aesthetic and interface.¹⁸⁹ Jackson's text has an overriding metaphor that easily appeals to the hypertext aesthetic in the patchwork nature of Frankenstein's monster, while dropping the ambiguous linking in favour of allowing the reader to once more get lost in the text.¹⁹⁰ Jackson uses the paratextual apparatus offered by the *Storyspace* software rather than node-to-node linking, which reflects a shift in linking principles. Jackson acknowledged the influence of the default paratext of *Storyspace*:

I wouldn't have written *Patchwork Girl* at all if I hadn't been puzzling over hypertext in general, and I wouldn't have found the graveyard and quilt metaphors I employed in that piece nearly so ready to hand if I hadn't been using an application, *Storyspace*, that involved moving little rectangles around bigger rectangles!¹⁹¹

The spatial elements of Jackson's texts reflect the collage effect of a graveyard. Interest in spatial hypertext has been growing in recent years and this area signifies major attempts to move beyond the link-and-node, web-based model of hypertext.¹⁹²

Mariusz Pisarski has argued that much of the literature enforces a strict hegemony of the link, relegating the node to a secondary position.¹⁹³ Spatial hypertext "seeks to provide fast and informal ways to express inchoate structure and contingent relationships."¹⁹⁴ Spatial hypertext introduces semantics into connections through a focus on visual relationships between objects. Instead of relying on a preordained form of linking, spatial hypertext supports *ad hoc* and personal structuring of information in order to build rich visual connections between nodes. For example, the user might lay one node on top of another, which could represent a close connection between the two, or that the top node supersedes the bottom. When producing a collage, the user automatically creates a holistic connection between the various elements within the collage. Although the user may use traditional link-and-node notation, spatial hypertext

¹⁸⁹ N. Katherine Hayles, *Writing Machines* (Cambridge: MIT Press, 2002), 37.

¹⁹⁰ Robert Coover, "Literary Hypertext: The Passing of the Golden Age," *Feed Mag*, 1999, http://www.feedmag.com/document/do291_master.html.

¹⁹¹ Quoted in N. Katherine Hayles, *My Mother Was a Computer* (Chicago and London: The University of Chicago Press, 2005), 152.

¹⁹² See for example Mark Bernstein, "Can We Talk about Spatial Hypertext," in *Proceedings of the 22nd ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2011), 103–112; Solis and Ali, "An Experience Using a Spatial Hypertext Wiki"; J. Nathan Matias and David P. Williams, "Comparing Spatial Hypertext Collections," in *Proceedings of the 20th ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2009), 45–50.

¹⁹³ Pisarski, "New Plots for Hypertext?"

¹⁹⁴ Bernstein, "Can We Talk about Spatial Hypertext," 103.

allows for a much richer taxonomy of hypertext defined by node shape, relationship to other nodes and patterns.¹⁹⁵ Through using many of the principles inherent in Gestalt theory, spatial hypertext offers a rich vocabulary through which to connect nodes beyond the link. Bernstein has suggested at least three categories of spatial hypertext structure that are familiar metaphors: montage (where meaning is produced by filling in the gaps), transformations such as stretchtext where the text is physical changed, and collage, where different elements are contrasted with each other.¹⁹⁶ Spatial hypertext provides a richer semantic vocabulary than the link-and-node model of hypertext, as it does not blindly endorse connections but allows for juxtapositions. Furthermore, spatial hypertext environments enable the user to organise connections they understand personally and ideas of how these tropes work, but to the degradation of a common vocabulary.¹⁹⁷ The challenge of spatial hypertext demonstrates the need for next-generation hypertext systems that enhance the semantic value of connections.

Platform Studies

One of the recent attempts to correct the media essentialism of early new media studies is Nick Montfort and Ian Bogost's concept of "platform studies," which turns critical attention towards the underlying materiality of digital media.¹⁹⁸ Montfort and Bogost conceive platform to be the lowest layer in a stack of scholarly study, existing at the level of close engagement with the hardware and how it interacts with software and higher levels (see figure 2). Thus far, their pioneering book series has focused on discrete forms of computers: videogame consoles including the Atari 2600 VCS, Commodore and the Nintendo Wii.¹⁹⁹ This approach has the advantage of avoiding the difficulty of working on a broader range of hardware configurations. Montfort and Bogost state that platform studies is an appropriate framework for the study of digital media, but this claim is a form of media essentialism, as it presupposes that forms such as the history of the book do not fit into the framework of platform studies.

¹⁹⁵ Ibid., 104.

¹⁹⁶ Mark Bernstein, "Collage, Composites, Construction," in *Proceedings of the Fourteenth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2003), 122.

¹⁹⁷ Bernstein, "Can We Talk about Spatial Hypertext."

¹⁹⁸ Montfort and Bogost, *Racing the Beam*, 146.

¹⁹⁹ Montfort and Bogost, *Racing the Beam*; Steven Jones and George Thiruvathukal, *Codename Revolution: The Nintendo Wii Platform* (Cambridge: MIT Press, 2012); Jimmy Maher, *The Future Was Here: The Commodore Amiga* (Cambridge: MIT Press, 2012).

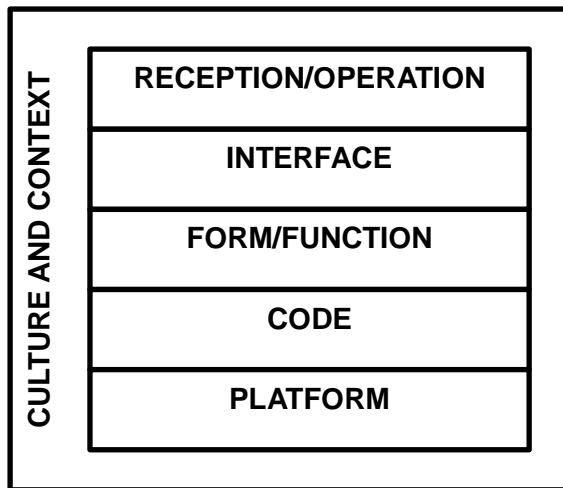


Figure 2 The Five Layers of Digital Media

The top layer, *Reception/operation*, according to Bogost and Montfort is “the level that includes reception aesthetics, reader-response theory, studies based on psychoanalytic approaches, and similar methods.”²⁰⁰ This may be broadly construed to include any aspect of the medium that is studied from the perspective of its use and reuse, as well as the empirical studies of reading, distance readings and meta-discourse on the role of the academy or popular readership in the creation of ancillary content. The *interface* was co-opted from a nineteenth-century term for the boundary of two planes, literalised here by the boundary of the screen.²⁰¹ The interface includes all the icons, menus and other sites of manipulation that fill the screen which are not part of the primary object and can be formulated in literary terms and the combination of paratext and metatext (aspects of the work which describe the work, such as the score or word count). The interface can equally be applied to print, as the page is a boundary with the same composition of paratext and metatext.²⁰² This level of the platform studies model is self-evident with Human-Computer Interaction (HCI) and other interface issues. For example, the dominant paradigm for the desktop and laptop computer, whose hegemony is only just being challenged with the use of Natural User Interfaces (NUI) with the Microsoft X-Box Kinect and other haptic interfaces that attempt to accurately map out the user’s gestures against pre-set commands, as well as the rise of tablets and smartphones is the Windows-Icons-Menus-Pointers (WIMP) interface.²⁰³ These new interface attempt to naturalise aspects of computing that have previously been more abstract through offering ways of engaging with the interface that mimic more physical gestures, such as turning the page of a book. More recently there have been several critiques of the interface from the perspective of humanists and contemporary

²⁰⁰ Montfort and Bogost, *Racing the Beam*, 146.

²⁰¹ ‘Interface’, *OED*. 2nd ed. <http://www.oed.com/view/Entry/97747>

²⁰² Hans Walter Gabler, “Late Twentieth-Century Shakespeares,” in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 88.

²⁰³ Andries van Dam, “Post-WIMP User Interfaces,” *Communications of the ACM* 40, no. 2 (February 1997): 63–67.

philosophy.²⁰⁴ The primary use of the interface is a site of interaction between two given agents, whether human and human, medium and human, or medium and medium.²⁰⁵ The most common interface in print is the page or the book. Montfort and Bogost again tie the third layer down, the *form/function* to traditional literary studies by reference to narratology. This is the level for the mechanisms that are deeper engrained than the interface but do not make up the individual elements of the work. Therefore the genre, type of text and any linking structures function at this level.

Code has not yet been explored in great detail in digital studies compared to its relevance as an emerging genre of composition and rhetoric.²⁰⁶ In recent years, movements toward Critical Code Studies, the analysis of code as a cultural and textual object, and software studies has attempted to correct this critical blindspot.²⁰⁷ The main complexity of examining the layer of code is determining what constitutes code, and if it is purely part of the digital realm:

Contrary to current opinion, codes are not a peculiarity of computer technology or genetic engineering; as sequences of signals over time they are part of every communications technology, every transmission medium. On the other hand, much evidence suggests that codes became conceivable and feasible only after true alphabets, as opposed to mere ideograms or logograms, had become available for the codification of natural languages.²⁰⁸

Therefore, although the focus of code has been in digital media, it is important to remember that the act of reading is interpreting the linguistic codes presented on the page or screen. Close reading of alphanumeric characters is an important part of examining code, whether part of a fictional world or the underlying properties of the game or software. It is also important to note the multiple layers of code in software, from binary code through to human readable languages

²⁰⁴ Steven Johnson, *Interface Culture: How New Technology Transforms the Way We Create and Communicate* (New York: HarperCollins, 1997); Alexander R. Galloway, "The Unworkable Interface," *New Literary History* 39, no. 4 (2008): 931–955; Jörgen Schäfer and Peter Gendolla, eds., *Beyond the Screen: Transformations of Literary Structures, Interfaces and Genres* (Bielefeld: Transcript Verlag, 2010); Pold, "Interface Realisms"; Matthew G. Kirschenbaum, "'So the Colors Cover the Wires': Interface, Aesthetics, and Usability," in *Companion to Digital Humanities*, ed. Susan Schreibman, Ray Siemens, and John Unsworth (Oxford: Blackwell, 2004), <http://www.digitalhumanities.org/companion/>; Barbara Warnick, "Looking to the Future: Electronic Texts and the Deepening Interface," *Technical Communication Quarterly* 14, no. 3 (2005): 327–333.

²⁰⁵ Medium is used here as every media will have a point at which the user interacts with the object.

²⁰⁶ Montfort and Bogost, *Racing the Beam*, 147.

²⁰⁷ See for example Mark C. Marino, "Critical Code Studies," *Electronic Book Review* (2006), <http://www.electronicbookreview.com/thread/electropoetics/codology>; Nick Montfort et al., *10 PRINT CHR\$(205.5+RND(1));:GOTO 10* (Cambridge: MIT Press, 2012); Friedrich Kittler, "Code (or, How You Can Write Something Differently)," in *Software Studies: A Lexicon*, ed. Matthew Fuller (Cambridge: MIT Press, 2008), 40–47; Mark C. Marino, "Reading *exquisite_code*: Critical Code Studies of Literature," in *Comparative Textual Media: Transforming the Humanities in the Postprint Era*, ed. N. Katherine Hayles and Jessica Pressman (Minneapolis and London: University of Minnesota Press, 2013), 283–309; Mark Sample, "Criminal Code: Procedural Logic and Rhetorical Excess in Videogames," *Digital Humanities Quarterly* 7, no. 1 (2013), <http://digitalhumanities.org:8080/dhq/vol/7/1/000153/000153.html>; Manovich, *Software Takes Control*; Noah Wardrip-Fruin, *Expressive Processing: Digital Fictions, Computer Games, and Software Studies* (Cambridge: MIT Press, 2009).

²⁰⁸ Kittler, "Code," 40.

such as JavaScript and Processing.²⁰⁹ Historiographical work into print culture has equally demonstrated that there are also layers of code in print, many of which are invisible and pertain to the printing process.²¹⁰ The most visible codes in print are the bibliographical codes, otherwise known as the material form and paratext of a book, which dictate the ways in which the interface functions in a similar manner to computational code. Furthermore, Montfort argues in an earlier work, that text itself has been codified as long the alphabet: “In most cases, text is also digital, in that any book, play, story, essay or other written work is a string of symbols: letters, numbers, spaces, and punctuation marks. Just as a computer program is, at the lowest level, a number with zeros and ones as digits, a text is a number with typesetting symbols as digits, so it is digital.”²¹¹ Further to this, we can revise the definition of code to include “executable statements,” in which case, any statement that has a truth-value directly related to utterance, as in the framework of Speech Act Theory, can be viewed as a code that requires an action to complete the text.²¹² Just as with digital code, these forms of text require *execution* to be completed, a core requirement of useful code. There is a further link between linguistic codes and digital code as intertexts and clichés work in a similar fashion to functions, recursion and common objects in code. The final layer provides less resistance to print comparisons. As we have already seen, Montfort and Bogost define “*Platform*... [as] the abstraction layer beneath code,”²¹³ of which the most obvious example is hardware, but Montfort and Bogost have argued elsewhere that a platform can be a form of software or device such as *HyperCard* or Flash.²¹⁴ The physical nature of many platforms described resonates with the idea that written communication is built on the platforms of the codex, scroll, wax tablet, and so forth, which have all been studied in great detail in communication studies and book history.²¹⁵

This growing body of literature on digital materiality and platform studies in particular demonstrates the importance of new approaches to hypertext. There has been an increasing body of work on narratology applied to hypertext, while materiality is still a fresh approach to hypertext. Material studies of digital media can rebuke many of the myths propagated by

²⁰⁹ N. Katherine Hayles, “Print Is Flat, Code Is Deep: The Importance of Media-Specific Analysis,” *Poetics Today* 25, no. 1 (2004): 67–90.

²¹⁰ C.f. Don McKenzie’s work on the early printing press, reconstructing codes of conduct through traces external to the finished products. D. F. McKenzie, “Printers of the Mind: Some Notes on Bibliographical Theories and Printing-House Practices,” in *Making Meanings: “Printers of the Mind” and Other Essays*, ed. Peter D. McDonald and Michael Suarez (Amherst and Boston: University of Massachusetts Press, 2002), 13–85.

²¹¹ Nick Montfort, “Interfacing with Computer Narratives: Literary Possibilities for Interactive Fiction” (BA, University of Texas at Austin, 1995), <http://nickm.com/writing/bathesis/>.

²¹² J. L. Austin, *How To Do Things With Words* (Oxford: Oxford University Press, 1962).

²¹³ Nick Montfort and Ian Bogost, *Racing the Beam: The Atari Video Computer System* (Cambridge: MIT Press, 2009), 147.

²¹⁴ Ian Bogost and Nick Montfort, “Platform Studies: Frequently Questioned Answers” (presented at the Digital Arts and Culture, Irvine, California, 2009), www.bogost.com/downloads/bogost_montfort_dac_2009.pdf; A volume on Flash is forthcoming. Anastasia Salter and John Murray, *The Flash Platform*, Platform Studies (Cambridge: MIT Press, Forthcoming).

²¹⁵ For an overview, see Frederick Kilgour, *The Evolution of the Book* (New York: Oxford University Press, 1998).

frequently utopian criticisms of hypertext and computers in general. Through an engagement with the vocabulary of bibliography and book history, we can begin to formulate a semiotic approach to hypertext within this new material framework. If we explore hypertext through a material perspective, we will be equipped to tackle the questions of how to utilise the many assets of the social and physical interactions in and around the book to leverage next generation hypertext systems. This moves away from traditional assumptions that hypertext is an artefact of the text, but rather forms *around* it, something we will return to in Chapter Three. Platform studies and a closer attention to media specificity suggest that we approach the questions of defining digital literature as a distinctive field. The next chapter will re-assess the claims that digital literature can be clearly juxtaposed with print and the possibilities for understanding the continuity between physical and digital literature.

Chapter 2: The Convergence of Physical and Digital

The transition from analog to digital media regulations has also been marked by trade-offs, incompatibilities, delays, and gaps rather than a clean break.
-Lucas Hilderbrand (2009)²¹⁶

As with any developing field, the purview of electronic literature has shifting and permeable borders. This chapter will re-consider established definitions of digital literature and suggest a new approach based on materiality. In the first textbook on the field, Katherine Hayles states “electronic literature, generally considered to exclude print literature that has been digitized, is by contrast ‘digital born’, a first-generation digital object created on a computer and (usually) meant to be read on a computer.”²¹⁷ Unfortunately, this definition tells the reader very little about what electronic literature *can be*, but rather defines it negatively, that it is not print.²¹⁸ This definition can be problematic for electronic literature scholars as it does not distinguish between classically defined electronic literature and eBooks that have never been printed. Alice Bell *et al* correct this deficiency by defining electronic literature as “fiction written for and read on a computer screen that pursues its verbal, discursive and/or conceptual complexity through the digital medium, and *would lose something of its aesthetic and semiotic function if it were removed from that medium.*”²¹⁹ This may appear tautological, but instead is part of a wider call for a deeper media-specificity that acknowledges that *all* texts are shaped by their medium.²²⁰ Likewise, Noah Wardrip-Fruin offers “literary works that *require the digital computation* performed by laptops, desktops, servers, cellphones, games consoles, interactive environment controllers, or any of the other computers that surrounds us.”²²¹ Wardrip-Fruin makes an important distinction between

²¹⁶ Lucas Hilderbrand, *Inherent Vice: Bootleg Histories of Videotape and Copyright* (Durham and London: Duke University Press, 2009), 77.

²¹⁷ N. Katherine Hayles, *Electronic Literature: New Horizons for the Literary* (Notre Dame: University of Notre Dame Press, 2008), 3.

²¹⁸ Brian Kim Stefans, *Fashionable Noise: On Digital Poetics* (Berkeley: Atelos, 2003), 45–46.

²¹⁹ Alice Bell et al., “A [S]creed for Digital Fiction,” *Electronic Book Review* (2010): para. 13, <http://www.electronicbookreview.com/thread/electropoetics/DFINative>. Emphasis my own.

²²⁰ See Matthew G. Kirschenbaum, *Mechanisms: New Media and the Forensic Imagination* (Cambridge, Massachusetts and London, England: The MIT Press, 2012); Montfort and Bogost, *Racing the Beam*; N. Katherine Hayles, “Print Is Flat, Code Is Deep: The Importance of Media-Specific Analysis,” *Poetics Today* 25, no. 1 (2004): 67–90; Alexander R. Galloway, *Protocol: How Control Exists After Decentralization* (Cambridge: MIT Press, 2004); Bogost’s recent work on “carpentry” is equally exploring the creative potential of media specificity. See *Alien Phenomenology, or What It’s Like to Be a Thing* (Minneapolis: University of Minnesota Press, 2012).

²²¹ Noah Wardrip-Fruin, “Five Elements of Digital Literature,” in *Reading Moving Letters: Digital Literature in Research and Teaching A Handbook*, ed. Roberto Simanowski, Jürgen Schäfer, and Peter Gendolla (Wiesbaden: Transcript Verlag, 2010), 29. Emphasis my own.

digital literature and art, while other critics have amalgamated the two, which can lead to an overly broad definition of digital literature.²²²

Why do so many of these definitions position digital literature against print? Primarily this helps to establish the field and facilitates successful funding applications by stressing its innovation against an older form. These definitions are fit to establish the field, although we can look to delineate digital literature through the lens of materiality to refine the scope of the meta-genre. The benefit of taking a material approach is evident from the frequent calls to print in previous definitions as they state that the fundamental difference is the form's distance from print as material. Furthermore, the *smorgasbord* of media covered under the blanket term "electronic literature," along with the range of themes and genres covered in the field, requires a material engagement to consider how these forms are connected. This reveals the first major problem with the singular form implied in electronic or digital literature: we are not talking about a medium but rather a plethora of media. Even if we exclude digital works that have explicit physical outputs,²²³ there are major differences between a narrative delivered by SMS; "an art installation [...] that culls text fragments in real time from thousands of unrestricted Internet chat rooms, bulletin boards and other public forums;"²²⁴ and a fraudulent video blog of an actor pretending to be a lonesome teenager.²²⁵ Bell *et al.* consider this when they define digital literature as screen-based. The screen takes a dominant position in digital media, but as the field is developing, other digital literatures are challenging this hegemony. It is only through assessing the materiality of digital literature that we can see these differences emerging.

A material approach to defining digital literature reveals some common myths about the field. One prevalent myth is that electronic literature introduces multimedia into literary works. As Espen Aarseth states in an interview in *Dichtung Digital*:

And the example you mentioned: 'texts which include sound and animated pictures', those are far from impossible on paper! My daughter has several such books, with figures that move when you open the page, and buttons that make sounds when pressed. It doesn't have to be digital, but the ideology of information technology makes us see it that way. Or, should I say, makes us blind that way.²²⁶

Children's books often feature multimedia or multimodal aspects to engage the audience, such as *The Most Amazing Pop-Up Science Book*, which includes a playable facsimile of Edison's first

²²² Ibid.

²²³ This is only possible if we humour the possibility that the computer itself is immaterial, a fatal assumption in itself, as we have already seen in the preceding chapter.

²²⁴ Mark Hansen and Ben Rubin, "Listening Post," *EAR Studio*, accessed June 13, 2013, <http://earstudio.com/2010/09/29/listening-post/>.

²²⁵ Jill Walker Rettberg, *Blogging* (Cambridge: Polity, 2008), 121–126.

²²⁶ Roberto Simanowski and Espen J. Aarseth, "Hypertext, Cybertext, Digital Literature, Medium: An Interview with Espen Aarseth," *Dichtung Digital* (1999), <http://www.dichtung-digital.de/Interviews/Aarseth-16-Dez-99/>.

wax cylinder.²²⁷ Furthermore, flip books offer a simulation of cinema and photography depending on how the reader engages with the medium, indicating the variety of approaches to multimedia in print. Leah Price further deconstructs the idea that books are a single purpose medium as they can lead complex afterlives that extend from kindling on a fire to toilet paper.²²⁸ Since the field is relatively new, it is unsurprising that there has been scepticism regarding the aesthetic importance of digital literature. Johanna Drucker suggests that digital incunabula are novelties of historical importance but are not mature aesthetic works. It is too early to create a canon of electronic literature from an aesthetic perspective, since we do not know what is technologically innovative as opposed to artistically innovative. Drucker concludes, “paradoxically, the generative tension between transparency and resistance to media that form the right conditions for a higher level of aesthetic production may arise only when the geek-culture necessity for technical engagement disappears.”²²⁹ The gift economy of sharing techniques and tools will speed up the up-take of digital media for serious projects. This shift has already occurred in videogame development, where premade toolkits, or middleware, such as Valve’s Source have been built that allow creative energy to be concentrated on the end product, such as the complex world of the *Portal* and *Half Life* series which differ on gameplay but use the same graphical engine.²³⁰ Since the field is immature, and middleware is still being developed, bootstrapping digital literature onto more established forms would lead to more positive acceptance of the movement.

From a Binary to a Continuum

As discussed above, digital literature has often been placed in opposition to print. This binary is problematic, as it compares the single medium of print against a plethora of digital forms, thus ignoring a wide range of *physical* literature. Drama, improvisation and performance are forms of physical literature outside of print, and even manuscripts, wax tablets and other ephemeral transcription systems can be seen as physical rather than print. This term also acknowledges the processes around print such as reading and altering texts, thus treating print as a part of a transformational process rather than comparing dynamic digital texts with a fraction of available physical literature. The book is seen as the dominant form within print culture as the processes of bookbinding have been remarkably durable compared to other types of physical literature.²³¹

²²⁷ Jay Young, *The Most-Amazing Pop-Up Science Book* (London: Watts Book, 1994), 1.

²²⁸ Leah Price, *How to Do Things with Books in Victorian Britain* (Princeton: Princeton University Press, 2012), passim.

²²⁹ Johanna Drucker, “A Review of Matthew Kirschenbaum, *Mechanisms: New Media and the Forensic Imagination* (Cambridge, MA and London, UK: MIT University Press, 2008,” *Digital Humanities Quarterly* 3, no. 2 (2009), <http://digitalhumanities.org/dhq/vol/3/2/000048/000048.html>.

²³⁰ Valve, *Half-Life*, Microsoft Windows, 1998; Valve, *Portal*, Microsoft Windows, 2007.

²³¹ Lisa Gitelman, “Print Culture (Other Than Codex): Job Printing and Its Importance,” in *Comparative Textual Media: Transforming the Humanities in the Postprint Era*, ed. N. Katherine Hayles and Jessica Pressman (Minneapolis and London: University of Minnesota Press, 2013), 183–197.

Many of these physical forms are fleeting and ephemeral, requiring documentary evidence on a more permanent medium. These traces of a culture of physical literature exist in the presence of printed ballad broadsheets in early modern England that were primarily for the sake of singing rather than reading.²³² It must be remembered that such physical literature explores media other than print. One such example is Alvin Lucier's *I Am Sitting in a Room*, a sound poem beyond representation of a page as Lucier loops the recording of a single speech:

I am sitting in a room different from the one you are in now. I am recording the sound of my speaking voice and I am going to play it back into the room again and again until the resonant frequencies of the room reinforce themselves so that any semblance of my speech, with perhaps the exception of rhythm, is destroyed. What you will hear, then, are the natural resonant frequencies of the room articulated by speech. I regard this activity not so much as a demonstration of a physical fact, but more as a way to smooth out any irregularities my speech might have.²³³

Works such as Lucier's explore themes of feedback and noise in a dynamic performance that is conceptually complex and deeply tied to its medium as the deterioration of repeated recording of analogue media amplifies the distortion of Lucier's voice. This is not to say that such a strategy could not be replicated textually as the distortion of repeated copying could be replicated through copying text to expose the degrading quality of the photocopier or JPEG format. Such works provide useful counter-examples to the essentialism of the binary of digital and print media.

The clear relationship between digital literature and physical environments can further be seen through the plethora of exhibitions and public readings of digital literature. These manifestations of digital literature are antithetical to the image of digital literature as immaterial, since many of these exhibitions include the chance for users to experience some works that are difficult to access due to hardware requirements or the need for other apparatuses. Exhibitions of digital literature have been a regular feature at the Electronic Literature Organisation Conferences, and in recent years, the Modern Language Association have featured exhibitions with the theme of "Avenues of Access" and "Pathfinders" exploring both historically important works and more recent developments in electronic literature.²³⁴ Only certain forms of digital literature, such as hypertext or Interactive Fiction have developed a subculture of public readings, including the People's Republic of Interactive Fiction, who play through IF such as

²³² Harold Love, "Oral and Scribal Texts in Early Modern England," in *The Cambridge History of the Book in Britain Volume IV 1557-1695*, ed. John Barnard and D. F. McKenzie (Cambridge: Cambridge University Press, 2002), 104.

²³³ Alvin Lucier, *I Am Sitting in a Room*, 1969, <http://www.ubu.com/sound/lucier.html>.

²³⁴ Dene Grigar, "Avenues of Access: An Exhibit & Online Archive of New 'Born Digital' Literature," 2012, <http://dte-wsuv.org/elit/mla2013/>; Dene Grigar, "Curatorial Plan for the Pathfinders Exhibit at the MLA 2014," *Pathfinders*, 2013, <http://dte-wsuv.org/wp/pathfinders/2013/12/16/curatorial-plan-for-the-pathfinders-exhibit-at-the-mla-2014/>.

Jeremy Freese's *Violet* and Emily Short's *Alabaster*.²³⁵ These sessions explore several of the physical roles of the experience of IF, as users could sign-up to be a typist, orator or extra-textual mapper.²³⁶ The most interesting of these three roles is the orator, as it reveals a link between IF and the performative aspects of oral literature. Most readily, the conversational style of IF can be seen as referring to oral literature rather than print forms. The ability to use multiple phrases with similar semantic content is a throwback to oral literature with its stock phrases. These failsafes to allow for a greater deal of improvisation tie oral literature and IF together in a way that distinguishes them from print and hypertext.

Furthermore, it is readily apparent that the binary of print and digital is problematised by eBooks and the digital processing of print texts. Stating that digital literature excludes eBooks for an arbitrary reason and this relationship should be considered more carefully does not solve this problem. Within the vocabulary of physical literature, the disparity between digital and non-digital becomes more absurd. Instead of juxtaposing these two types of literature, it is much more productive to see them as two opposing sides of a continuum, although there are rarely texts that are purely digital. The prototypical physical-only text is an improvised oral performance unmediated by the digital, while it is almost impossible to conceptualise a digital text outside of a thought-experiment of a potential literature only in code without an executable function. The continuum functions as a figurative bell-curve since the majority of literature is closely grouped as a mixture of physical and digital aspects; only a few texts representing pure physical or digital manifestations of literature. Print sits dead centre in this continuum as many of the processes of creating books are mediated through the computer. Steve Tomasula's theory of electronic literature as the convergence of human and machine language situates digital literature as a hybrid form that is not purely machinic.²³⁷ It is unlikely that any developed form of digital literature will ignore either the human or code aspects of the work without degrading its aesthetic value.

If physical and digital literature exist within the same continuum, *simulation* and *amplification* are two ways in which digital literature connects to physical media. Wardrip-Fruin argues that simulation is an integral element of the computer's ontology.

A computer is a strange type of machine. While most machines are developed for particular purposes – washing machines, forklifts, movie projectors, typewriters – modern computers are designed specifically to be able to *simulate* the operations of many different

²³⁵ Clara Fernandez-Vara, *Electronic Literature for All: Performance in Exhibits and Public Readings*, Trope Tank (Cambridge, MA: MIT, April 2013), 12, <http://trope-tank.mit.edu/TROPE-13-01.pdf>.

²³⁶ *Ibid.*, 14.

²³⁷ Steve Tomasula, "Code Poetry and New-Media Literature," in *The Routledge Companion to Experimental Literature*, ed. Joe Bray, Alison Gibbons, and Brian McHale (London: Routledge, 2012), 485.

types of machines, depending on the computer's current instructions
(and its available peripherals)²³⁸

Digital literatures represent potential literature, as the computer has the ability to simulate a range of possible machines, including those that replicate prior narratives. George Landow identifies simulation as one of five core genres of electronic literature alongside hypertext in an awkward taxonomy that includes “simple alphanumeric digital text” with videogames, collaboration and cybertext all bundled under the category of “non-linear text.”²³⁹ Despite the looseness of Landow's categories and the overlap that can exist between them, this does not exclude overlap between print and electronic literature. Landow's category of “simple alphanumeric digital text” offers a useful case study for the role of simulation and amplification in electronic literature. James Newman suggests that plain text can be highly creative and fixed-space typefaces can transform words into art, but this remains a simulacrum of the typewriter aesthetic.²⁴⁰ Equally, contemporary digital file storage amplifies the word count of the physical storage space, as the standard hard drive is the same size as a 250-page trade paperback, but can fit over 300 million plain text files of a similar length. It must be stressed, however, that simulation and amplification are far from unique in digital literature. Ludic texts such as *Dungeons & Dragons*, single-player game-books and interactive drama such as Ayn Rand's *Night of January 16th* emphasise simulation.²⁴¹ Live Action Role-Playing Games (LARP) represent a simulation and an amplification in physical literature as role-players simulate historical or fantastic events while simultaneously amplifying the immersion of the player compared to table-top role-playing games.²⁴²

Both simulation and amplification require careful comparison of more than a single medium, and the connection between print and digital media represents an interesting example of this. There is a feedback loop extending between the two media amplified by the reaction to print in early digital fiction. Hypertext fiction is heavily parasitic and influenced by the nature of print and requires an understanding of both media to appreciate the aesthetic value of works.²⁴³ Equally, “electronic literature extends the traditional functions of print literature in creating recursive feedback loops between explicit articulations, conscious thought, and embodied sensorimotor knowledge.”²⁴⁴ The feedback loop is apparent in Eskelinen's thought-experiment

²³⁸ Noah Wardrip-Fruin, *Expressive Processing: Digital Fictions, Computer Games, and Software Studies* (Cambridge: MIT Press, 2009), 1.

²³⁹ George Landow, *Hypertext 3.0: Critical Theory and New Media in an Era of Globalization* (Baltimore: The Johns Hopkins University Press, 2006), 378.

²⁴⁰ James Newman, *Playing with Videogames* (London and New York: Routledge, 2008), 100.

²⁴¹ Gary Gygax, *Official Advanced Dungeons & Dragons Dungeon Masters Guide* (Cambridge: TSR, 1979); Ian Livingstone, *Crypt of the Sorcerer* (Duxford: Wizard Books, 2003); Ayn Rand, *Night of January 16th* (New York: Penguin, 1968), 122.

²⁴² Janet H. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (Cambridge and London: The MIT Press, 1997), 42–43.

²⁴³ N. Katherine Hayles, *Writing Machines* (Cambridge: MIT Press, 2002), 37.

²⁴⁴ Hayles, *Electronic Literature*, 135.

of a version of *Cent Mille Milliards de Poemes* where the reader tears out one page a year, limiting the number of possible combinations from the original text.²⁴⁵ Although Eskelinen states “such texts don’t seem to exist,” this is not to say that such a text *could not* exist.²⁴⁶ There are few print examples as it is expensive in time and money to perform actions associated with digital literature, hence the focus on amplification in digital media. The history of the development of print was also interconnected to the amplification of the reduced costs, both in time and money, of copying texts. Therefore, although many of the uses of digital literature are possible in more traditional print publications, scale, both spatially and temporally, restrict the application of such methods. The amplification can be seen in many well-established genres of electronic literature. Hypertext amplifies the implicit connections between and in texts and turns them into explicit connections, such as Shelley Jackson’s *Patchwork Girl*, which explicitly remediates and links together sources including Mary Shelley’s *Frankenstein* and Frank Baum’s *The Patchwork Girl of Oz*.²⁴⁷ The most popular form of digital media, videogames, often extend the formalist rules of boardgames and game-books. Jane McGonigal states that when playing a game, we adhere to “voluntary obstacles” in the form of restrictive rules to make tasks more interesting rather than taking the easiest path to the game’s conclusion.²⁴⁸ The playing contract requires the player cannot passively drift through the world but rather has to engage with the world through these “voluntary obstacles.” The voluntary obstacles can be made more difficult in a simulated space such as videogames, and games can be longer as the player can save their progress. Lev Manovich posits that digital media is governed by a cinematic paradigm, a continuation of the larger shift within media in the twentieth century.²⁴⁹ It is clear that digital literature does not represent a complete break from artistic tradition, but rather forms part of a complex interconnected media ecosystem.

One of the largest differences for electronic literature, however, is the amplification of reduced costs. Although digital texts can be expensive if published through traditional means, as only the copying and transmission costs have been cut, self-publishing is trivial and often cheap.²⁵⁰ Digital literature often fits into the self-publishing paradigm and is sustained predominantly by academics. One of the most interesting examples of this phenomenon is the Interactive Fiction

²⁴⁵ Raymond Queneau, *Cent Mille Milliards de Poèmes* (Paris: Editions Gallimard, 1961).

²⁴⁶ Markku Eskelinen, *Cybertext Poetics: The Critical Landscape of New Media Literary Theory* (London and New York: Continuum, 2012), 36–37.

²⁴⁷ Shelley Jackson, *Patchwork Girl* (Watertown: Eastgate Systems, 1995); Mary Wollstonecraft Shelley, *The Novels and Selected Works of Mary Shelley, Vol.1, Frankenstein, Or, The modern Prometheus*, ed. Nora Crook (London: Pickering & Chatto, 1996); L. Frank Baum, *The Patchwork Girl of Oz* (Chicago: Reilly & Britton, 1913).

²⁴⁸ Jane McGonigal, *Reality Is Broken: Why Games Make Us Better and How They Can Change the World* (London: Vintage, 2012), 22.

²⁴⁹ Lev Manovich, *The Language of New Media* (Cambridge: MIT Press, 2001).

²⁵⁰ John B. Thompson, *Merchants of Culture: The Publishing Business in the Twenty-First Century*, 2nd ed. (London: Polity, 2012), 355.

community, a formerly mainstream genre in the 1980s.²⁵¹ The community sustains an archive, a database, annual prizes, a wiki, and two well-attended newsgroups; many of which have been active since Interactive Fiction's heyday and sustained interest in the topic since its commercial heyday.²⁵² These websites are maintained for the love of an otherwise forgotten genre. Comparatively, the infrastructure of archival material related to hypertext fiction is mainly academic, created in recent years through projects such as the ELMCIP and Electronic Literature Directory,²⁵³ despite the origins of the literary form dating back to at least 1986 with Judy Malloy's performance of *Uncle Roger* on the Whole Earth (E)lectronic List (WELL).²⁵⁴ These projects are geared to documenting the historical importance of the genre rather than traces of the culture. They also focus on works that have received academic attention, reinforcing a canon over celebrating marginal works. There is a lack of ancillary materials documenting the performance of the reader such as walkthroughs, "Let's Plays" and other reader-created material that has developed around videogames.²⁵⁵ Perhaps this is due to Eastgate's primary catalogue remaining "in print" and the lack of a community developing tools to author and preserve hypertext works until recent years. Most pressingly, there is no open source version of *HyperCard* although Apple has not supported the software for over a decade and *Storyspace* remains proprietary. It is difficult to ensure the long-time survival of these formats, as they remain commercial secrets; there is evidence of a shift towards a new economy, however, as new tools such as *Twine* and *Undum* are increasingly being used for a hypertext fiction renaissance.²⁵⁶ While these tools lack the sophistication of *HyperCard* and *Storyspace*, they are part of the burgeoning Free/Libre/Open-Source Software (FLOSS) model,²⁵⁷ whereby a gift economy is favoured for two main reasons: to create technically impressive works or to develop a tool that fulfils a need currently ignored on the software market.²⁵⁸ The gift economy is that of creating new structures and tools for others to build upon, in a similar way to the open

²⁵¹ Nick Montfort, *Twisty Little Passages: An Approach to Interactive Fiction* (Cambridge: MIT Press, 2003), chap. 5.

²⁵² David Kinder et al., "The Interactive Fiction Archive," 2013, <http://ifarchive.org/>; "The 18th Annual Interactive Fiction Competition," 2013, <http://ifcomp.org/>; "XYZZZYnew," 2013, <http://www.xyzzzynews.com/>; "IFWiki," 2005, <http://www.ifwiki.org/index.php/Starters>.

²⁵³ Scott Rettberg et al., "ELMCIP Electronic Literature as a Model of Creativity and Innovation in Practice," 2013 2007, elmcip.net/; Electronic Literature Organization, "Electronic Literature Directory," 2013, <http://directory.eliterature.org/>.

²⁵⁴ Archiving performances on this network alone would be an interesting historical exercise

²⁵⁵ Dene Grigar and Stuart Moulthrop's recent National Endowment of the Humanities (NEH) Digital Humanities Start-Up grant, the Pathfinder project will document reading experiences of early electronic literature and is set to conclude in 2015, starting work towards developing such documentary projects. Brett Bobley, "Announcing 23 Digital Humanities Start-Up Grant Awards (March 2013)," *National Endowment for the Humanities*, April 8, 2013, <http://www.neh.gov/divisions/odh/grant-news/announcing-23-digital-humanities-start-grant-awards-march-2013>.

²⁵⁶ Chris Kilmas, "Twine," 2013, <http://twinery.org/>; Ian Millington, "Undum - A Client Side Framework for Hypertext Interactive Fiction Games," 2010, <http://undum.com/>.

²⁵⁷ FLOSS is an ideological and legal set of protocols for software which is within the realms of copyright protection but falls into the category of less restricted than much commercial proprietary software. The communitisation of programs such as Linux and Apache have emerged from this ideological choice.

²⁵⁸ Scott Rettberg, "Communitizing Electronic Literature," *Digital Humanities Quarterly* 3, no. 2 (Spring 2009): para. 18, <http://www.digitalhumanities.org/dhq/vol/3/2/000046/000046/html>.

nature within the Oulipo workshops, which are open for all to attend and build upon the potential literature structures developed by Oulipo authors. In the years following the boom period of commercial hypertext publishing led by Eastgate Systems, Voyager Systems, and *Alire*,²⁵⁹ a commercial drive has been replaced by collaboration in a niche marketplace led predominantly by humanities and computer science professors who value the advancement and promotion of the form rather than for economic gain.²⁶⁰ The practice of sharing includes a full range of comments to explicate how to re-use the code that has extended to Nick Montfort and Stephanie Strickland's publication of an extensively commented version of their source code for *Sea and Spar Between* in a peer-reviewed journal.²⁶¹

Another unavoidable difference between print and digital media is the division of hardware and software for digital media, which is often also the case with other magnetic and digital formats.²⁶² For example, most audio-visual materials have been separated into consumables that require the assembly of multiple pieces.²⁶³ This is not true with the book. When a reader buys a book, they do not have to purchase any further equipment (except if they require self-augmenting devices such as reading glasses, albeit this is a cyborg moment rather than a hardware-software divide), but can read the book "out of the box." Conversely, with electronic literature, the user requires specific hardware configuration rather than a generic device in order to run the software. Older devices become out-dated and difficult to find in a short period of time. It is only possible to play *E.T.* on the Atari 2600 VCS²⁶⁴ or explore *Uncle Buddy's Phantom Funhouse* on a working older Mac OS machine capable of running *HyperCard*. This is unique to digital media as the open nature of computing means that precise specifications of hardware and software are required to run old software, while other formats such as laserdiscs and vinyl records can be played on generic devices, regardless of age. This problem is exacerbated by the accelerated growth of processing power as predicted in Moore's Law, which states that processing power will double within eighteen months.²⁶⁵ Although it is possible to emulate the conditions of the original work, it is removed from the technological quirks of the original format. The switch from Cathode Ray Tube (CRT) to Liquid Crystal Display (LCD) screens led

²⁵⁹ Phillippe Bootz, "Alire: A Relentless Literary Investigation," *Revista Digital Humanitats* 4 (2002), <http://www.uoc.edu/humfil/articles/eng/bootz0302/bootz0302.html>.

²⁶⁰ Many of the authors featured in the canon-forming two volumes of the *Electronic Literature Collection* have professorial positions

²⁶¹ Nick Montfort and Stephanie Strickland, "Cut to Fit the Tool-Spun Course" 7, no. 1 (2013), <http://www.digitalhumanities.org/dhq/vol/7/1/000149/000149.html>.

²⁶² Lucas Hilderbrand argues that this separation with videotapes has led to the idea of VHSs being a medium being contended in *Inherent Vice*, 35.

²⁶³ Gitelman traces the history of software back to the piano rolls and sheet music of the early Twentieth century in "Media, Materiality, and the Measure of the Digital; Or, the Case of Sheet Music and the Problems of Piano Rolls," in *Memory Bytes: History, Technology, and Digital Culture*, ed. Lauren Rabinovitz and Abraham Geil (Durham and London: Duke University Press, 2004), 204.

²⁶⁴ Atari, Inc., *E.T.: The Extra Terrestrial*, Atari 2600 (Atari, Inc., 1982), -.

²⁶⁵ Gordon Moore, "Cramming More Components onto Integrated Circuits," *Electronics* 38, no. 8 (April 1965), http://download.intel.com/museum/Moores_Law/Articles-Press_Releases/Gordon_Moore_1965_Article.pdf.

to some stark visual contrasts. In one transformation, it became difficult to render Atari 2600 VCS games on LCD screens as due to the limited memory, designers were required to exploit quirks with the CRT display to maximise performance.²⁶⁶ Moreover, due to increasing processing complexity, emulators require frequent maintenance for new platforms, occasionally requiring emulation themselves after a short period of time. The constant cycle of upgrades and planned obsolescence is burdensome for the development of digital literature as it requires the platform on which the literature is built to be completely open, so future generations can easily port the programs over to newer hardware or a constant upgrade cycle.²⁶⁷ Some authors plan for eventual technological obsolescence, such as Talan Memmott, author of *Lexia to Perplexia*, a web-based hypertext that is facing obsolescence due to a change in the way in which browsers handle part of the underlying code, which the author accepts as part of the work's lifespan rather than adapting it to ensure its continued survival.²⁶⁸ Plain text is the most stable format since it functions at a level required for hardware to process software, thus being interoperable on any platform. Therefore any work written in plain text—a format marginal to digital literature—has a longer half-life than any other digital media. The spectre that haunts the development of the electronic literature is that technical innovation is unsustainable and requires preservation efforts often exceeding the care for rare books. The development of a gift economy of digital literature can be seen as a response to the need for constant preservation, since if commercial interests and proprietary formats are not so closely guarded in order to maintain a competitive advantage in selling software, the community can become more open and share advice on how to keep the texts readable for later generations.

Interface Through a Glass Darkly

Digital literature's strongest bond so far has been the use of metafiction to encourage users to rethink their engagement with digital culture. As Bouchardon states "the Digital entails a form of explication, and thus reflexivity, on its own formats and frames of reproduction. It is this explication which invites us to revisit previous media, or at least to further call into question what seemed inherent to the printed media."²⁶⁹ The digital amplifies the differences between media. Patricia Waugh defines metafiction as "fictional writing which self-consciously and systematically draws attention to its status as an artefact in order to pose questions about the relationship between fiction and reality."²⁷⁰ Digital literature allows authors to explore this juxtaposition in new ways as they can explore the boundaries of the new forms. Michael Joyce's

²⁶⁶ Montfort and Bogost, *Racing the Beam*, 140.

²⁶⁷ Nick Montfort and Noah Wardrip-Fruin, "Acid-Free Bits," 2004, <http://eliterature.org/pad/afb.html>.

²⁶⁸ Zach Whalen, "Lexia to Perplexia (2000 - 2013)," in *Electronic Literature after Flash* (Chicago, 2014), <http://www.zachwhalen.net/blog/14/jan/lexia-perplexia-2000-2013>.

²⁶⁹ Serge Bouchardon, "The Heuristic Value of Electronic Literature," 2010, 4, <http://www.les12travaux.com/download/docs/2010-02-bouchardon-heuristic-value.pdf>.

²⁷⁰ Patricia Waugh, *Metafiction: The Theory and Practice of Self-Conscious Fiction* (London: Taylor & Francis, 1984), 2.

afternoon, a story demonstrates this through its resistance to the reader selecting “no” when asking “Do you want to hear about it?,” which garners the response “I understand how you feel...”²⁷¹ The work continues nonetheless, subverting the reader’s choice. Interactive Fiction also features metafictional jokes where if the reader enters an absurd suggestion as part of the world-building, the parser will recognise the absurdity and often respond with a quip that will re-enforce the metafictional qualities of the genre.²⁷² These early examples started a trend of metafictional inquiry in digital literature that has become prevalent in the field including the self-referential nature of Richard Holeton’s “Frequently Asked Questions About Hypertext,” a parodic critical edition of a poem that takes the form of a Frequently Answered Questions (FAQ), a form associated with the computer.²⁷³ Other examples of explicit metafictionality in digital literature include Tully Hansen’s mediation on writing and revision in his web essay, “Writing,” and Nick Montfort’s *Ad Verbum*, which extends the form of the Interactive Fiction to be entirely about verbal puzzles.²⁷⁴ Montfort warns “This Oulipo-inspired interactive fiction is intended for those who know the conventions of IF, but you may find it fun, anyway.”²⁷⁵ Montfort pays close attention to ambiguous responses in Interactive Fiction in puzzles such as “Oh no! Socially inappropriate verbal thing! How ever will you, the bold adventurous protagonistic thing, retrieve your locking / unlocking thing?”²⁷⁶ Montfort exploits the use of vagueness within the world in Interactive Fiction and “satirizes its own generic qualities and the linguistic competence and creativity of its players.”²⁷⁷ These works require the reader to understand the inversion of generic norms in order to appreciate their complex intertextuality.

Metafiction in print has often explored the boundaries of the text through experimental paratext. Computer science research has equally emphasised text outside of the text as the interface. Pold suggests, “the interface is the basic aesthetic form of digital art.”²⁷⁸ The innovative qualities of digital literature means that the user is most likely going to be unfamiliar with the interface, unlike the familiarity with the page and the book, so users are going to spend much more time critiquing the interface. Jay David Bolter and Diane Gromala further argue, “Digital art shows that the computer is not becoming invisible in our culture.”²⁷⁹ Rather than

²⁷¹ Michael Joyce, *afternoon, a story*, 6th ed. (Watertown: Eastgate Systems, 2007).

²⁷² Montfort, *Twisty Little Passages*, 107–109.

²⁷³ Richard Holeton, “Frequently Asked Questions about ‘Hypertext,’” in *Electronic Literature Collection 1*, ed. N. Katherine Hayles et al. (Maryland: Electronic Literature Organization, 2006), http://collection.eliterature.org/1/works/holeton_frequently_asked_questions_about_hypertext.html.

²⁷⁴ Tully Hansen, “Writing,” *Overland*, 2013, <http://overland.org.au/media/writing/>; Nick Montfort, “Ad Verbum,” 2000, <http://nickm.com/if/adverbum.html>.

²⁷⁵ Montfort, “Ad Verbum.”

²⁷⁶ Ibid.

²⁷⁷ Astrid Ensslin, *Literary Gaming* (Cambridge: MIT Press, 2014), 79.

²⁷⁸ Soren Pold, “Interface Realisms: The Interface as Aesthetic Form,” *Postmodern Culture* 15, no. 2 (2005): para. 2.

²⁷⁹ Jay David Bolter and Diane Gromala, *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency* (Cambridge: MIT Press, 2005), 2.

establishing conventions, the metafictional qualities of digital art are exploring the boundaries of the interface in a similar way to the artists' books movement in print. In the embryonic years of digital literature, readers and authors are testing the limits of the form. Even the form of codeworks, or literature authored purely in code, relies on a sterile interface, rather than "a quasi-mathematical-logical entity,"²⁸⁰ as the aesthetic of the command line reveals a similar subjectivity in the interface. The interface reflects the physical site of engagement that is minimalist but *not* non-existent in codeworks. This mirrors a shift away from the *Storyspace* School towards more sophisticated and metafictional interfaces with codeworks representing a shift towards exposing the machinery of the computer.²⁸¹ The dominant paradigm of *Storyspace* as software is the classical computing metaphor of Windows-Icons-Menus-Pointers (WIMP). This paradigm was challenged by what Lev Manovich termed "Generation Flash," or the use of Flash to create more experimental interfaces.²⁸² Although Flash represented part of an important shift away from the first wave of hypertext fiction, its recent obsolescence for mobile devices and the move towards more open forms has led to a shift towards newer and more open formats.²⁸³

An early example of the move towards more physical environment is *TEXT RAIN*, an installation that projects "raining" text onto a screen that reacts to silhouettes of people who can block the falling letters, represents an important move beyond the screen.²⁸⁴ Bolter and Gromala argue "*TEXT RAIN* is as much an expression of its viewers as of its creators; it is what the viewers make of it. Without them, the piece is incomplete, for there is nothing on the screen but the falling letters. In fact, *viewers* is not an entirely adequate term; they are participants or users at the same time."²⁸⁵ *TEXT RAIN* relies on the ability to manipulate the text, and without that aspect the work would be of little aesthetic value. As Bell *et al's* definition of digital fiction implied, the semiotic function of manipulation is central to many works of digital art. Kirkpatrick argues these electronic fictions and "computer games [prepare] its players for a life operating graphical user interfaces, but not for a future in electronic engineering or programming."²⁸⁶ The users of these incunabula will be able to understand more advanced interfaces through their engagement with the prototypes. Interesting, the reflexive interface has been removed as much as possible in the most successful form of electronic literature. Videogames feature interface design that has favoured minimalism for immersive purposes

²⁸⁰ Adrian Mackenzie, *Cutting Code: Software and Sociality* (New York: Peter Lang, 2006), 5.

²⁸¹ N. Katherine Hayles, "Deeper into the Machine: The Future of Electronic Literature," *Culture Machine* 5 (2003), <http://www.culturemachine.net/index.php/cm/rt/printerFriendly/245/241>.

²⁸² Lev Manovich, "Generation Flash," in *New Media Old Media: A History and Theory Reader*, ed. Wendy Hui Kyong Chun and Thomas Keenan (New York: Routledge, 2005), 209–218.

²⁸³ Mark Sample et al., "Electronic Literature after *Flash*" (presented at the MLA Convention, Chicago, 2014).

²⁸⁴ Camille Utterback and Romy Achituv, "TEXT RAIN," 1999, <http://camilleutterback.com/projects/text-rain/>.

²⁸⁵ Bolter and Gromala, *Windows and Mirrors*, 13.

²⁸⁶ Graeme Kirkpatrick, *Critical Technology: A Social Theory of Personal Computing* (Aldershot: Ashgate, 2004), 80.

rather than constantly reminding the player they are within a gameworld, such as the interfaces of the *Grand Theft Auto* and *Elder Scrolls* series.²⁸⁷ This is mainly countered for comic effect, such as Sonic the Hedgehog tapping his feet and staring directly into the camera when the player does not move for a while.²⁸⁸ Espen Aarseth has acknowledged the immersion is based on the world rather than a traditional narrative favoured by print and film narratives.²⁸⁹ Users prefer to explore new worlds rather than engage in the meta-critical questions about the boundaries of the medium. The rise of indie games since the late 2000s has coincided with a wider re-exploration of the metafictional qualities of the medium. Artisan works such as *FEZ* and *Braid* revolt against the aesthetic of blockbuster titles through exploring the metafictional qualities of games in terms of their use of perspective and time respectively.²⁹⁰ In some of the most complex examples of the continuum, the interfaces exist across multiple media and these liminal texts are some of the most useful texts to consider.

Liminal Physical-Digital Hybrids

The four liminal texts explored below complicate the notion of the distinction between digital and physical literature and offer some of the ways in which we might address the physical-digital divide as a spectrum rather than a binary. All four texts are exemplars of this continuum as they contain both physical and digital artefacts. William Gibson, Dennis Ashbaugh and Kevin Begos Jr.'s collaboration *Agrippa (a book of the dead)* explores the tensions of the "late age of print" and the impermanence of digital media.²⁹¹ The second text also takes the form of a book augmented by digital media. Alberto Toso Fei's *Venice: The Ruyi* is a tourist guide with a twist: the reader explores Venice to solve a mystery with aid from SMS messages.²⁹² Nick Montfort and Scott Rettberg's *Implementation* challenges many of the traditional assumptions about electronic literature by relying solely on the user printing labels out and sticking them on various physical locations.²⁹³ The final liminal text, Christian Bök's *The Xenotext Experiment*, is the most experimental and arguably the most adventurous convergence between the physical and digital as Bök attempts to graft a poem into genetic code.²⁹⁴

²⁸⁷ Rockstar, *Grand Theft Auto V*, Playstation 3, 2013; Bethesda, *The Elder Scrolls V: Skyrim*, Playstation 3, 2011.

²⁸⁸ Sonic Team, *Sonic the Hedgehog*, Sega Mega Drive, 1991.

²⁸⁹ Espen J. Aarseth, "Quest Games as Post-Narrative Discourse," in *Narrative across Media: The Language of Storytelling*, ed. Marie-Laure Ryan (Lincoln and London: University of Nebraska Press, 2004), 361–376.

²⁹⁰ Polytron, *FEZ*, Xbox 360, 2012; Number None, Inc., *Braid*, Xbox 360, 2008.

²⁹¹ William Gibson and Dennis Ashbaugh, *Agrippa: A Book of the Dead* (New York: K. Begos, 1992).

²⁹² Alberto Toso Fei, *Venice The Ruyi* (Treviso: Log607, 2009).

²⁹³ Nick Montfort and Scott Rettberg, "Implementation," 2006, <http://nickm.com/implementation/>.

²⁹⁴ See Stephen Voyce and Christian Bök, "The Xenotext Experiment: An Interview with Christian Bök," *Postmodern Culture* 17, no. 2 (2007).

Agrippa

William Gibson, Dennis Ashbaugh and Kevin Begos Jr.'s *Agrippa* is a text steeped in mythology and even today, with the copious documentary evidence available on the *Agrippa Files*, it remains an enigmatic text.²⁹⁵ The work's mythic quality is the responsibility of its authors, since William Gibson has claimed to never have seen a physical copy, despite evidence of his autograph in several copies.²⁹⁶ There was only ever a limited release and only four research libraries have copies: the New York Public Library (NYPL), National Arts Library (NAL) at the Victoria & Albert Museum, Bodleian and Western Michigan University.²⁹⁷ To add to this confusion, there are three extant versions: a run of 10 artists' proofs (NAL and Bodleian), 95 deluxe versions (NYPL) and a small edition of 350 (Bodleian and Western Michigan). The object thus projects an aura associated with very few books before readers have engaged with the physical artefact. Its relative scarcity has not stopped a variety of scholars using *Agrippa* as an example of the reaction to the trivial reproducibility of the book in the late twentieth century,²⁹⁸ an exemplar of the shift from viewing the digital as immaterial to a more nuanced approach to Gibson's "cyberspace,"²⁹⁹ and as a cybertext that demonstrates the removal of the repetition of the reading experience.³⁰⁰

An examination of the physical object is revealing as the project's impressive reputation does not prepare the reader for the experience of the physical object.³⁰¹ The massive book (over 40cm long) is encased in a heavy casing that has been "designed to look like a buried relic."³⁰² This is evocative of a eulogy for the book. Once the reader lifts off the casing, the book itself is comprised of around 80 pages, although the last twenty pages have been glued together to contain a floppy disk with a poem also entitled "Agrippa."³⁰³ The pages of the text also have atypical content, as the main "text" is part of the human DNA sequence. It is difficult to read the text in any traditional manner, but instead the reader is forced to mediated on the life cycle and demise of three objects: (1) *print culture* through the call back to the Gutenberg Bible

²⁹⁵ A comprehensive website documenting the composition and reception history of the project.

²⁹⁶ Kirschenbaum, *Mechanisms*, x.

²⁹⁷ Bibliographical information about *Agrippa* are sourced from multiple sources including inspecting the National Arts Library copy and the following bibliographical sources: Alan Liu et al., "The *Agrippa Files*," 2005, <http://agrippa.english.ucsb.edu/>; William Gibson, *Agrippa: A Book of the Dead* [NAL Record], 1992, <http://catalogue.nal.vam.ac.uk/ipac20/ipac.jsp?session=profile=nal&uri=full=3100001~!221076~!0&ri=1>; William Gibson, *Agrippa: A Book of the Dead* [Bodleian Catalogue Record] (New York: KBegos, 1992), http://solo.bodleian.ox.ac.uk/primo_library/libweb/action/dlDisplay.do?vid=OXVU1&docId=oxfaleph019300382.

²⁹⁸ Ted Striphas, *The Late Age of Print: Everyday Book Culture from Consumerism to Control* (New York: Columbia University Press, 2011), 41.

²⁹⁹ Steven Jones, *The Emergence of the Digital Humanities* (New York: Routledge, 2013), 81.

³⁰⁰ Eskelinen, *Cybertext Poetics*, 77.

³⁰¹ When I visited the National Arts Library to examine their copy of the book, I was unprepared for the security measures afforded to the text. *Agrippa* is not kept in their regular special collection and must be requested outside of usual catalogue requests. Moreover, the copy must be delivered by two special collection librarians to ensure it was delivered to the library user.

³⁰² Liu et al., "Agrippa Files."

³⁰³ The NAL copy's glue is becoming undone and the sheets are becoming separated.

through rendering the DNA sequence in two forty-two line columns and the book's sarcophagus; (2) *biology* in the textual references to the DNA of a fruitfly and the book's subtitle *a book of the dead*; and (3) *digital culture* with the inclusion of a floppy disk that self-erases after a single execution. It is only fitting that the corporeal entity of the book is juxtaposed with a floppy disk whose obsolescence came just a year after the poem was released. The floppy disk not only self-erased after running once, but the software running the mechanism became obsolete a year after the book's publication.

The floppy disk contains a 305-line poem that has probably enjoyed the greatest attention of all the aspects of the *Agrippa* project given the prominent history of the mechanism that erased the floppy disk after a single viewing. The ephemerality of the book itself primarily exists given the limited run of the book rather than the disappearing ink. The full text of the poem "Agrippa," however, can easily be found through a quick search that links to a multitude of copies due to a careful transcription from a videotaped performance of the text.³⁰⁴ The trivial nature of copying text on the computer allowed for rapid transmission of the poem without the expense of printing or distributing a manuscript copy, creating a greater audience for the poem than the initial run would have allowed. The poem itself is available on Gibson's website, so it is unnecessary to run any of the extant floppy disks.³⁰⁵ Gibson is not known for his poetry, but rather his speculative fiction and pioneering cyberpunk novels, so the autobiographical content of "Agrippa" represents a radical departure from his oeuvre. The poem gestures towards an ever-fading lifetime connected to his childhood and memories of his father through the lens of a "A Kodak album of time-burned/black construction paper" (l.7-8).

The running theme of ephemerality is continued by another major element of the book, as overprints of antique newspapers have been pressed onto the page using uncured photocopy toner. While the floppy disk has had a widely popular afterlife, these overprints are the most delicate parts of the project, as if the reader turns the page too quickly, the images are disturbed and the toner is displaced on the adjacent page. The images themselves present a media archaeology of forgotten technologies such as "Cooper's Universal Enlarging Lantern" and a "photogenic pistol [...] For Instantaneous Photography at Night."³⁰⁶ Although the rest of the work, with its heavy-set cover, self-erasing floppy disk and large size, indicate the necessity of the reader carefully making decisions about how to approach the work, the uncured toner best represents the performative aspects of reading that *Agrippa* exemplifies as the reader needs to carefully turn the pages lest the toner smudges. *Agrippa's* strength as an object resides in its

³⁰⁴ Kirschenbaum, *Mechanisms*, 225.

³⁰⁵ William Gibson, "Agrippa," 1992, <http://www.williamgibsonbooks.com/source/agrippa.asp>.

³⁰⁶ Gibson and Ashbaugh, *Agrippa: A Book of the Dead*, 41; 21.

ability to make the reader question the ways in which they engage with the book as object rather than the traditional linguistic content.

Venice: The Ruyi

The second liminal text also plays with the physical-digital divide through the form of the book.

Toso Fei introduces his text as an archetypal adventure with a legendary background:

As the 13th century drew to a close, Marco Polo returned from China with the Ruyi, a legendary scepter he stole from Emperor Kublai Khan. After Marco Polo's death, the magical sword lay hidden with the traveler in his tomb in Venice. Today, both the tomb and the scepter have vanished. Carlo Dolfin, an old Venetian professor, has found some papers in his personal archive that could be of vital importance to locate the Ruyi. But he needs your help to find it, before it falls into the wrong hands....³⁰⁷

Toso Fei uses this background to create an iterative infrastructure to make “sixty stories about sixty different places in Venice [...] *Venice The Ruyi* is an itinerary lined with enigmas to uncover the mysteries and learn about the most enchanting places of Venice. You can be the hero of the story.”³⁰⁸ The text shares many traits with Choose-Your-Own-Adventure books, as the reader can make their own paths through the text, a common feature of early digital fiction.

There is a further step in this hybridisation process, whereby this adventure unfolds in a physical location: “WHAIWHAI is an adventure to live in the city you want to explore. You just need one of our books and a mobile phone to start the experience. You will discover streets, hidden places and squares, stories and original tales about the city.”³⁰⁹ The book contains a map of Venice and is comprised of 45 pages cut into three to create plethora of potential base texts, with frequent recursion in the creation of narratives. The narrative starts with a prologue narrated by Carlos Dolfin, a fictional “professor of history at the University” who has uncovered “Qubilia Khan's magic imperial sceptre which Marco Polo brought back to Venice, and which was hidden by the Most Serene Republic of Venice.”³¹⁰ The adventure begins as readers are told “There is no time to lose: starting with the few clues I have in my possession, contained in the coded diary, you must try to get hold of the magical object before it falls into the wrong hands.”³¹¹ After reading this prologue, the reader must engage with the work's multimodality, as once the narrative splits into three sections, it is clear that the three slips do not represent a coherent narrative but rather sections that must be reconstructed with outside help. Many sections begin and end with different clauses, for example {5a} finishes “drawn in a continuous line.” and {5b} opens “at him with a knife.” It is clear that the 85,000 potential

³⁰⁷ Alberto Toso Fei, “THE RUYI VENICE,” 2009, <http://www.whaiwhai.com/en/cities/venice-the-ruyi/>.

³⁰⁸ Ibid.

³⁰⁹ Ibid.

³¹⁰ Toso Fei, *Venice The Ruyi*, 13.

³¹¹ Ibid., 15.

combinations of the pages ensures that the reader will not easily piece the narrative together without resorting to help from the other medial aspects of the work.

SMS provides a further level of the adventure and allows the player to alter the level of difficulty and the length of time the game requires.³¹² If the adventurers pick the default mode, they are told “you will get a two-hour experience and explore about six places in the city.”³¹³ Toso Fei promises that the “WHAIWHAI guides [such as *Venice: The Ruyi*] help you search for secrets hidden in cities. They’re unconventional guides for tourists and travellers who are looking for an out-of-the-ordinary experience.”³¹⁴ *Venice: The Ruyi* features a complex interplay between its three constituent elements. All three elements of the text work in symbiosis rather than certain elements remaining peripheral. It is impossible to read the book without engaging with the other parts of the game as you do not receive enough instructions, and since the most important aspect of the work is to explore Venice, textual elements alone also require the physical engagement with traversing Venice. The text’s set-up focuses primarily on the exploratory elements and the facilitation of finding new and secret locations rather than exploring a textual world, which just supplements the explorers’ enjoyment.

Implementation

Nick Montfort and Scott Rettberg’s *Implementation*

begins as sheets of stickers, with a different text on each sticker. We will distribute these sheets to individuals, both personally and via post. Instructions, asking people to peel the stickers off and place them in an area viewable by the public, will accompany the sheets. The sheets themselves will not explain the project, but will refer interested parties to the website <http://nickm.com/implementation> where they can learn more about *Implementation*.³¹⁵

Implementation is an important liminal work since it has been authored by two digital literature pioneers but they have largely eschewed digital textuality for the project as once the user downloads the stickers, the work is purely physical. The output of the work is fragmented and divorced from digital media. The majority of readers will only encounter a few elements of the text and probably ignore them as ephemera. Readers will only encounter more than a fragment if they search for further nodes on the Web. Although the text is intrinsically linked to the web through its transmission, all traces of this context are removed from the printed product. If a reader is interested in the work, however, searching for the quotation of Google is the only way in which they can find out more about the project. This distancing of the physical product from its digital origins engages the reader with the mediating effect of search engines as they

³¹² Ibid., 8–9.

³¹³ Ibid., inside cover.

³¹⁴ Ibid., 7.

³¹⁵ Montfort and Rettberg, “Implementation.”

accurately hunt down the project. The reader must engage with a more ergodic form of digital mediation than a QR code or URL.³¹⁶ Montfort and Rettberg's final output from the project was a cross between the physical and digital in the form of a print-on-demand book documenting the physical sites *Implementation* had been displaced, once more disassociating the text from its original network. The artists' book reproduces Montfort and Rettberg's original linear progression of the story, demonstrating their intentions for the story to be read in a linear manner rather than assuming the separate stickers as nodes that can be recombined in various forms. The book emphasises both the location and the words on the label as there is a long distance shot establishing location and then the close-up of the narrative, as the project's intentions are deeply tied to remote locations.

The processes involved in the composition of the separate nodes of *Implementation* focus on the materiality of the page, as the user may download eight separate "instalments" of the work in one of two formats: "letter" or "A4."³¹⁷ These two formats must then be printed on sheets with ten labels on in order to be intelligible to the reading public. There is nothing to stop people interested in the overall narrative from simply reading the self-described "novel" in eight instalments and gaining a deeper insight to characters populating the fictional city of *Implementation*. Although Montfort and Rettberg constructed the narrative to be read in this way, the nodes also form a relative autonomy within their nine lines. Dialogue does not stretch across the labels, so the reader should be able to follow a vignette that ties into a larger story. The labels are simultaneously microfictions and pages of a larger narrative. One such vignette builds up a description of Samantha in the macro-narrative, but only the level of the single label provides a vignette of her behaviour:

Samantha makes stickers. Stickers from aluminium plates, velour stickers, velvet stickers—feelies, collage stickers with lists from the *New York Times*, lists from the *Implementation Star*, crushed glass stickers that change color in sun and rain, stickers of onion peel and orange skin, stickers that mention revolution, stickers that pay tribute to Japanese films and Afghan women in burkas, stickers recounting what talking Barbie dolls say, stickers made from locks of hair.³¹⁸

Despite the winking allusions to stickers that do not permeate many of the other labels, this is typical of the units of *Implementation*. The personal deixis within the piece is entirely consistent as the reader can immediately figure out what and who is being described, moving *Implementation* away from the potential disorientation of hypertext fiction and instead into the realm of distributed fiction with a fairly traditional format. Despite *Implementation's* born-digital poetics, the rest of the work betrays its avant-garde tendencies.

³¹⁶ An "ergodic" text requires a non-passive reaction from the user. See Aarseth, *Cybertext*.

³¹⁷ Ibid.

³¹⁸ Ibid., #1, 3.

The Xenotext Experiment

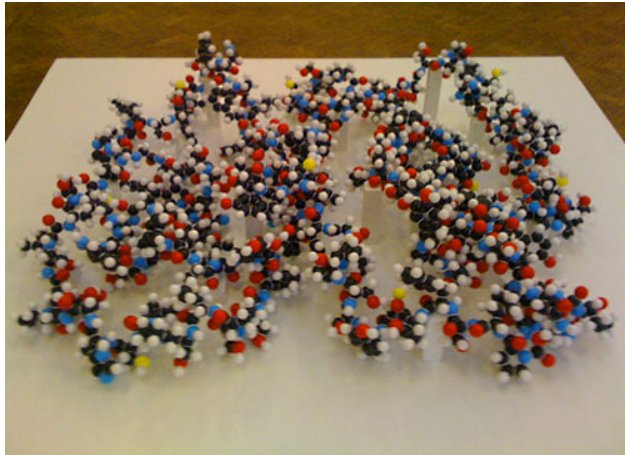


Figure 3 Protein 13 - Bök's choice of protein to inscribe with his poem³¹⁹

The Xenotext Experiment represents one of the most ambitious works of poetry in the early twenty-first century. As the strangest textual entity in the thesis, it is worth quoting Bök's mission statement in full:

“The Xenotext Experiment” is a literary exercise that explores the aesthetic potential of genetics in the modern milieu—doing so in order to make literal the renowned aphorism of William S. Burroughs, who has declared that ‘the word is now a virus.’ I am proposing to address some of the sociological implications of biotechnology by manufacturing a ‘xenotext’—a beautiful, anomalous poem, whose ‘alien words’ might subsist, like a harmless parasite, inside the cell of another life-form.³²⁰

This is an example of the growing genre of “biological media,” in which biotechnologists inscribe text on the genetic make-up of various life forms.³²¹ While scientists have successfully stored text in DNA, Bök wishes to modify the organism to secrete a new poem.³²² *Xenotext* represents the greatest convergence and divergence on the physical-digital continuum as an arresting intervention between nature and science.³²³ Biotechnology represents a convergence between some of the most advanced computational methods and the underlying structures of nature, thus representing the convergence of the digital and physical in the construction of a new physical entity through cutting-edge computation, while the output is purely physical.

³¹⁹ Christian Bök, “The Text Festival (Part 2),” *Harriet: The Blog*, April 27, 2011, <http://www.poetryfoundation.org/harriet/2011/04/the-text-festival-part-2/>.

³²⁰ Voyce and Bök, “The Xenotext Experiment,” para. 58.

³²¹ Darren Wershler, “The Xenotext Experiment, So Far,” *Canadian Journal of Communication* 37, no. 1 (2012): 47–48, <http://www.cjc-online.ca/index.php/journal/article/view/2526>.

³²² *Ibid.*, 49.

³²³ *Ibid.*, 47.

The poem within the genome (“any style of life/ is prim...”) generates a response in the form of a second poem (“the faery is rosy / of glow...”).³²⁴ Both of these poems are constrained by the affordances of writing using the genetic sequence of Protein-13, thus *Xenotext* continues Bök’s exploration of constrained writing that has influenced his *oeuvre*, from the lipogrammatic quality of *Eunoia* to the chemistry-based poetry of *Crystallography*.³²⁵ The project is on going, but Bök’s endgame is to showcase both the physical and digital aspects of the work in the final book:

I foresee producing a poetic manual that showcases the text of the poem, followed by an artfully designed monograph about the experiment, including, for example, the chemical alphabet for the cipher, the genetic sequence for the poetry, the schematics for the protein, and even a photograph of the microbe, complete with other apparati, such as charts, graphs, images, and essays, all outlining our results. I want to include (at the end the book) a slide with a sample of the germ for scientific inspection by the public.³²⁶

At its most extreme, the digital and physical converge through *Xenotext*, a text, which, like *Agrrippa*, is concerned with life and death through media. These liminal texts represent some of the most complex boundaries between digital and physical media that can be extended to other, more straightforward texts.

A Three-Dimensional Taxonomy of Convergence

The liminal texts above cross several genres of literature that help illustrate connections between digital and physical media. In order to explore the continuum between the two broad categories, we shall now explore a taxonomy of where the two connect. There are three main axes on which we can identify interesting properties of literature: *material*, *structure* and *executable*. The three axes represent the ways in which literary works can be transformed implicitly and explicitly and offer a blueprint for modelling a unified model of hypertext composition and reception that will be built upon in the following chapter.³²⁷ The transformational aspect of the works is particularly important when considering hypertext and malleable text, and the transformations along the different axes perform different purposes for connections that will be revisited in the following chapters. This taxonomy reveals the ways in which we can discuss the convergence between digital and physical literature by approaching the ways in which they are explicitly metafiction. Moreover, it reveals an important distinction between forms of literature

³²⁴ Christian Bök, “The Xenotext Works,” *Harriet: The Blog*, 2011, <http://www.poetryfoundation.org/harriet/2011/04/the-xenotext-works/>.

³²⁵ Christian Bök, *Eunoia* (Edinburgh: Canongate, 2008); Christian Bök, *Crystallography*, 2nd ed. (Ontario: Coach House, 2003).

³²⁶ Voyce and Bök, “The Xenotext Experiment,” para. 64.

³²⁷ As this section offers the foundations of a theoretical framework that will be developed in later chapters, the text is mostly descriptive in mapping out the terrain of the taxonomy with appropriate examples. The structure of the section emerges from following the axis from their most regular forms to the most exceptional.

that are more appropriate for understanding either compositional or receptional forms of hypertext.

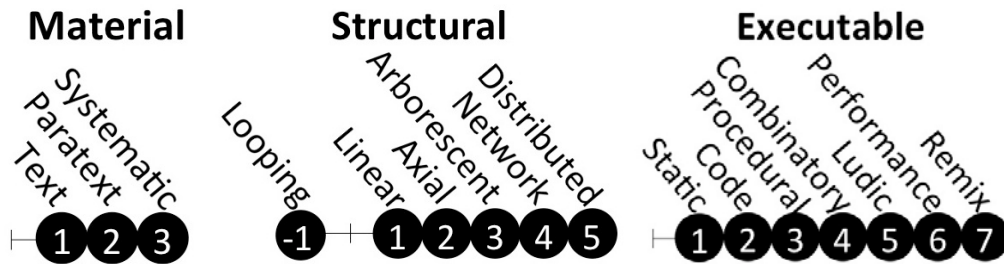
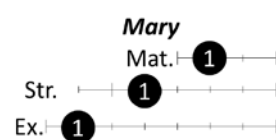


Figure 4 Overview of three-dimensional taxonomy

The material axis runs from a theoretical but practically impossible immaterial plain text to a work that substantially alters the physical properties of the object in a systematic manner. The accretion of paratext structures or reliance on these structures offers a middle ground for such transformations too. Structural works can be organised in terms of their openness. Looping forms a closed structure more insular than a linear text, which can then be expanded into various strands of multilinearity derived from a network. The final step is to break the links between nodes to create a distributed narrative. The final axis differentiates the degree to which the text can be executed or altered by the reader. This traces the transformative potential of code, procedural and performative literature with remix representing the ultimate act of transformation. The model is media-agnostic as both physical and digital texts can sit in many of the 108 potential positions of the taxonomy. Since this is a three-dimensional model, texts can be exemplars of multiple categories and occasionally an aspect of one axis is dependent on the certain conditions of another axis. For example, the more executable a print text appears, the more likely it has deviated from the traditional material form or structure of print. Moreover, it is important to remember that although these three axes refer to the degree in which the audience of a text can transform its contents, these practices primarily reveal the processes of composition rather than reception. The executable axis is the only aspect of the model that can be seen primarily as a reception-driven factor in textual production.

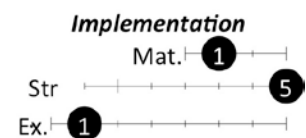
Before exploring the axes of the taxonomy in more detail, it is worth first positioning the taxonomy against the type of text that forms its fulcrum and to position the liminal examples discussed above within this framework. The taxonomy compares literature to a hypothetical



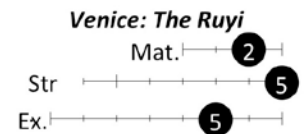
work that is presented in a plain text format, is entirely linear, and does not tease any form of engagement with the reader. Such a text is only a theoretical example, but more specifically, a traditional novel is close to these parameters while it still is contained within a physical vessel

and will often have some paratext elements of navigation, although these can easily be ignored. Vladimir Nabokov's first novel, *Mary* (a static linear text),³²⁸ is a useful example of this kind of stripped down text as its form and structure are highly linear, making the structure typical.³²⁹ Although the text is supplemented by paratext, it is generic in the form of numbered chapters and an epigram from Pushkin that clearly denotes the tradition Nabokov is writing in, a useful tool for analysis but not integral to the aesthetics of the text and can readily be ignored. The reader also receives no prompts to engage with the text on a level beyond reading, so there are no executable elements within the text.

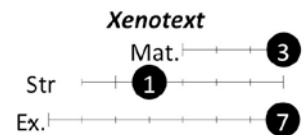
The four liminal texts offer more interesting results when analysed through the lens of the taxonomy. *Implementation* (a static distributed text) is the most typical of the four texts, as it



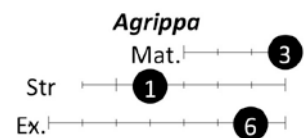
functions as a traditional text in term of its materiality, since once the text is printed out, all paratext traces are removed. Equally, the reader is afforded limited agency when reading the individual nodes, but it equally requires an increased effort to hunt down the total narrative. The structure is highly atypical, however, as *Implementation* is an example of a distributed narrative. If the reader is interested in reading the entire narrative, they must find it in its complete form on the website or artists' book. *Venice: The Ruyi* presents a different case study, as it alters the structure of the typical book along all three axes. The structure of the text has been modified on the material level as



Toso Fei has composed a text that has split the page into three different sections that can be flipped separately to create new combinations of the narrative, as well as the disruption on the levels of the physical traversal of Venice and the use of SMS. The locative aspects of *Venice: The Ruyi* (distributed ludic paratext) and the use of disparate media assure that the text also fits into the category of a distributed narrative since the reader must attend



several physical locations. If considered purely within the confines of the taxonomy, *Xenotext* (linear systematic remix) and *Agrippa* (linear systematic performance) are remarkably similar texts, as they both systematically transform their media into a new form, although this is entirely based upon the texts' materiality, as the human-readable text of both projects is linear. The main distinction between the two liminal texts resides in the executable elements of each text; while *Agrippa*



is a performative text as the presence of the uncured toner assures that the reader carefully performs the turning of the page, Bök's *Xenotext* is a remix of an organism in order to produce a second poem. The four liminal texts are exemplars of the extreme transformations made

³²⁸ Each literary work under discussion will be placed on the three axis through a diagram and a brief description of its central aspects by its first mention.

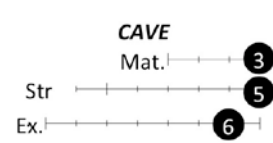
³²⁹ Vladimir Nabokov, *Mary*, trans. Michael Glenny and Vladimir Nabokov (London: Penguin, 2007).

possible through a deeper understanding of the convergence of physical and digital media. The following section will explore the three axes in greater detail with a range of examples of texts from across the taxonomy. The chapter will conclude by reassessing the position of hypertext within this taxonomy to demonstrate the need for a new model of hypertext.

Material

The first axis on our taxonomy of convergence concerns the degree of transformation from a material perspective. As we have already seen, all literature has a material element, which appears in a typical material form, such as a standard book. The axis assesses the degree to which the text foregrounds the materiality of itself as an object beyond generic expectations. Stripped of all metadata and existing in a purely linguistic sense, an ideal incorporeal plain text is the origin of the material axis; every layer of metadata, paratext and physical incursion brings the bibliographical codes of the text more clearly into focus.³³⁰ The accretion of extra or unexpected paratext, such as the use of footnotes, indexes, running-titles and a plethora of other extra-textual devices can transform the text's form from focusing purely on the linguistic aspects of the text to reassessing the aesthetic value of these navigational and structural entities. Paratext are normally meant to be near invisible as they aid the reader, but in the paratext transformation, they instead become an integral part of the fiction. This can be taken one step further when the transformation is non-verbal but instead physical. These transformations are *systematic*, as the form of the literary artefact itself is reconfigured through adjustments to the way in which the user interacts with it. This is often achieved through taking a single element that defines the medium and removing it, such as a book that is comprised entirely of loose leaves.

At its most extreme, text is transformed into a pseudo-virtual reality such as the *Cave Automatic*

 *Virtual Environment* (CAVE, Systematic distributed performance), which surrounds the reader with words in multiple dimensions. CAVE is a generative platform for three-dimensional representations of text.³³¹ CAVE projects onto several different walls, and along with using three-dimensional technology creates an immersive environment utilised by fiction such as *Screen* and *Up Against the Screen Motherfuckers*, both created at Brown University and presented in the second *Electronic Literature Collection*.³³² The CAVE environment presents text as a material and immersive object

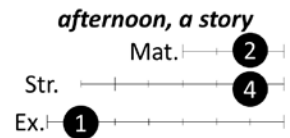
³³⁰ Craig Dworkin, *No Medium* (Cambridge: MIT Press, 2013), 59.

³³¹ Carolina Cruz-Neira et al., "The CAVE: Audio Visual Experience Automatic Virtual Environment," *Communications of the ACM* 35, no. 6 (June 1992): 64–72.

³³² Noah Wardrip-Fruin et al., "Screen," in *Electronic Literature Collection 2*, ed. Laura Borràs et al. (Cambridge, Massachusetts: Electronic Literature Organization, 2011), http://collection.eliterature.org/2/works/wardrip-fruin_screen.html; Justin Katko, "Up Against the Screen Mother Fucker," in *Electronic Literature Collection 2*, ed. Laura Borràs et al. (Cambridge, Massachusetts: Electronic Literature Organization, 2011), http://collection.eliterature.org/2/works/wardrip-fruin_screen.html.

rather than a form of communication. *Screen* offers an alternative to close reading that we are used to in traditional literature. *Screen* suggests a transition from the screen-paper paradigm in its initial state through to shifting text into an environment. This represents a radical recontextualisation of the material properties of text that few other works engage with, but nonetheless, they stretch the material aspects of the text.

In most fiction, paratext is essentially invisible while the reader is immersed in the main body but these textual apparatuses can be distorted as part of the fictional world. Paratext such as footnotes and indexes are used in fiction as a metafictional device to engage the reader with the juxtaposition between reality and fiction. These expectations can be subverted, something which comes through in the early “links that yield,” unmarked links in early *Storyspace* fiction that required the reader try various words in hope of the invisible underlying connection. This is the proverbial wolf in sheep’s clothing, as the paratext of the author’s rigid link is disguised as a discovery of the reader. Most famously, Michael Joyce’s *afternoon* (static paratext network) did not highlight the locations of the links embedded within the text, or offer a global map to orientate the reader. The interface within the nodes of *afternoon* belies the text’s underlying complexity, as it resembles the print page with no indication of which words link to other nodes. The early node entitled {her hand} is typical in not signifying the links, the node is displayed simply as:



She rose half-way from the sofa and extended her hand. I rolled my chair across the carpet toward her. It was a very formal thing in the dark office late on a winter night, drinking coffee.

I was to say there was a certain warmth in her grasp, but that would be inaccurate. Still, you know when a woman has some sense of the effect of her touch. She had slender fingers, dark nails.

I am trying to convey the ceremony of it. Everything begins there, don’t you see?³³³

Although the interface does not directly reveal its links, but an additional feature of *afternoon* reveals the links from within the node (table 1). The path is the name of the link, while the guard field denotes the conditions for the destination to be reached. The vertical bar “|” indicates an OR condition, while the tilde “~” denotes NOT.³³⁴ From these simple rules, we can begin to see that there are only two direct links on this page (the “yes ceremony,” “no ceremony” rely on the ability to answer any node with a yes/no answer, while the “yes” path is the default option if no other selection is made), hidden for the reader who clicks on either “her touch” or “ceremony.” The linking mechanisms are obfuscated from the reader to the degree that they are encouraged to explore the text without knowing where to click.

³³³ Joyce, *Afternoon*, {her hand}.

³³⁴ Kirschenbaum, *Mechanisms*, 182.

Path	Destination	Guard Field
> her touch	octopi	her touch
> ceremony	ceremony	ceremony
> yes ceremony	here	yes “tit”
> no ceremony	begin	no n
yes	three	~yes&~no

Table 1 The links from {her hand} in *afternoon, a story*

Conversely, physical literature explores its reliance on certain paratext by creating forms that

exaggerate their reliance on these features. In print, Vladimir Nabokov’s *Pale Fire*’s (static paratext network) explicit hypertextuality revolves around the concept of a scholarly edition. Milorad Pavić’s *The Dictionary of the Khazars* revolves around the paratextual play of a dictionary.³³⁵ Both texts use the genre of their paratext as a literary artefact and an integral part

of their fiction since the scholarly edition of *Pale Fire* raises questions about the reliability of the annotator, and the tripartite format of *Dictionary of the Khazars* (static paratext network) to represent the subjectivity of three different religions generates concerns about the subjectivity of the entire narrative through the dictionaries. Steven Moore has argued that playful use of paratext has been an integral part of fiction since *Don Quixote* and a range of paratext have been explored as core aspects of the fiction.³³⁶ Paratextual use of hypertext features has been overemphasised in the literature, as they only offer a static, preordained network rather than allowing the reader to explore the text. Digital literature challenges the interface of a pre-established format or genre of text.³³⁷ Dirk Vis’s “Password Marco Polo” (looping paratext performance) demonstrates an interface subversion in recent digital poetry. The reader only has limited control over the movement of the poem in “Password Marco Polo.” Instead of requiring the user to scroll through the text by clicking and dragging the text around the screen, or controlling the speed through an extratextual control panel, Vis’s poem instead reads the coordinates of the user’s cursor to dictate the speed of the text. The vertical axis changes the perspective of the words, while the horizontal axis controls the speed, as the text moves faster when the reader moves their cursor towards the right-hand side of the screen. This implicit interface subverts the reader’s expectations of the mouse as only becoming active once they have directly pressed a button rather than a central aspect of the interface that cannot be removed. The reader cannot help but actively influence the speed of “Password Marco Polo.”

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³³⁵ Milorad Pavić, *Dictionary of the Khazars: A Lexicon Novel in 100,000 Words [Female]*, trans. Christina Pribicevic-Zoric (New York: Vintage, 1989).

³³⁶ See Steven Moore, *The Novel, An Alternative History: Beginnings to 1600* (New York: Continuum, 2011), 580–581 for an extensive list of paratextual devices in novels.

³³⁷ Dirk Vis, “Password Marco Polo,” *New River Journal* (Spring 2013), <http://www.cddc.vt.edu/journals/newriver/13Spring/password/index.html>.

Systematic literature moves beyond experimenting with paratext to transform the work entirely. *CAVE* demonstrates a method to integrate the digital and physical world, and similarly, as the focus moves from the text to the system and materiality of the text, we move to peripheral forms of literature including artists' books and modified texts. Richard Kostelanetz argues that the artist's book "envisions what else 'the book' might become."³³⁸ There is a continuity between the experimental nature of both artists' books and digital literature as they both explore the limits of their respective forms, albeit often at the neglect of the text.³³⁹ Morgan and Lyons agree that artists' books concern the medium as well as the concept.³⁴⁰ A clear example of the convergence between media can be seen in Maria Fischer's artist book *Traumgedanken* (a static axial systematic transformation, figure 5).³⁴¹ Fischer's project transforms the printed page into a dense interconnected tangle of threads weaved into connections through the text. Rather than being paratextual, this physical revision of the text becomes a systematic transformation of the text. It is impossible to read the text without engaging with the new apparatus of the text. The zenith of systematic transformation of the text appears in the form of permanently altered books, which can only be read as objects rather than for any textual hermeneutics. Craig Dworkin's *No Medium* explores blank works of art as an extreme form of systematic literature.³⁴² Drucker states, "the transformed book is an intervention. It generally includes acts of insertion and defacement, obliteration or erasure on the surface of a page which is already articulated or spoken for."³⁴³ These projects reach their pinnacle in the form of Dieter Roth's "literary sausages," the result of shredding, boiling and stuffing literature into sausage casing, and Denis Aubertin's baked books.



³³⁸ Richard Kostelanetz, "Book Art," in *Artists' Books: A Critical Anthology and Sourcebook*, ed. Joan Lyons (New York: Visual Studies Workshop, 1985), 27.

³³⁹ Johanna Drucker makes the comparison between the two in "A Review of Matthew Kirschenbaum, *Mechanisms*."

³⁴⁰ Robert Morgan and Joan Lyons, "Systemic Books by Artists," in *Artists' Books: A Critical Anthology and Sourcebook* (New York: Visual Studies Workshop, 1985), 207.

³⁴¹ Maria Fischer, "Traumgedanken," 2010, http://www.maria-fischer.com/en/traumgedanken_en.html.

³⁴² Dworkin, *No Medium*.

³⁴³ Johanna Drucker, *The Century of Artists' Books* (New York: Granary Books, 1995), 109.

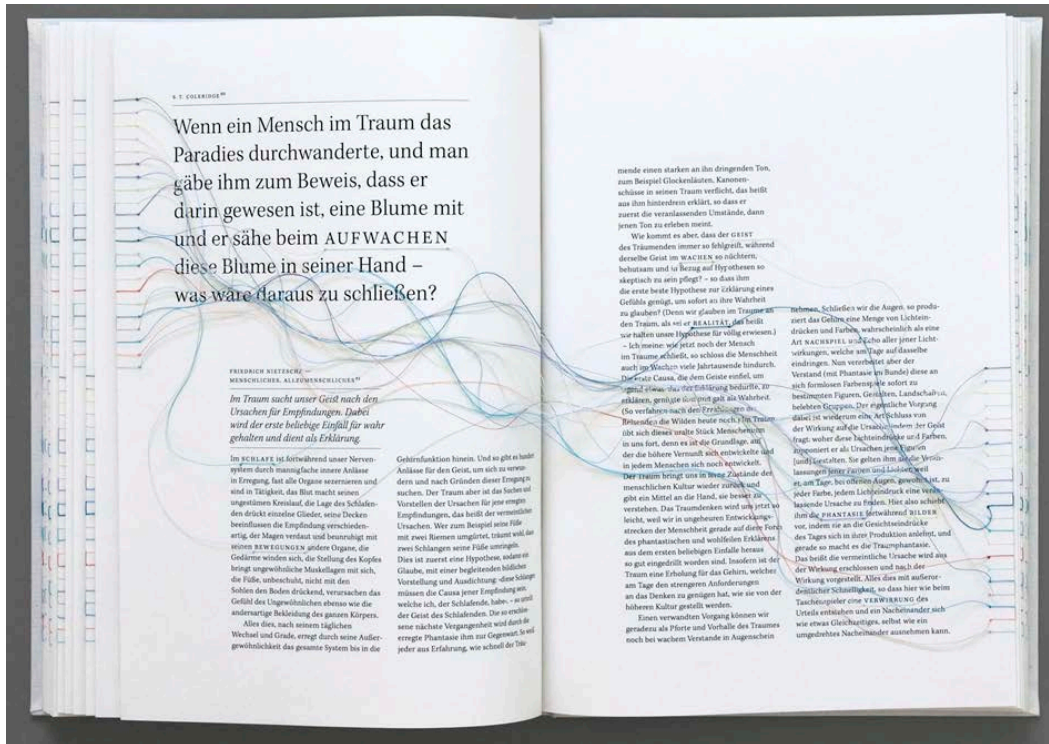
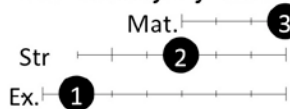


Figure 5 Maria Fischer's *Traumgedanken*

The material text cannot be reversed at this stage, and equally, the work of literature becomes a work of art, completing a further transformation. Brian Kim Stefans's two-dimensional kinetic-

The Dreamlife of Letters



poem, "The Dreamlife of Letters" (static axial systematic transformation, figure 6) represents an example of a digital systematic transformation, as Stefans has appropriated text from Rachel Blau DuPlessis and transformed it into a kinetic concrete poem.³⁴⁴ Stefans's work has a dual systematic transformation of the original text into something that challenges the form.

DuPlessis's text was initially transformed into a concrete poem and then further manipulated into episodic kinetic poems. The second transformation is a potential feature of audiovisual media such as film and digital media, as the words of the poem flutter around the bright orange screen. Section 33, entitled "um to us" offers a typical example of the way in which the kinetic element functions. Three segments of "con," "sci" and "ous" scroll from left to centre and then are prefixed by "um"s and "un"s that attempt to fight for dominance. The kinetic features of Stefans' text defamiliarises the readers' interpretation of the text, as the text moves too fast to be read closely.

³⁴⁴ Brian Kim Stefans, "The Dreamlife of Letters," in *Electronic Literature Collection 1*, ed. N. Katherine Hayles et al. (Maryland: Electronic Literature Organization, 2006), http://collection.eliterature.org/1/works/stefans_the_dreamlife_of_letters.html.

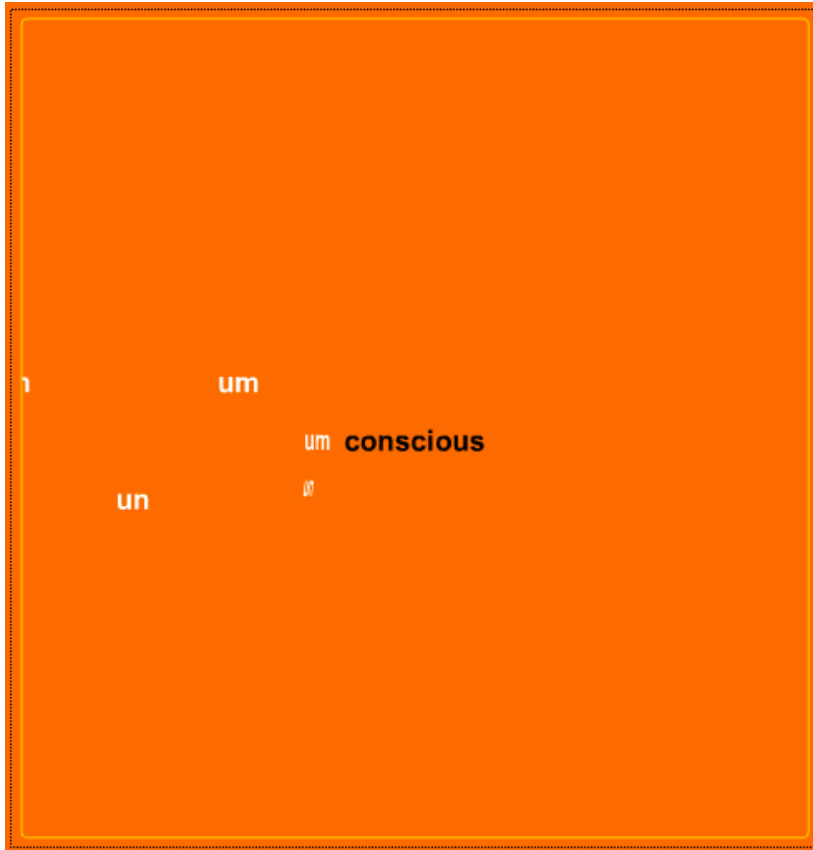
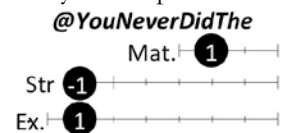
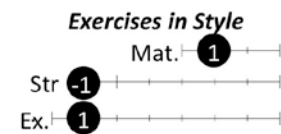


Figure 6 Brian Kim Stefans's "The Dreamlife of Letters"

Structural

The structural aspects of the text are closely related to its materiality, but structure can equally be manipulated and explored through both material and linguistic methods. When we think about works of hypertext fiction, the structural elements of the work have been emphasised, although this largely appears to be part of the composition process. We can think about the structure of a literary text from closed to open. The most closed form is the loop. Raymond Queneau's *Exercises in Style* (static looping text) offers a linguistic structure for repetition.³⁴⁵ Queneau uses different registers to describe an altercation on the bus and a second chance encounter

with the antagonist later. The coherence of the recurring scenario drives the humour of the text's repetitions when the original narrative is parodied and transformed as a cross-examination, prognostication or double entry. Darius Kazemi has recently developed a similar digital gambit through what he describes as "Brute-forcing an episode from Gravity's Rainbow" pertaining to the Kenosha Kid, @YouNeverDidThe (static looping text).³⁴⁶ Kazemi here refers to a



³⁴⁵ Raymond Queneau, *Exercises in Style*, trans. Barbara Wright (Richmond: Oneworld Classics, 2009).

³⁴⁶ Darius Kazemi and Thomas Pynchon, "@YouNeverDidThe [Kenosha Kid]," *Twitter*, 2013, <https://twitter.com/YouNeverDidThe>.

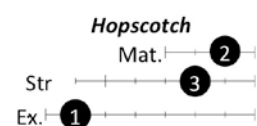
repeated motif within an episode of *Gravity's Rainbow* in which the phrase “you never did the Kenosha Kid” is repeated with a variety of intonations and punctuation.³⁴⁷ Influenced by an earlier blog post on the motif,³⁴⁸ Kazemi has created a Twitterbot—or a script that automatically posts procedurally generated output to Twitter at a regular interval, in this case, every two hours—that riffs on “you never did the Kenosha Kid” by repeating the phrase with different punctuation such as “You—never... Did—the Kenosha, kid.” and “You never. Did! The... Kenosha kid?”³⁴⁹ This constant repetition attempts to demonstrate the range of possibilities of the phrase beyond Pynchon’s published examples.

Repetition is the most closed form of structure as it returns to the same context repeatedly, creating new connections from existing properties, while the structure can be more open. The amplification of non-linearity of hypertext fiction can be seen in forking and distributed narratives and realised conceptually in the frontier of endless fiction. In *Reading Network Fiction*, David Ciccoricco delineates between three categories:

axial, *arborescent*, and *networked*. In general terms *axial* denotes a structure situated along an axis; *arborescent* denotes a branching structure resembling a tree; and *networked* denotes an interconnected system of nodes in which there is no dominant axis of orientation.³⁵⁰

Ciccoricco explicates a scale of *interconnectivity*, that is, the degree to which the text loops back and converges rather than just diverging. Axial narratives do not allow the reader to diverge from a single path, while arborescent narratives can allow for multiple end-states and branching plots. The network represents the most open and best-fit model for hypertext design due to the high level of interconnectivity.

A more complex version of multi-linear fiction is Julio Cortázar’s *Hopscotch* (static aborescent paratext transformation), which is based around the axial children’s



game with minimal deviation from its linear pathway. The text offers

two sets of reading instructions that reflect the axial nature of the text. The first pathway is a purely linear as the reader is instructed to “read in a normal fashion and [end with] Chapter 56 [...] the reader may ignore what follows with a clean conscience.”³⁵¹ The second option provides a non-linear approach, bringing in the remaining 99 chapters while remaining strictly linear in an axial sense, as the first 56 chapters are still read in a linear manner. Thus, the second option provides a fuller version of the same linear narrative with extra

³⁴⁷ Thomas Pynchon, *Gravity's Rainbow* (London: Vintage, 2000), 60–71.

³⁴⁸ Mark Liberman, “Doing the Kenosha Kind,” *Language Log*, July 30, 2004, <http://itre.cis.upenn.edu/~myl/languagelog/archives/001288.html>.

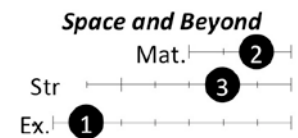
³⁴⁹ Kenosha Kid, “You—never... Did—the Kenosha, Kid.,” Twitter, @YouNeverDidThe, December 18, 2013, <https://twitter.com/YouNeverDidThe/status/413307497458704384>; Kenosha Kid, “You Never. Did! The... Kenosha Kid?,” Twitter, @YouNeverDidThe, December 17, 2013, <https://twitter.com/YouNeverDidThe/status/413149564208955392>.

³⁵⁰ David Ciccoricco, *Reading Network Fiction* (Tuscaloosa: The University of Alabama Press, 2007), 5.

³⁵¹ Julio Cortázar, *Hopscotch*, trans. Gregory Rabassa (New York: Pantheon Books, 1966), [v].

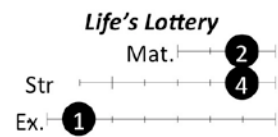
flourishes and a looping conclusion and represents one of the few print examples of Ted Nelson’s stretchtext, as the additional material enhances the reader’s understanding of the text without breaking the dominant narrative drive of the novel, as opposed to the disruptive force of the footnote. Stretchtext represents the most useful form of axial narrative with regards to digital work, although there are few stretchtext works that remain axial as the method is integrated into a larger mechanism. Charlie Hargood *et al* have developed a platform for creating fractal narratives, that is narratives that start with the beginning and end with the ability to view additional information in between two points *ad nauseam*, creating a fractal visual when mapped out.³⁵² Hargood *et al* did not publish any fractal narratives but rather used the experiments in a creative writing environment and other similar experiments such as a stretchtext version of the Sherlock Holmes story “The Speckled Band” have not been publicly shared.³⁵³ Axial narratives are largely ignored in digital fiction, as the restriction of linking back is arbitrary and difficult to regulate without more extensive forms of interconnection.

The most prominent example of arborescent fiction is the Choose Your Own Adventure (CYOA) series.³⁵⁴ In these books, and its numerous spin-offs and imitations, the reader is presented with options in the narrative with the wrong decisions leading to injury or death. One of the first CYOA books, *Space and Beyond* (static arborescent paratext transformation), features choices between “return[ing] the mother ship” or “go ahead;” choose to “attend the Space Academy;” or transparent options between death and continuation:



If you don’t join them in their fight, you are vaporized and it is...
The End
BUT
 If you join them, turn to page 77.³⁵⁵

Although the reader is presented with choices, the difference between many of these choices is between fully engaging with the fictional universe or resisting the narrative. Kim Newman’s *Life’s Lottery* (static paratext network) represents one of the more complex manifestations of a CYOA, as it satirises many of the conventions of the branching options of CYOA through choices as to whether you fail or pass the Eleven Plus, a British examination to determine which school children should go at age eleven.³⁵⁶ At the beginning the narrator addresses those readers who “[follow] the path of least resistance,” urging them to “go to 3 and 4 and 5 and all subsequent possibles [...] but



³⁵² Charlie Hargood et al., “Exploring (the Poetics Of) Strange (and Fractal) Hypertexts,” in *Proceedings of the 23rd ACM Conference on Hypertext and Social Media* (New York: ACM, 2012), 182.

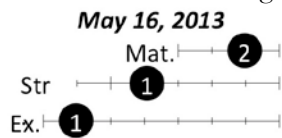
³⁵³ Tor Brekke Skjotskift, “Syntagmatic- and Paradigmatic Stretchtext,” in *Proceedings of the Sixteenth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2005), 273–275.

³⁵⁴ C.f. Robin Waterfield and Wilfred Davies, *The Money Spider* (London: Penguin, 1988).

³⁵⁵ R. A. Montgomery, *Space and Beyond* (Waitsfield: Chooseco, 2005), 3; 8; 80.

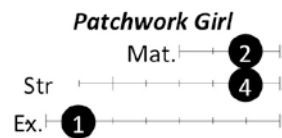
³⁵⁶ Kim Newman, *Life’s Lottery* (London: Simon & Schuster, 1999), 23.

in the end you go to 0 [the book's equivalent of death] having been at 0 all along," indicating the necessity to engage with the text rather than read it in a linear order.³⁵⁷ The branching devices that control the structure are of limited value for hypertext literature as "the best hyperfictions offer something much richer."³⁵⁸ CYOA only infrequently features loops, recursion or anything more advanced that would move the words towards networked fiction, in fact, many later CYOA branch less than earlier texts.³⁵⁹ Therefore, this is more a game of choosing the correct path than exploring the network. It is unlikely that a player who has successfully traversed the network will revisit any of the "bad" endings. The victory conditions of CYOA extend the genre more towards games with end-states than hypertext fiction, where



layers of hermeneutic investigation are more important than discovering the final positive ending. The recent rise of *Twine* as a tool for creating hypertext fiction influenced by CYOA provides a medium that is limited to branching narratives. Ilya Zaremsky's *May 16, 2013* (static linear paratext transformation), a micro-narrative about procrastinating while attempting to write an essay and enacts the boredom of the process through repetitive clicking through a single structure.³⁶⁰ Although Zaremsky restricts the user's options to just a single choice, the limitations of the platform are revealed during a section of 14 nodes in which the text remains exactly the same with the option to "stare at the screen." The URL of a *Twine* records the options taken by the user and after passing the stage of staring at the screen, the pathway reads "1i.1g.1f.2e.2f.2g.2a.2b.23.2c.1s.2d.2h.2i.13.14.11.12.z.10.x.y.v.w.27," which demonstrates that despite the "loop," the user has been seeing different nodes each time. Even if the author wishes to create a loop, the affordances of *Twine* require them to fit within the framework of a branching network, but must instead create work rounds to deal with more advanced network forms.

Since networked fiction—with loops, internally and externally expanding structures among other affordances—offer the greatest vocabulary, it is unsurprising that there is a greater pool of



examples to choose from in both digital and physical forms. Vladimir Nabokov's *Pale Fire* and Shelley Jackson's *Patchwork Girl* (static paratext network) are exemplars of the structure of network fiction as they use the form and metaphor of the network in order to shape the overall fiction. *Pale Fire*, which we will return to in greater detail in chapter four, takes the generic form of a poem and a commentary complete with a foreword and index. The network

³⁵⁷ Ibid., 7.

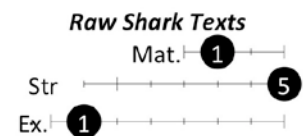
³⁵⁸ Michael Joyce and Jay David Bolter, "Ourselves Own Images: Post-Hypertextual and New Media," *Works and Days* 17/18 (1999-2000): 314.

³⁵⁹ Christian Swinehart, "CYOA," 2009, <http://samizdat.cc/cyoa/>.

³⁶⁰ Ilya Zaremsky, "May 16, 2013," 2013, <http://thewilycodger.com/May16,2013.html>.

emerges from the interrelationship between the index and cross-references in the commentary. The dense network offers the reader the chance to read the novel in several different ways without enforcing a “non-linear” narrative on the reader. The novel does not discriminate against the reader who only follows the connections that interest them. Similarly, Shelley Jackson’s *Patchwork Girl* does not force the reader to explore certain pathways but rather allows them to leisurely explore the storyworld. Unlike the earlier *Storyspace* fiction, *afternoon, Patchwork Girl* introduces the user to a global map.³⁶¹ Jackson divided her hypertext into five different sub-networks, all with a different character that reflects their nomenclature: “body of text,” “journal,” “crazy quilt,” “story” and “graveyard.” “Body of text” is a densely connected network full of loops and two-way links, often with annotated links with terms such as “skeleton” and “reading” linking back to the themes of bodies and texts. “Journal” is sparser, offering a linear pathway (other than an axial section where the reader should choose between {written} and {sewn}), two motifs central to the text). “Crazy quilt” is a colourful patchwork in strict grids and connections only to nodes adjacent to them in the network diagram. “Story” features six sub-networks that are displayed as if a descending staircase representing the stages of a narrative. “Graveyard” is a dense body of connections with a {headstone} at the top, indicating the form of a tomb. This attention to the detail of the connections and networks transforms Jackson’s work into a network with clearly defined sub-networks whose form matches their contents.

Once narratives spill beyond a single network they start to exist as distributed narratives. Jill Walker Rettberg argues distributed narratives “[open] up the formal and physical aspects of the work and [spread] themselves across time, space and the network.”³⁶² Distributed literature provides a node-dominated version of hypertext fiction, as connections must be made implicitly. A serial narrative, although often highly linear, counts as a narrative distributed over time as connections slowly appear. Walker argues that these narratives suit our reading style on the Internet.³⁶³ In this sense, *Implementation* is a classic example of a distributed narrative. Steven Hall’s *The Raw Shark Texts* (static distributed text) functions as a distributed narrative through Hall’s use of “negatives” or “un-chapters,” that is, chapters that have been released in material locations since the publication of the novel.³⁶⁴ Closure will only occur once all the “negatives” have appeared and only eight of these thirty-six “un-chapters” had surfaced by 2011.³⁶⁵ The location of the chapters is important too, since



³⁶¹ Shelley Jackson, *Patchwork Girl* (Watertown: Eastgate Systems, 2002).

³⁶² Jill Walker, “Distributed Narrative: Telling Stories Across Networks,” 2004, jilltxt.net/txt/Walker-AoIR-3500words.pdf.

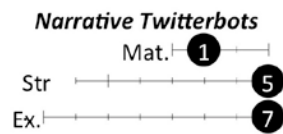
³⁶³ Ibid.

³⁶⁴ Steven Hall, *The Raw Shark Texts* (Edinburgh: Canongate, 2007); Steven Hall, “What Are *Raw Shark Texts* Negatives?,” *Crypto-Forensics*, 2007, http://forums.steven-hall.org/yaf_postst52_What-are--Raw-Shark-Texts-Negatives.aspx.

all but two were originally published as written or printed material. For example, Negative 6 (a letter from The First Eric Sanderson) was found as a loose-leaf insert for a limited U.K. edition; a similar letter was released via a Brazilian edition; and one negative was rumored to have been left as a page under a bench.³⁶⁶

The creation of a complete edition requires a lot of co-operation from people in various countries to complete the ephemeral, materially incomplete text.

There are several experiments of temporally distributed narratives on Twitter, as the 140-character limit offers the space to tweet a sentence or two. Thomas argues that this length is ideal for both experiments in microfiction that exist in a single tweet or long form projects that



expand over possibly thousands of tweets.³⁶⁷ The long-form experiments are exemplars of distributed narratives, as depending on the frequency of tweeting, either automated or manually entered, the text can fill up a user's timeline (a page containing the user's

follower's tweets) or be interspersed between tweets by other users. Many of these projects remediate pre-existing narratives (textual distributed remix), such as the work of Edgar Allen Poe (@MechanicalPoe) and Thomas Pynchon's *Gravity's Rainbow* (@Total_Pynchon).³⁶⁸ Both take different approaches, as @MechanicalPoe automatically posts one line per hour while @Total_Pynchon is manually posted pages at a time in greater spurts. It is possible to read @Total_Pynchon in real-time but @MechanicalPoe is interspersed among other users' tweets. The resulting archive of tweets distributes the narratives backwards, so the reader finds it difficult to reconstruct the original narrative. A more complex example of this is Ian Bogost and Ian McCarthy's "Twittering Rocks" project, which sends automated tweets from multiple accounts to replicate the narrative of the "Wandering Rocks" chapter of *Ulysses*.³⁶⁹ Jessica Pressman argues that such a project is "an interesting conceptual experiment in employing a database to produce stream of consciousness narrative."³⁷⁰ The affordance of the Twitter platform is its ability to be reconfigured and the database of individual tweets compared to the curated narrative of the timeline. Shelley Jackson's *Skin* offers a distributed narrative *in extremis*, as the text is distributed at the level of the word. These single words are tattooed on separate volunteers, thus these scattered texts are unlikely to ever be reconstituted.

³⁶⁵ Julia Panko, "Memory Pressed Flat into Text: The Importance of Print in Steven Hall's *The Raw Shark Texts*," *Contemporary Literature* 52, no. 2 (2011): 283.

³⁶⁶ Ibid.

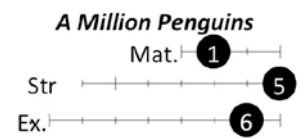
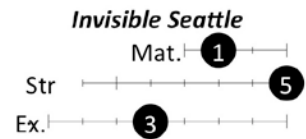
³⁶⁷ Bronwen Thomas, "140 Characters in Search of a Story: Twitterfiction as an Emerging Narrative Form," in *Analysing Digital Fiction*, ed. Alice Bell, Astrid Ensslin, and Hans Rustad (London: Routledge, 2014), 94–108.

³⁶⁸ @MechanicalPoe, "Edgar Allen Poe Bot," *Twitter*, 2013, <https://twitter.com/MechanicalPoe>; @Total_Pynchon, "Gravity's Rainbow," 2013, https://twitter.com/Total_Pynchon.

³⁶⁹ Ian Bogost, "Twittering Rocks," June 5, 2008, www.bogost.com/blog/twittering_rocks.shtml.

³⁷⁰ Jessica Pressman, *Digital Modernism: Making It New in New Media* (New York: Oxford University Press, 2014), 105.

The distributed literature discussed so far has featured a single author, but a further category of distributed narrative is collaborative narrative. An early form of electronic literature exemplifies this form, *Invisible Seattle* (distributed procedural text), a novel collaboratively authored by the citizens of Seattle, both through canvassing on the streets and use of online bulletin boards.³⁷¹ *Invisible Seattle* distributes authorship in a larger but similar scale to “when Alexander Pope, John Gay, Jonathan Swift and others decided to publish under the name of ‘Martinus Scriblerus.’”³⁷² Martinus Scriblerus was used as a satirical but anonymous front to attack a plethora of targets. Distributed authorship may not cause the reader to explore for further fragments but rather worry about the internal consistency of the piece and where the fragments may have emerged. *A Million Penguins* (textual distributed performance), a collaborative creative project by Penguin Press, De Montfort University and a plethora of volunteers offers a model for social distributed authorship in a digital environment. The project is defunct and the website has since been purchased for commercial purposes, so an archived version of the website from 2007 will be discussed.³⁷³ A technical report published a year after the experiment concluded explains that “seeded with a first line taken from a volume in the Penguin Classics series, the wiki invited contributions over a five week period.”³⁷⁴ In the results of what was described as “the most written novel of all time,” “1,476 people had registered as user [including a plethora of spammers] and had between them made over 11,000 edits to its 1,000 plus pages.”³⁷⁵ The final output may not be literary in the traditional sense, but has a sense of coherence that is unexpected from such a cacophony of voices:



With a word it begins [...] the sound of clicking keys and the smell of wet fur fill the room. Möbius strips made of banana yellow construction paper and Scotch tape are scattered haphazardly across the floor. The chief monkey, careful not to slip and fall, ambles from desk to desk collecting papers before pasting them slowly and deliberately into a gigantic scrapbook. He scratches himself, enjoying the sensation. If he had been able to read, as he once had been, he would have read something similar, or perhaps completely different, to the following.....³⁷⁶

The preamble literalises a common concern of such a collaborative undertaking—that of the infinite number of monkeys writing on an infinite number of typewriters—although the

³⁷¹ Seattle, *Invisible Seattle: The Novel of Seattle* (Seattle: Function Industries Press, 1987); Rob Wittig, *Invisible Rendezvous: Connection and Collaboration in the New Landscape of Electronic Writing* (Hanover and London: Wesleyan University Press, 1994).

³⁷² K. K. Ruthven, *Faking Literature* (Cambridge: Cambridge University Press, 2001), 103.

³⁷³ A Million Penguins, “Welcome - PenguinWiki,” *A Million Penguins*, August 29, 2007, http://web.archive.org/web/20070829221645/http://www.amillionpenguins.com/wiki/index.php/Main_Page.

³⁷⁴ Bruce Mason and Sue Thomas, *A Million Penguins Research Report* (Leicester: Institute of Creative Technologies, De Montfort University, April 24, 2008).

³⁷⁵ Ibid.

³⁷⁶ A Million Penguins, “Welcome - PenguinWiki.”

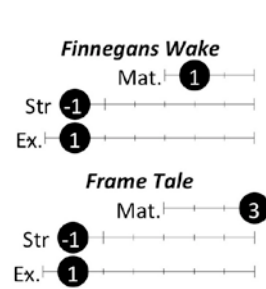
experiment was just that and not a more serious artefact, it proved that creative writing can be distributed in a similar manner to Wikipedia, although the skills of creating a coherent voice in fiction were not mastered through the project.

While distributed narratives may give the appearance of being endless, early hypertext theory discussed the possibility of an endless narrative. The trope of endlessness was one of the big promises of digital literature:

Going beyond the closed world of the CD or other self-delimited storage mode (a move not universally foreseen in the early 1990s), the production of a discourse field always premised on its connections to a realm of unlimited, interlocking networks was crucial to the way the Rossetti Archives was conceived. McGann is quick to point out that books have this capacity as well.³⁷⁷

The interpretive discourse field discussed in this quote will be explored in the latter half of this thesis, but these claims have been applied to narrative. Jane Douglas shockingly claimed that closure is challenged in hypertext fiction and that hypertext does not have a material end, the reader must interrupt their session to finish reading rather than meet a physical end.³⁷⁸ This claim fits into the hype of the second-wave hypertext ideology. The textual generativity that endows hypertext with this inconclusive *dénouement* is also a trait of print. Thomas Pynchon’s *The Crying of Lot 49* and *Gravity’s Rainbow* both finish with major narrative questions unanswered.³⁷⁹ The narrative extends beyond the limits of the page, but this indeterminacy does not indicate that these works are endless.

Douglas’s argument is further problematised through closer assessment of the word “physical.”



This is, in Kirschenbaum terms, a *medial ideology*, “uncritical absorptions of the medium’s self- or seemingly self-evident representations.”³⁸⁰ On a textual level, *afternoon*, one of Douglas’s primary examples for the end of closure in hypertext narratives, is highly cyclic. The subservient reader, who simply presses the “yes” option to progress through the nodes, will notice a loop after thirty nodes when sticking to pressing “yes” will loop between {relic}, {can I help you?}, {no, I say}, {transcript}, {I call} and {fenceline}. Rereading the same nodes having finished the cycle offers a different experience, but this is the experience rereading would offer; this does not actually remove closure from the text, as on a material level, the code and file in which *afternoon* is constructed and processed have an end. Recursion and looping are two tricks in which to extend the length of the fiction to an

³⁷⁷ Johanna Drucker, “Theory as Praxis: The Poetics of Electronic Textuality,” *Modernism/modernity* 9, no. 4 (2002): 687.

³⁷⁸ Terence Harpold, “Conclusions” in George Landow, ed., *Hyper/text/theory* (Baltimore: The Johns Hopkins University Press, 1994), 192–3.

³⁷⁹ Thomas Pynchon, *The Crying of Lot 49* (HarperCollins, 2009); Pynchon, *Gravity’s Rainbow*.

³⁸⁰ Kirschenbaum, *Mechanisms*, 36.

apparently endless form. This is no different from the tactics of the print works James Joyce's *Finnegans Wake* (static looping text) and John Barth's "Frame-Tale" (static systematic loop). Barth's short story has the instructions:

Cut on dotted line.
Twist end once and fasten
AB to *ab*, *CD* to *cd*.³⁸¹

If the reader follows Barth's extratextual instructions, they are left with an endless loop of "Once upon a time there was a story that began."³⁸² By following the instructions, the remaining text forms a Möbius strip that loops the text into a continuous, "never-ending" short story. An example of looping beyond a single sentence is James Joyce's *Finnegans Wake*, which famously starts *in medias res* with "riverrun, past Eve and Adam's" and ends "A way a lone a last a loved a long the."³⁸³ It is implied that these two sentences link up similarly to a Möbius strip to "Frame-tale" and indicates the cyclical nature of Joyce's infamous text. A further interesting development in non-digital media that can be seen as endless fiction is long form serialised television. Modern serial narratives with a defined beginning, middle and end on television can stretch for hundreds of hours—c.f. *Buffy*, *The Wire* and the multiple *Star Trek* series, which accumulate to approximately 500 hours, and soap operas often stretch too even greater lengths—and serialised graphic novels such as the *Walking Dead* follow a single continuity for thousands of pages developing characters intricately and it is unlikely that the series is heading towards a definitive conclusion.³⁸⁴ These works stretch their second acts perpetually in order to develop characters without reaching a traditional conclusion. Furthermore, many will only conclude when the network cancels the series, thus the season is unfinished, at least until the inevitable feature film or Netflix renewal.

Executable

As mentioned in the introduction, one of the core themes of this thesis is the distinction between forms of compositional and receptional hypertext, which will be discussed further in chapters four and six. For the moment, however, it will suffice to look at composition and reception more broadly. In terms of the taxonomy, the preceding two categories many offer some affordances to the audience, but essentially they are tools of the composers. The axis of *executability* offers a framework from which to assess the degree to which the user can transform a work. The broad category starts with forms that do not increase the reader's agency but moves towards becoming receptionally oriented.³⁸⁵ The scale begins with the potential for

³⁸¹ Barth, "Frame-Tale," 2.

³⁸² *Ibid.*, 2–3.

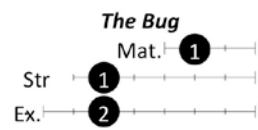
³⁸³ James Joyce, *Finnegans Wake* (London: Penguin, 2000), 3; 645.

³⁸⁴ "Buffy (TV series)," 1997-2003; "The Wire (TV series)" (HBO, 2002-2008); "Star Trek (TV series)," 1996-2005; Robert Kirkman and Tony Moore, *The Walking Dead*, vol. 1 (Berkeley: Image Comics, 2003).

³⁸⁵ It should be noted that there is nothing to stop users from brute-force transforming these works nonetheless.

transformation, such as print code that is executable but not directly transformational to the internal world of the literary artefact. There is a potential for receptional transformation, but only executing the code externally to the artefact. A second, related, form of code in fiction is that which is pseudo-code rather than actual code, that again hints towards executable elements, although this promise often does not come to fruition. Works with procedural elements—that is, texts that are generated through following processes and routines that govern the behaviour of the output—offer the author the potential of executable works without the ability for the audience to join in. It is only with combinatory literature, or works that allow the reader to actively recombine and manipulate the text, that the executable actions move towards receptional elements. The text becomes further executable as the audience becomes more involved through the use of ludic or performative elements and the final receptional transformation is facilitated through the remix or the transformation of one or more work into a new artefact.

Writing on the computer bifurcates between an audience of humans and machines. Code represents a case where the author is writing for both audiences.³⁸⁶ The feedback loop of the physical-digital continuum has led to excerpts of code in print texts such as Ellen Ullman’s *The Bug* (linear code text), which includes excerpts such as:



```
hubris: ~/src/temp> vi GetInp.c
hubris: ~/src/temp> rm *387
```

As the code is not immediately clear in English, this excerpt causes the reader to focus on the material elements of the page. This is compounded by the fact that the command “rm*” requests an indiscriminate deletion of all content in the current location, in this case “~/src/temp.” In print, this code cannot be executed but is transformed to have aesthetic value and demonstrates the anxiety of the “late age of print.” A computer programming language is constructed by speech acts, or statements that do not describe the world but change its state of being, such as saying “I now pronounce you husband and wife,” which forms a contract between a bride and groom.³⁸⁸ Programming languages enact the same processes once the user has run them.³⁸⁹ The programs do not necessarily have to be executable, but they can just be translated into the programming language. Perl represents one of the most popular programming languages for code, as poets have constructed poems into the syntax and functions of Perl. “andreychek”’s Perl port of Lewis Carroll’s “Jaberwocky” (linear code text) is

³⁸⁶ Close reading of the code behind many works of digital literature has not adequately been explored in many cases, as the underlying source code is proprietary and strictly unavailable for examination.

³⁸⁷ Ellen Ullman, *The Bug* (New York: Anchor Books, 2003), 107.

³⁸⁸ Austin, *How To Do Things With Words*.

³⁸⁹ Geoff Cox, *Speaking Code: Coding as Aesthetic and Political Expression* (Cambridge: MIT Press, 2012).

one of the more sophisticated examples of remediation of a poem into code. The transformation uses the syntax and functions of Perl to facilitate the following transformation:

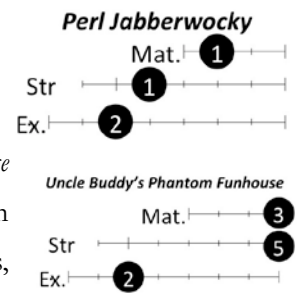
```
$brillig and $stoves {slithy};
for $gyre ( @wabe ) {} for $gimble ( @wabe ) {}
map { s/^.*/mimsy/g } @borogoves
and $mome {raths} = outgrabe;
```

‘Twas brillig, and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.³⁹⁰

The syntax of the original is twisted through translation into the syntax of Perl. As the programming language does not have adjectives and nouns, these units have to be translated into functions: “\$stoves,” and attributes, “{slithy}.” This interpretation of the poem naturally reworks elements of the poem as the features of natural language cannot be directly translated into Perl, but the artistry is in manipulating the features of natural language into equivalent functions in machine-readable language. John McDauid composed *Uncle Buddy’s Phantom Funhouse* (systematic distributed code) in *HyperCard* in a conscious homage to John Barth’s *Lost in the Funhouse* in both its title and use of music tapes, ephemera and other media, mimicking Barth’s subtitle *Fiction for print, tape, live voice*.³⁹¹ McDauid included snippets of HyperTalk, the *HyperCard* programming language, into the human readable part of the fiction. The node {porno recursion} features the following code poem:

```
on mouseUp
  Global thermoNuclearWar
  put the script of me into tightOrbit
  put tightOrbit into eventHorizon
  put empty into first line of eventHorizon
  put empty into last line of eventHorizon
  put empty into last line of eventHorizon
  put eventHorizon after line thermoNuclearWar of tightOrbit
  set the script of me to tightOrbit
  put thermoNuclearWar + 10 into thermoNuclearWar
  click at the clickLoc
end mouseUp392
```

The variables in HyperTalk, “thermoNuclearWar,” “eventHorizon,” and “tightOrbit” have been created as aesthetic terms rather than functional attributes of the programming language. The poem is executable, but this process will lead to what is called a “forkbomb,” or a routine that will continually loop until it consumes all of the computer’s available memory.³⁹³ McDauid’s code poem reveals the tensions between aestheticising code and the dangers of executing processes that are unfamiliar to the user.



³⁹⁰ andreychek, “Jabberwocky -- Explained,” *PerlMonks*, September 8, 2001, http://www.perlmonks.org/?node_id=111157.

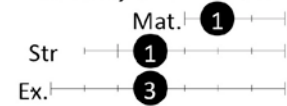
³⁹¹ Astrid Ensslin, *Canonizing Hypertext: Explorations and Constructions* (London: Continuum, 2007), 90.

³⁹² John McDauid, *Uncle Buddy’s Phantom Funhouse* (Watertown: Eastgate Systems, 1992), {porno recursion}.

³⁹³ Stuart Moulthrop, “Toward a Paradigm for Reading Hypertext,” in *Hypertext/hypermedia Handbook*, ed. Emily Berk and Joseph Devlin (Hightstown, NJ: McGraw-Hill, Inc., 1991), 65–78.

When the code's execution is primarily for the composer rather than potential readings, it is used in a procedural manner. Janet Murray argues the "newness" of digital literature resides in procedurality, in so far as generative algorithms that create dynamic content underpin many digital works.³⁹⁴ Wardrip-Fruin notes that when Christopher Strachey constructed his love letter

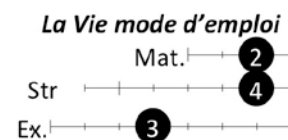
Strachey's Love letters generator (procedural linear text), one of the foundational movements of electronic literature, he "had discovered, and created an example of, the basic principles of combinatory literature - which still lie at the heart of much digital literature today."³⁹⁵ An emulator of Strachey's love letter generator reveals the content is generated through choice of salutations, adjectives, nouns, adverbs and verbs to create an output such as



Honey Duck,
 My passionate craving woos your wistful wish. My beautiful
 enchantment affectionately hungers for your sweet being. You are my
 avid being. My yearning wistfully thirsts for your desire. My craving
 curiously pants for your avid thirst.
 Yours wistfully,
 M.U.C.³⁹⁶

This appears impressive but if the user repeats the generation process, they will see the template behind the generation of the love letters and it is an algorithm that could be easily replicated by a human. These compositional procedures are older than writing, as the stock choice of words in oral literature is procedural. Oral poetry required the ability to choose between various minimal units of speech in order to keep the meter of the poem.³⁹⁷ The orator can vary the text every time it is performed, but the audience cannot alter the inevitable flow of the work. Moreover, Lanham posits "the genuine ghost in this machine is the spirit not of Alan Turing but of John Cage."³⁹⁸ Cage's philosophical adherence to both the procedural and randomness, two of the core tenets of early computing and still very much a part of the digital paradigm today although once more, the author benefits from these tenets more than creating a dynamic text for the reader.

The Oulipo have explored the benefits of procedural literature deeper than any other group, digital or physical. Their procedural work stretches to all corners of potential literature, encompassing historical forms and creating new forms for others to build on. Georges Perec's *La Vie mode d'emploi* (*Life A User's Manual*,



³⁹⁴ Murray, *Hamlet on the Holodeck*, 71.

³⁹⁵ Wardrip-Fruin, "Five Elements of Digital Literature," 33.

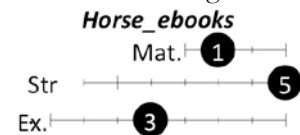
³⁹⁶ Christopher Strachey, "Loveletters," 2010 [1952], <http://www.gingerbeardman.com/loveletter/>.

³⁹⁷ See Milman Parry, "Studies in the Epic Technique of Oral Verse-Making. I. Homer and Homeric Style," *Harvard Studies in Classical Philology* 41 (1930): 73 for a summary of this argument.

³⁹⁸ Richard A. Lanham, *Electronic Word: Democracy, Technology and the Arts* (Chicago: University of Chicago Press, 1995), 46.

procedural paratext network)³⁹⁹ is one of the more ambitious oulipian texts, based on a tripartite structure: “The Graeco-Latin bi-square, the Knight’s Tour, and a permutating “schedule of obligations,” a list of conditions that must be met by each of the novel’s chapters.⁴⁰⁰ “A Graeco-Latin bi-square of order n is a figure with $n \times n$ squares filled with n different letters and n different numbers; each square contains one letter and one number; each letter appears only once in each line and each column, each number appears only once in each line and each column”⁴⁰¹ and the Knight’s Tour is a classic chess puzzle where the knight must hit every square on the board without repetition. Such a structure will only be discovered by those who look for it, as the work can be read on the level of a straightforward narrative. Procedural works do not have to emphasise the mechanical devices behind their construction. The complexity of *La Vie mode d’emploi* reveals a tension between hidden structures, such as Italo Calvino’s *If On a Winter’s Night a Traveller*, or those that explicitly reveal their intentions, such as Georges Perec’s *La Disparition* (translated in English as *A Void*), Perec’s lipogrammic novel about the disappearance of the letter “e.”⁴⁰² As with digital media, the author makes a decision to reveal the underlying mechanisms or just leave readers guessing. This can become problematic for Oulipians writing outside of their default mode, as avid readers will read too much into the text in order to discover the underlying mechanism.⁴⁰³ Thus, we can see that procedural elements exist primarily at the level of authorial intention and the reader’s agency discovers the hidden mechanism, even if it was never there.

This tension has recently been played out over digital media with the popularity of the performance piece @horse_ebooks (procedural distributed text).⁴⁰⁴ “_ebook”s are a genre of Twitterbots that scrape text from a source (usually eBooks) and remixes them through Markov chains to be posted in tweetable chunks of under 140 characters. Markov chains, also known as *n-grams*, “[are] built by looking at a body of linguistic data and seeing what elements follow other elements. If looking at the letters in a body of English, *q* would quite often be followed by *u*,”⁴⁰⁵ these can be termed *bigrams* if looking at two elements, *trigrams* for three elements, and so forth. Although there is not a single algorithm for processing these chains, Markov generators often are used to link statistically similar phrases to generate sentences that may appear to be natural



³⁹⁹ Georges Perec, *Life: A User’s Manual* (London: Vintage, 2008).

⁴⁰⁰ Harry Matthews and Alastair Brotchie, eds., *Oulipo Compendium* (London: Atlas, 2011), 174.

⁴⁰¹ Claude Berge quoted in *ibid.*, 154.

⁴⁰² Italo Calvino, *If On A Winter’s Night A Traveller* (London: Vintage Classics, 2007); Calvino eventually revealed the structure in “Comment j’ai écrit un de mes livres (How I Wrote One of My Books)”, BO20. See Matthews and Brotchie, *Oulipo Compendium*, 73; Daniel Levin Becker, *Many Subtle Channels: In Praise of Potential Literature* (Cambridge, MA: Harvard University Press, 2012), 79; Georges Perec, *A Void*, trans. Gilbert Adair (London: The Harvill Press, 1994).

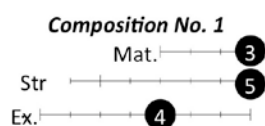
⁴⁰³ Becker, *Many Subtle Channels*, 84.

⁴⁰⁴ @Horse_ebooks, “Horse Ebooks,” *Twitter*, 2013, https://twitter.com/horse_ebooks.

⁴⁰⁵ Wardrip-Fruin, *Expressive Processing*, 204.

language. For example, in a source text that features the phrases “he argued **that he** was ready” and “the banana **that he** ate,” the algorithm would pick up the repetition of “that he” and assume that this could be used to generate new sentences linking the clauses using the repetition. Hence, the algorithm would generate the output “the banana that he was ready” as statistically likely English. @horse_ebooks could produce results such as “process from preparation, through to delivery” and “principle to work to make more money while having more fun. Unlucky people.” Although ultimately @horse_ebooks turned out to be a hoax, the dream of @horse_ebooks as a procedurally generated twitterbot was pervasive.⁴⁰⁶ Spectators wanted to believe that such an algorithm would produce output that reflected the commercial impulses underpinning the project. Despite this scepticism, the human performance behind @horse_ebooks was likely to have replicated the same procedures a digital algorithm would have undertaken. The project thus reveals a further convergence between the performance of machine and human.

Combinatory literature was one of the earliest forms of digital literature and transitions from compositional forms of executability to those that offer the reader more control over the structure of the text. As Funkhouser demonstrates, early digital literature maximised its potential by focusing on combinatorial textual generators. Like procedural patterns, such texts did not require the use of a screen or vast processing power, so were ideal for the early years of computing. Although the reader cannot alter the texts in a permanent manner, the structures imposed of them are minimal and they are often required to create a new text out of the presented elements. Zuzana Husárová and Nick Montfort term this “shuffle literature,” noting



the card-like quality of these fictions.⁴⁰⁷ Shuffle literature has been utilised several times in print, as it is easy to produce in the form of loose-leaf works. Marc Saporta’s *Composition No. 1* (combinatory distributed systematic transformation) is an exemplar of print

combinatory literature, as there is practically no structure to the text.⁴⁰⁸ The preface compares the shuffling of the pages to a fortune-teller, as the reader changes the order of the protagonist’s life and emphasises the possible combinations as infinite, although this is hyperbolic.⁴⁰⁹ Shuffle literature in print offers a freedom difficult to replicate in digital media as the reader often has a greater degree of random access than the affordances of digital media. The iPad app for *Composition No. 1* corrects this by constantly shuffling through random pages in the text until the reader presses on the screen 150 times to create a unique narrative.

⁴⁰⁶ Susan Orlean, “Horse_ebooks Is Human After All,” *The New Yorker: Elements*, September 24, 2013, <http://www.newyorker.com/online/blogs/elements/2013/09/horse-ebooks-and-pronunciation-book-revealed.html>.

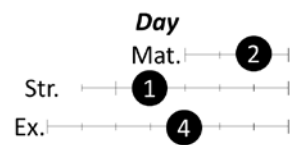
⁴⁰⁷ Chris Funkhouser, *Prehistoric Digital Poetry: An Archaeology of Forms, 1959-1995* (Tuscaloosa: The University of Alabama Press, 2007), passim.

⁴⁰⁸ Marc Saporta, *Composition No. 1* (Paris: Editions du Seuil, 1962).

⁴⁰⁹ Ibid.

Unfortunately, such a solution results in pseudo-randomness, as the order in which the separate sections appear must be controlled by some underlying routine generated from an initial seed number rather than a completely arbitrary choice.⁴¹⁰

Combinatorial reading can be conceptualised in more general terms by Lev Manovich’s distinction between narrative and database. The book can function as both a database (with no coherent overriding structure) in a photo album or a narrative device throughout many genres including both fiction and non-fiction.⁴¹¹ Manovich’s statements led to a great controversy discussing whether the binary was false.⁴¹² It is much more useful to think about the narrative-database distinction as separate methods of reading. The reader can manipulate a text in anyway the further they view the current text a database rather than a narrative. It is the reader’s choice to follow the text in a traditional manner. Kenneth Goldsmith has problematised the distinction between these two reading methods in much of his “uncreative writing.”⁴¹³ In *Day* (combinatory linear paratext transformation), Goldsmith reconceives the database tropes of the *New York Times* into a narrative by transcribing every word on the page from top left to bottom right.⁴¹⁴ The reader must now engage with the text as a narrative to the effect that every element of the page has been transcribed in a linear order, regardless of distinction between articles and advertisements. Goldsmith thus creates a new narrative through linking the database elements of the newspaper page.



Once the reader envisions text as information, linear texts can be reconfigured as combinatorial literature. The database aesthetic enables the reader to choose the way in which they engage with the text structurally. Tully Hansen’s *Markovy*, a Markov-chain generated trawl of a section of Ian Bogost’s *Alien Phenomenology*, enacts the principles of turning a text into a database and a creative work for the author to manipulate.⁴¹⁵ Hansen takes the section of *Alien Phenomenology* which introduces what Bogost calls *carpentry*, or the practice of making as philosophical argument, to create a combinatorial work that allows the reader to create their own pathway through the Markov-chain generation process. In sum, Hansen offers the user a chance to enact the procedural processes underpinning a computation process, forming a text unique to their own



⁴¹⁰ Nick Montfort et al., *10 PRINT CHR\$(205.5+RND(1));:GOTO 10* (Cambridge: MIT Press, 2012), 119–146.

⁴¹¹ Although this is to deny the narrative of a photo album or the interesting connections that can be formed through such an artifact.

⁴¹² See Ed Folsom, “Database as Genre: The Epic Transformation of Archives,” *PMLA* 122, no. 5 (October 2007): 1571–1579; Jonathan Freedman et al., “Responses to Ed Folsom’s Database as Genre: The Epic Transformation of Archives?,” *PMLA* 122, no. 5 (October 2007): 1580–1612.

⁴¹³ Kenneth Goldsmith, *Uncreative Writing* (New York: Columbia University Press, 2011).

⁴¹⁴ Kenneth Goldsmith, *Day* (Great Barrington: The Figures, 2003).

⁴¹⁵ Tully Hansen, “Markovy,” 2012, <http://whistlingfish.org/markovy.html#4i>.

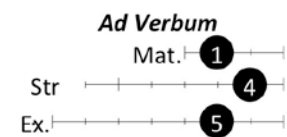
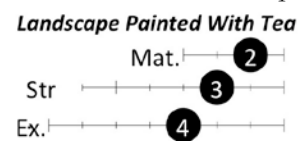
decisions.⁴¹⁶ The initial seed word, “like,” once clicked, offers two options for words to follow it based upon the source text, “mechanics” or “scientific,” from there the options further bifurcate and repeat as the reader wishes. The reader can repeat the process indefinitely in order to generate their own version of Bogost’s original passage.

Ludic, or playful, texts allow the reader to take a more prominent role in the representation of the text. The role of game mechanisms is to enable active participation, but at same time ensure that the reader follow certain rules. Astrid Ensslin has approached the convergence of the literary and ludic in terms of texts that have significant elements of linguistic signification as a feature, which allows for a wide range of forms from ludic digital fiction to art games that contain readerly elements, in what she calls the literary-ludic continuum.⁴¹⁷ Ensslin delineates between three main strategies of combining literature and ludicity: (1) *cognitive ludicity*, or word games, intertextuality and other literary tropes that are evocative of playing a game with words; (2) *ergodic ludicity*, forms of playful interaction that require an active engagement with computational systems; and (3) *ludic mechanics*, “which occurs in ludic-literary works that borrow from computer game technologies and structures, such as rule-driven action, performance measurement, credit counts, winning and losing mechanisms, rewards, tasks and challenges.”⁴¹⁸

Milorad Pavić’s *Landscape Painted With Tea* (arborescent combinatorial paratext transformation) functions as an example of cognitive ludicity in print, as Pavić structures his novel around clues to a central crossword puzzle although this interface is unfortunately peripheral to the reader’s engagement with the text and may be ignored.⁴¹⁹ The association with word games such as the crossword enables the ludicity of Pavić’s text. Similarly, the literariness of the *Myst* and *Elder Scrolls* series, which fetishizes print and manuscript culture respectively, is of the intertextual variety, and thus also function as cognitive ludicity.⁴²⁰

Ensslin suggests Interactive Fiction is “perhaps the most hybrid of literary-ludic genres in the digital sphere” due to its reliance on typing, while simultaneously being steeped in the culture of ludicity.⁴²¹ Interactive Fiction works through a dialogue between a narrator and a player. The

user is prompted to respond to chunks of narrative in the syntax of the gameworld. Nick Montfort’s *Ad Verbum* (ludic network text) provides a useful example of the ways in which IF straddles the line



⁴¹⁶ Ibid.

⁴¹⁷ Ensslin, *Literary Gaming*.

⁴¹⁸ Ibid., 18–19.

⁴¹⁹ Milorad Pavić, *Landscape Painted With Tea*, trans. Christina Pribicevic-Zoric (New York: Alfred A. Knopf, 1990), 100–101.

⁴²⁰ Robyn Miller and Rand Miller, *Myst*, Mac OS X, 1993; Arguably the greater problem is whether *Myst* can be described as a game! See Steven Poole, *Trigger Happy: The Inner Life of Videogames* (London: Fourth Estate, 2000), 99.

⁴²¹ Ensslin, *Literary Gaming*, 12.

between ludicity and literariness. *Ad Verbum* opens with a prologue highlighting the importance of cognitive ludicity in the IF: “With the cantankerous Wizard of Wordplay evicted from his mansion, the worthless plot can now be redeveloped. The city regulations declare, however, that the rip-down job can’t proceed until all the time have been removed.”⁴²² This establishes *Ad Verbum* as a game as the user is asked to undertake a task (clearing all the items in a mansion) and a narrative (the eviction of the Wizard of Wordplay). Interactive Fiction intersperse the ability to interact with the same world with the narrative and description of the environment and progression in the story. A delicate balance between these two forms allows the user to experience the IF as both a game and a story. In the case of *Ad Verbum*, however, the elements are mostly game-based since the game progresses through clearing up the mansion, but the literary ambitions come from the oulipian word play and verbosity of the work, typified by the “verbosifier,” an in-game item that is described as “about the size of a Walkman, with a long antenna extending from it and a rectangular button labelled ‘VERBOSIFY.’” This object reveals the literary puzzles the user will have to encounter including rooms that require them to utter alliterative statements and the requirement to utter specific language to refer to objects such as “the difficult difficult difficult door.” Despite the lack of traditional narrative, *Ad Verbum* instead allows the user to explore the linguistic texture of the word in a similar way to a form of poetry. The verbal textures of the text operate as both literary and ludic depending on whether the user wants to engage with the IF in a playerly or readerly manner.⁴²³

Gary Gygax and Dave Arneson’s *Dungeons & Dragons* presents a dynamic playful text in print.⁴²⁴ From this single rulebook and book-based games, there have been many digital adaptations, ranging from Multi-User Dungeons (MUDs), many early adventure games and the multitude of Role-Play Games (RPGs) available.⁴²⁵ *Dungeons & Dragons* (systematic distributed ludic-performance hybrid) is a particularly useful example of the ludic genre in print, since it requires no more than the book itself, some dice, a willing Dungeon Master and players. The dice can be as important as the raw textual material because they generate the indeterminacy of the players’ environment and non-player characters (NPCs). *Dungeons & Dragons* transcends the typical static literary world and enables the Dungeon Master to randomise select elements of the game. The Dungeon Master has access to a large number of chance tables to create the indeterminacy that also harbours many videogames. Furthermore, advanced gamers can plan situations so well that the game revolves around improvisation rather than rule-based play. It is telling that “Gygax



⁴²² Montfort, “Ad Verbum.”

⁴²³ Ensslin, *Literary Gaming*.

⁴²⁴ Gary Gygax and Dave Arneson, *Dungeons & Dragons* (Lake Geneva, Wisconsin: TSR, 1974).

⁴²⁵ If not Will Crowther and Don Wood’s ADVENTURE, as is commonly claimed Montfort, *Twisty Little Passages*, 83.

harboured thwarted ambitions to write fantasy fiction before *Dungeons & Dragons*, nor that he turned some of his earliest game sessions into short stories as a way of illustrating play.”⁴²⁶ There are literary tropes throughout the rulebook, such as the focus on verbal rather than visual representations of the world.⁴²⁷ *(A)D&D* shares these elements of simulation with videogames. Much of this simulation is visible as the reader rolls the dice for decisions, but there are frequent hidden mechanisms which guide the players’ progress and evoke Wardrip-Fruin’s Tale Spin effect by hiding the complexity of several underlying mechanism: “listening, hiding in shadows, detecting traps, moving silently, finding secret doors, monsters saving throws, and attacks made upon the party without their possible knowledge.”⁴²⁹ These rules have to be kept separate, since if the Dungeon Master/player roles collapse, a similar consequent to cheating in videogames. The player who reads through the text in a traditional way is blessed with greater knowledge of the underlying algorithms. The “Advanced Dungeons and Dragons” episode of *Community* exemplifies this conflict, where the antagonist, Pierce Hawthorne, reads the entire quest book and finds an all-powerful game-breaking amulet, allowing him to slay all the other characters and ruin the others’ enjoyment of the game.⁴³⁰

The ludic branches into performance when the user is free to explore the environment rather than confined by the rules of the game or work of art. *Dungeons & Dragons* can bifurcate between those who role-*play* and others who *role-play*. The inherent flexibility of the genre allows users to either strictly follow the rules in an environment where every action is carefully regulated and mapped out on a board, or players can ignore the constraints and play purely with words. These role-players use the tropes of the *Dungeons & Dragons* fictional universe in order to conduct their performances rather than using the ready-made structures for combat. Since they are no longer following the formal mechanics of the game, these players have a greater amount of freedom to explore the world and their roles in it. Naturally, most sessions will fit somewhere between these two opposites and the Dungeon Master can dictate the degree to which this occurs as their guide’s “conducting the game” section states that one can use the occasional interventions by deities, that is, the Dungeon Master is authorised to break the rules for the benefit of the quest occasionally.⁴³¹ Performance exists frequently outside of RPGs too in more canonical form such as drama and improvisation. Locative narratives, such as Toso Fei’s *Venice The Ruyi*, require a physical performance in traversing geographical locations. Jeremy Hight

⁴²⁶ Jon Peterson, *Playing at the World: A History of Simulating Wars, People and Fantastic Adventures From Chess to Role-Playing Games* (San Diego: Unreason Press, 2012), 201.

⁴²⁷ *Ibid.*, 306.

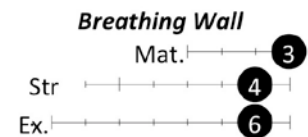
⁴²⁸ Wardrip-Fruin, *Expressive Processing*, 16.

⁴²⁹ Gygax, *AD&D DM Guide*, 110.

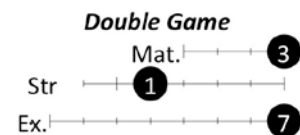
⁴³⁰ Joe Russo, “Advanced Dungeons & Dragons,” *Community* (NBC, February 3, 2011).

⁴³¹ Gygax, *AD&D DM Guide*, 111.

posits “GPS could allow a writer to write with place, object and absence as well as textuality.”⁴³² The reader physically performs in all three. Acts of reading in general can become performative depending on how active the reader gets involved in the act. Oral recitations can radically transform the meaning of the text through the emphasis the reader places on the text. Furthermore, there are transformative performances as indicated by Eskelinen’s earlier example of a version of *Cent Mille Milliard des poemes*. The reader can transform the text by actively altering their own individual copy. This manipulation is permanent although it only affects a single copy of the work. These performances are not necessarily verbal but can rely on physiological engagement. Kate Pullinger’s *Breathing Wall* (systematic network performance) draws the process of breathing into a performative element of experiencing the work, as transitions are triggered through monitoring the reader’s breathing patterns through a special headset.⁴³³ Astrid Ensslin has called this form of digital literature “physio-cybertext” as the work necessitates a cybernetic feedback loop between the reader’s breathing and the text.⁴³⁴ Within the framework of executability, *Breathing Wall* makes the reader complicit in the mechanisms of the text without explicitly requesting the reader to make a choice.



The final step of manipulation is the creation of a new work from the old. Although many of the previous examples allow the reader to change the work temporarily, the remix presents a permanent transformation. This is a permanent manipulation of the previous text. Although remix might be seen as a twentieth-century phenomenon, but “the use of scissors and paste was by no means inherently sacrilegious in the sixteenth century,” as readers remixed their books into new objects.⁴³⁵ Sophie Calle’s *Double Game* (systematic linear remix), which remixes Paul Auster’s *Leviathan* and includes the original text, marked up in its original form indicating the transformation the text has undergone, presents an interesting example.⁴³⁶ Recast in this way, intertextuality delineates the differences between the original and the new version, even if it is just a direct quotation in a new context. More explicit manipulations occur in the Oulipian movement along the procedural axis such as the N+7 technique and Queneau’s *Exercice in Style* is a remix of a single passage in different forms. In digital media, the remix often occurs after the performance, particularly in ludic moments, such as the prominence of ancillary



⁴³² Jeremy Hight, “Locative Narrative, Literature and Form,” in *Beyond the Screen: Transformations of Literary Structures, Interfaces and Genres*, ed. Jörgen Schäfer and Peter Gendolla (Bielefeld: Transcript Verlag, 2010), 317.

⁴³³ Kate Pullinger, Stefan Schemat, and babel, *The Breathing Wall* (London: Sayle Literary Agency, 2004).

⁴³⁴ Astrid Ensslin, “From (W)reader to Breather: Cybertextual De-Intentionalization and Kate Pullinger’s Breathing Wall,” in *New Narratives: Stories and Storytelling in the Digital Age*, ed. Ruth Page and Bronwen Thomas (Lincoln and London: University of Nebraska Press, 2011), 138–152.

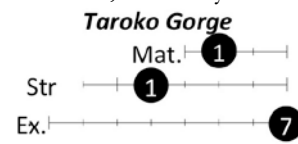
⁴³⁵ William H. Sherman, *Used Books: Marking Readers in Renaissance England* (Philadelphia: University of Pennsylvania Press, 2008), 103.

⁴³⁶ Sophie Calle and Paul Auster, *Double Game* (London: Violette Editions, 1999); Paul Auster, *Leviathan* (New York: Viking, 1992).

forms including Let's Plays and machinima. The original form is remixed through performance in a non-traditional manner. In machinima this is treating the arena of the videogame as performance by recasting the purpose of the game, in a similar way to treating *Dungeons & Dragons* as pure performance, while Let's Play recasts a performative act of playing into a passive act of watching with commentary and other ancillary materials to author a new creative work. Digital media has allowed for remixes to become more pervasive as it renders all media discrete and re-combinable: "Today, the remix and the mash-up rule."⁴³⁷ Remix fits into the manipulable definition of hypertext as "much of the aesthetic value of remix relies on implicit linking."⁴³⁸

We can identify at least three different types of remix: procedural, structural and material. These three types of remix link back to the three main categories of the taxonomy proposed in this chapter. Structural and material remixes can be directly linked back to the ways in which the remix engages with the content, while procedural remixes are a form of executable remix in which the composition remixes its source material through the procedural transformation of similar elements such as the use of Markov chains or Christopher Strachey's love letter generator. Manovich notes that "the software production environment allows designers to remix not only the content of different media types, but also their fundamental techniques, working methods, and ways of representation and expression" and remixes have proliferated in this

environment.⁴³⁹ Nick Montfort's *Taroko Gorge* (linear textual performance) is an example of a procedural remix as Montfort's original poem has spawned over twenty remixes, where authors have changed the words that appear in the generator, rather than significantly changing the underlying code.⁴⁴⁰ Scott Rettberg's initial remix, *Tokyo Garage*, transformed Montfort's meditation on a feature of a Taiwanese national park to a travesty of urbanity in modern Tokyo.⁴⁴¹ Mark Sample's *Takei, George* imports language pertaining to George Takei, gay activist and former *Star Trek* star.⁴⁴² Chuck Rybak's *Tacoma Grunge* reinvents the text in context of the Grunge movement.⁴⁴³ Montfort notes that these remixes were spurred from the "view source" function in web browsers and the initial remix was without permission, although none was necessary.⁴⁴⁴ These remixes predominantly transform the work on a linguistic level, although some artists have included extratextual elements to transform the work further.



⁴³⁷ Andrew Epstein, "Found Poetry, 'Uncreative Writing,' and the Art of Appropriation," in *The Routledge Companion to Experimental Literature*, ed. Joe Bray, Alison Gibbons, and Brian McHale (London: Routledge, 2012), 310.

⁴³⁸ Stacey Mason, "Glitched Lit: Possibilities for Databending Literature," in *Proceedings of the 2nd Workshop on Narrative and Hypertext* (New York: ACM, 2012), 41–44.

⁴³⁹ Lev Manovich, *Software Takes Control* (New York: Bloomsbury, 2013), 46.

⁴⁴⁰ Nick Montfort, "Taroko Gorge," 2012, http://nickm.com/poems/taroko_gorge.html.

⁴⁴¹ Scott Rettberg, "Tokyo Garage," 2009, <http://retts.net/tokyogarage.html>.

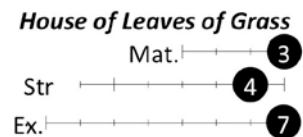
⁴⁴² Mark Sample, "Takei, George," 2012, <http://samplereality.com/elit/takeigeorge.html>.

⁴⁴³ Chuck Rybak, "Tacoma Grunge," 2012, <http://www.sadiron.com/tacoma-grunge/>.

⁴⁴⁴ Nick Montfort, "'Taroko Gorge' Printout," *The New Everyday*, 2012, <http://mediacommons.futureofthebook.org/tne/pieces/taroko-gorge-printout>.

While procedural remixes reconfigure the textual units of one or more works, structural remixes manipulate the structure one or more work, or replace one aspect of a work with that of another. Manovich provides the example of an “Anime music Video [...] that combines content from anime and music videos.”⁴⁴⁵ In this example, the Anime video’s original soundtrack is replaced by another song and then procedurally remixed in a way that it matches the content of the music. This action is trivial on the computer as digitisation reduces all media into a single digital medium. A further type of structural remix is to take a single work and alter its structural properties into a new linearity or transform a linear text into a network or distributed narrative. *Kaizo Mario* takes the basic elements of *Super Mario World* and transforms the levels into devious puzzles that require the players to have pitch perfect accuracy to proceed.⁴⁴⁶ The elements of the game have remained the same, but the structure of the levels shift the way in which the player must proceed. Through altering the structure, the remix defamiliarises the user with a work that may have previously been familiar.

Material remixes are rarer but more substantial as they involve a remediation, or the transformation of an idea or text from one medium to another, and a further procedural or structural remix.⁴⁴⁷ Mark Sample’s *House of Leaves of Grass* (systematic network performance) remediates the most common words and phrases of Mark Danielewski’s *House of Leaves* and Walt Whitman’s *Leaves of Grass* to digital lists.⁴⁴⁸ This raw data is then run through a linguistic remix of Nick Montfort and Stephanie Strickland’s earlier work, *Sea and Spar Between*, itself a material remix of Emily Dickinson’s poems and *Moby Dick*.⁴⁴⁹ This complex set of transformations resonates with the initial texts while forming an innovative new text. This remix aesthetic can be automated in digital media and thus, the remix culture has flourished while reconsidering older forms of media.



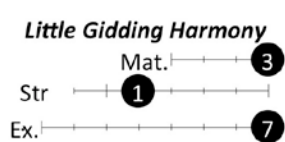
⁴⁴⁵ Manovich, *Software Takes Control*, 46.

⁴⁴⁶ T. Takemoto, *Kaizo Mario World*, SNES Rom Hack, 2007; Nintendo, *Super Mario World*, Super Nintendo Entertainment System, 1991.

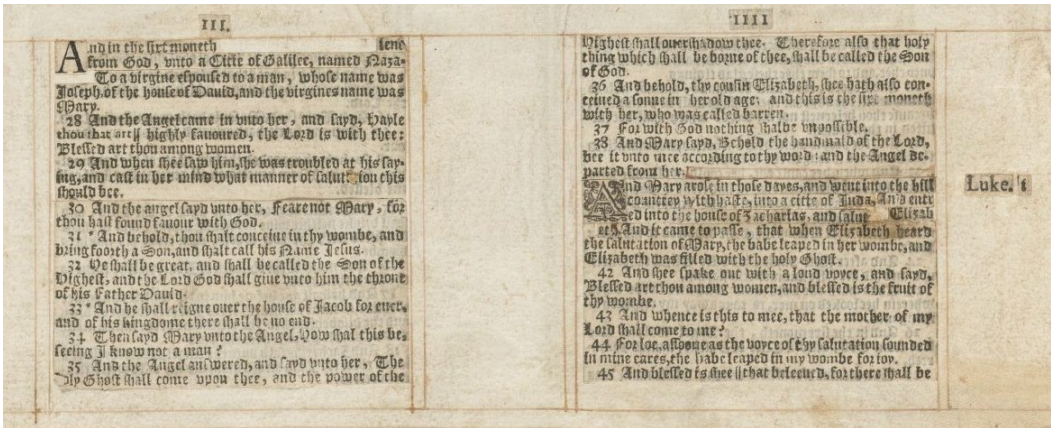
⁴⁴⁷ Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: MIT Press, 2000), passim.

⁴⁴⁸ Mark Sample, “House of Leaves of Grass,” 2013, <http://fugitivetexts.net/houseleavesgrass/>; Mark Danielewski, *House of Leaves* (London: Transworld, 2000); Walt Whitman, *Leaves of Grass: The First (1855) Edition*, ed. Malcolm Cowley (London: Penguin, 1986).

⁴⁴⁹ Stephanie Strickland and Nick Montfort, “Sea and Spar Between,” 2010, http://www.saic.edu/webspaces/portal/degrees_resources/departments/writing/DNSPII_SeaandSparBetween/index.html; Emily Dickinson. *The Poems of Emily Dickinson*. ed. by R. W. Franklin. Reading ed. (London: Belknap Press, 1999); Herman Melville, *Moby Dick: Or, The Whale* (London: Constable, 1922).



Print culture also features remixes with multiple levels. William Sherman notes that the cut-and-paste aesthetic of the renaissance included remixing “with the best and even holiest of intentions.”⁴⁵⁰ One of the exemplars of this form noted by Sherman are the collections of Little Gidding’s “Harmonies” (systematic linear remix), “these exquisite volumes were composed by cutting several copies of the four Gospels into separate lines, phrases, and even single words, and then pasting them into a new order to form a unified, continuous story—which was then illustrated with images gathered from various sources (some of which were, in fact, composed of parts of several prints cut up and rearranged to form a new whole).”⁴⁵¹ Whitney Trettien has noted the convergence between the Harmonies and digital remix culture and is currently developing a prototype for a digital version that reconstructs the original context of the cuttings.⁴⁵² The Harmonies were so popular that King Charles I requested his own version in 1635.⁴⁵³ The Little Giddings community believed that the arranged readings of the *Book of Common Prayer* created a “single account of Christ that could be used in the hours devoted to community worship with the same regularity as the psalms.”⁴⁵⁴ As each of the Harmonies was uniquely constructed, we have to focus on a copy rather than an edition and the earliest extant version, housed in the Houghton Library at Harvard University, presents a useful case study.⁴⁵⁵ The cover is unassuming, but the content inside is of great interest. The Little Giddings community reconfigured the Gospels materially and structurally in a scrapbook form to fulfil their own needs. The *Harmonies* display many of the tenets of the cut-and-paste aesthetic that still typifies remix culture.



⁴⁵⁰ Sherman, *Used Books*, 103.
⁴⁵¹ Ibid., 103–104; Little Gidding, *Bible. N.T. Gospels. English. Authorized. 1630. [Little Gidding Concordance] [Little Gidding, 1630.]* (Cambridgeshire: Little Gidding, 1630), <http://nrs.harvard.edu/urn-3:FHCL.HOUGH:10090806>.
⁴⁵² Whitney Anne Trettien, “Towards a Prototype of a Digital Harmony,” *D I A P S a L M a T a*, November 19, 2013, <http://blog.whitneyannetrettien.com/2013/11/towards-prototype-of-digital-harmony.html>.
⁴⁵³ Paul Dyck, “‘A New Kind of Printing’: Cutting and Pasting a Book for a King at Little Gidding,” *The Library* 9, no. 3 (2008): 306.
⁴⁵⁴ Ibid., 309.
⁴⁵⁵ Little Gidding, *Gospels*.

Hypertext as Physical-Digital Hybrid

In this chapter, we have seen that the delineation between print and digital literature is a false binary that presupposes that print is comparable to a plethora of digital media. The chapter instead proposes that all characteristics of digital works have physical manifestations and that if viewed as a physical-digital continuum, not only will there be a greater continuity between physical and digital literature, but a greater deal of exemplars for both forms can be compared. The three-dimensional taxonomy of transformative literature proposed above demonstrates three axes along which physical and digital literature converge. Material transformations experiment with the ways in which text can be read as text or read as a material object. The structure of a text can be linear or looping or move towards open structures such as networked or distributed fiction. The executable axis assesses the degree to which its audience can transform the text. This chapter has discussed a plethora of examples of physical and digital literature that are exemplars of each point of this taxonomy. It has also demonstrated that only one of these axes favours receptional transformations rather than imposing compositional limits on the audience. Despite the potential flexibility of the material and structural transformations afforded to the audience, the text requires an executable function in order for the reader to make any changes to the text.

If we return to Saemmer's definition of hypertext as a manipulable gesture undertaken by the reader, it is clear that hypertext should be operating on the level of the executable axis. The manipulation gesture changes the work whether temporarily or permanently, depending on the degree of agency the reader is allowed. Traditional hypertext systems have been fairly restrictive in terms of allowing the reader to enact more permanent transformations typified by the later levels of the executable axis such as performance and remix as the receptional aspects of the hypertext systems or implementations mirror the processes that entail the compositional processes. A new model of hypertext is needed in order to enable us to separate between compositional processes and the potential to create or explore receptional hypertexts as something further up the executable axis. The second half of the thesis develops and tests such a model: the Literary Web.

⁴⁵⁶ Ibid.

Chapter 3: The Literary Web

If the previous two chapters have been retrospective and reflexive in assessing the conditions of hypertext scholarship and digital fiction, the following chapter looks ahead and posits a new model of hypertext and book history called the Literary Web.⁴⁵⁷ The Literary Web builds upon the core feature of a twenty-first century hypertext identified in the literature review—the manipulable gesture—and suggests that this moment of manipulation emerges naturally from the processes of rewriting and rereading rather than as an artefact within the text. The Literary Web offers a model of the book trade that focuses on the text itself rather than reducing the material object to an abstraction. This new model is required in order to distinguish between compositional and receptional hypertexts, that is, those that emerge from the creative practices of writing and those that emerge from the reading experience. Furthermore, the model offers extra semantics for the study of transmission history and bibliography as it offers a framework to map the ways in which texts connect to each other and whereabouts the processes appear.

The Literary Web offers a model for analysing the interrelationship between producers and consumers of literature and how the text serves as the fulcrum for the exchange. Jerome McGann’s six dimensions of text (summarised in table 2) offer a basis for revising hypertext within these boundaries.⁴⁵⁸

Dimension	Definition
Linguistic	The words that form the main body of the text
Graphical	The paratext (table of contents, running titles, etc) and physical properties shaping the linguistic dimension
Documentary	The particular copy under study—a subset of the graphical dimension
Semiotic	The potential meaning in the text
Rhetoric	The external structures informing the reader’s understanding of the text (e.g. the role of author and reader, and genre)
Social	The traces of agents involved in the composition, dissemination and reception of text

Table 2 McGann’s six dimensions of textuality

McGann’s taxonomy provides a framework for understanding the different ways in which we can read a text, although often we implicitly enact many of these principles. The Literary Web builds upon McGann’s taxonomy through demonstrating how these dimensions work together

⁴⁵⁷ N.B. The Literary Web has previously been used by Johan Svedjedal but this has not been widely accepted into critical debates. Therefore, I repurpose the term for a more specific usage. Johan Svedjedal, *The Literary Web: Literature and Publishing in the Age of Digital Production. A Study in the Sociology of Literature* (Stockholm: Kungl. Bibliotek, 2000); The Literary Web is heavily influenced by Steve Deering’s Internet Protocol hourglass model. Steve Deering, “Watching the Waist of the Protocol Hourglass” (presented at the IETF 51, London, 2001), <http://www.iab.org/wp-content/IAB-uploads/2011/03/hourglass-london-ietf.pdf>. Deering models the various layers of interaction that constitute the Internet onto an hourglass to demonstrate the vulnerability of certain aspects of the protocol stack.

⁴⁵⁸ Jerome McGann, “Marking Texts of Many Dimensions,” in *Companion to Digital Humanities*, ed. Susan Schreibman, Ray Siemens, and John Unsworth (Oxford: Blackwell, 2004), 198–217, <http://www.digitalhumanities.org/companion/>.

in order to shape the reception of a text through its production. This new model suggests five separate layers that broadly define the stages of textual production and reception: work-in-progress, hypertext draft stage, text, reading and rereading and discovery. The dual pillars of rhetoric and technology support the five layers and guide both producers and the audience in interpreting the text. The Literary Web model posits that any information must be filtered through the text itself and that this filtering mechanism is best represented by the way of an hourglass model. This layering offers a non-chronocentric understanding of hypertext in both physical and digital environments that accounts for differences between production and reception histories. The Literary Web can be used for analysis of individual texts within the framework of book history. After explicating the model, the chapter will discuss the implications of the new model and pose how it scales from a single text to a chain of interactions in the form of the “fork.” This groundwork will be tested through two case studies in the final two chapters of the thesis.

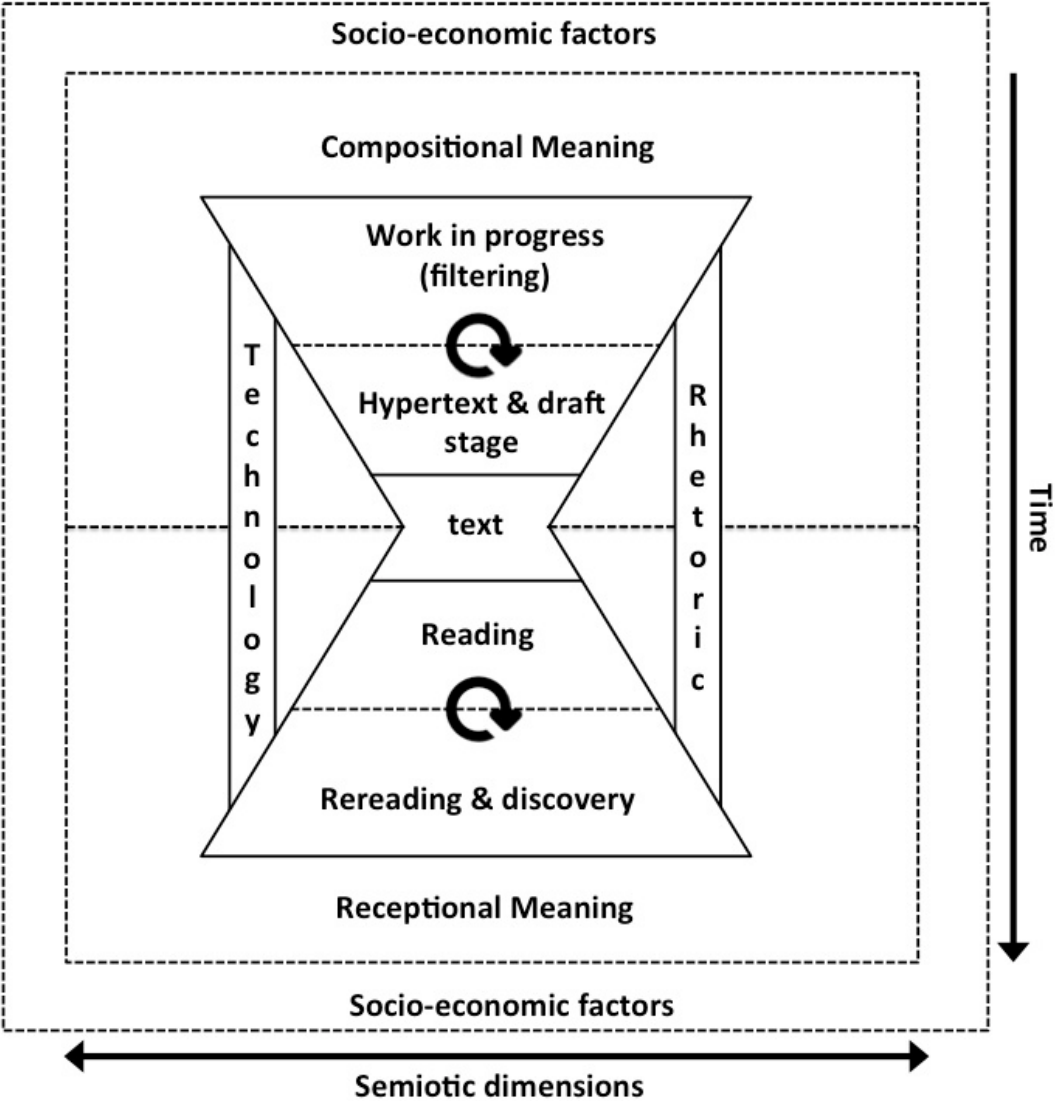


Figure 8 The Literary Web Hourglass Model

When visualised, the Literary Web model can be reduced to relatively few elements (figure 8). The central hourglass maps out the stages of a text's composition and reception.⁴⁵⁹ Although many individuals are associated with both composition and reception, their roles remain separate as once the text is published they become informed readers. These factors are heavily influenced by socio-economic factors such as ideology, financial necessity and copyright that form the outermost container for the other social and aesthetic transactions in the model. The material text is the motivating force for the model. This is not to ignore the important role played by readers; a book with no readers is of little conventional use. The shape of the hourglass relates to the processing of *potential* meaning within the development and reception of text.⁴⁶⁰ Jerome McGann defines this as the semiotic dimensions of the text.⁴⁶¹ The text itself contains a limited amount of determinate meaning without the author's filtered knowledge or for readers willing to read into the text. It is impossible for an author to write a book containing their entire field of knowledge or for a reader to gain their entire understanding of the world from a single text. The element of the single text, represented by McGann's documentary dimension, is vital for the Literary Web. In this model, the horizontal axis represents the layers of potential meaning and the vertical axis represents the passing of time from top to bottom, akin to sand in a physical hourglass. The only physical part of the Literary Web is the text: the central section and the interface between production and reception, although other sections will produce material evidence; this often requires reconstruction from other remaining evidence.⁴⁶² This is shaped by the choice of technology and the rhetorical structures around the text. The choice of technology can be determined separately by the composers and the audience, while the rhetorical structures include the roles of the authors and readers as well as genre.⁴⁶³ Hypertext emerges from the processes of creation and reception rather than from within the text's linguistic dimension, although the rhetorical and technological structures shaping the text may ensure the reader approaches the text in a hypertextual manner.

The hourglass analogy places text as the fulcrum of the processes. The rest of the model reflects on the processes that occur to and shape the text which becomes more abstract the further it moves away from the centre. As the processes become more abstract, the semiotic dimension becomes more personal as readers will have their individual interpretations and socio-cultural approaches to the text. The Literary Web does not, however, ignore the influence of others. The agents of the book trade can be mapped onto the model as a third axis of the

⁴⁵⁹ These broad terms are favoured over writing and reading as they encompass a wider range of activities.

⁴⁶⁰ Potential is an important distinction to make, as there is no guarantee that all readers will act in the same way, and in fact, the Literary Web model favours difference.

⁴⁶¹ McGann, "Marking Texts of Many Dimensions."

⁴⁶² John Bryant, *The Fluid Text: A Theory of Revision and Editing for Book and Screen* (Ann Arbor: The University of Chicago Press, 2002), 34.

⁴⁶³ McGann, "Marking Texts of Many Dimensions."

social dimension.⁴⁶⁴ The third-dimension reintroduces the agents of print who dominate previous models of the book trade. Don McKenzie's "Printers of the Mind" was instrumental in revising scholars' understanding of the social relationships of agents in printing as the protocols and processes of composition may have been fixed, while the workload and make-up of the printing team could vary on a daily basis, creating distortions in an idealistic model of the book trade.⁴⁶⁵ Similarly, the Literary Web model maps the agents onto the model in the third dimension by way of a diamond, inverting the levels of potential meaning. The third dimension reveals the stress placed upon the text itself as the largest body of agents appears at the level of the physical object—because it is impossible to assert whether somebody has actually read the text—and how this is distant from the level of the individual interpretation as the semiotic dimension is at its narrowest.

⁴⁶⁴ Ibid.

⁴⁶⁵ D. F. McKenzie, *Bibliography and the Sociology of Texts* (Cambridge: Cambridge University Press, 1999), 3.

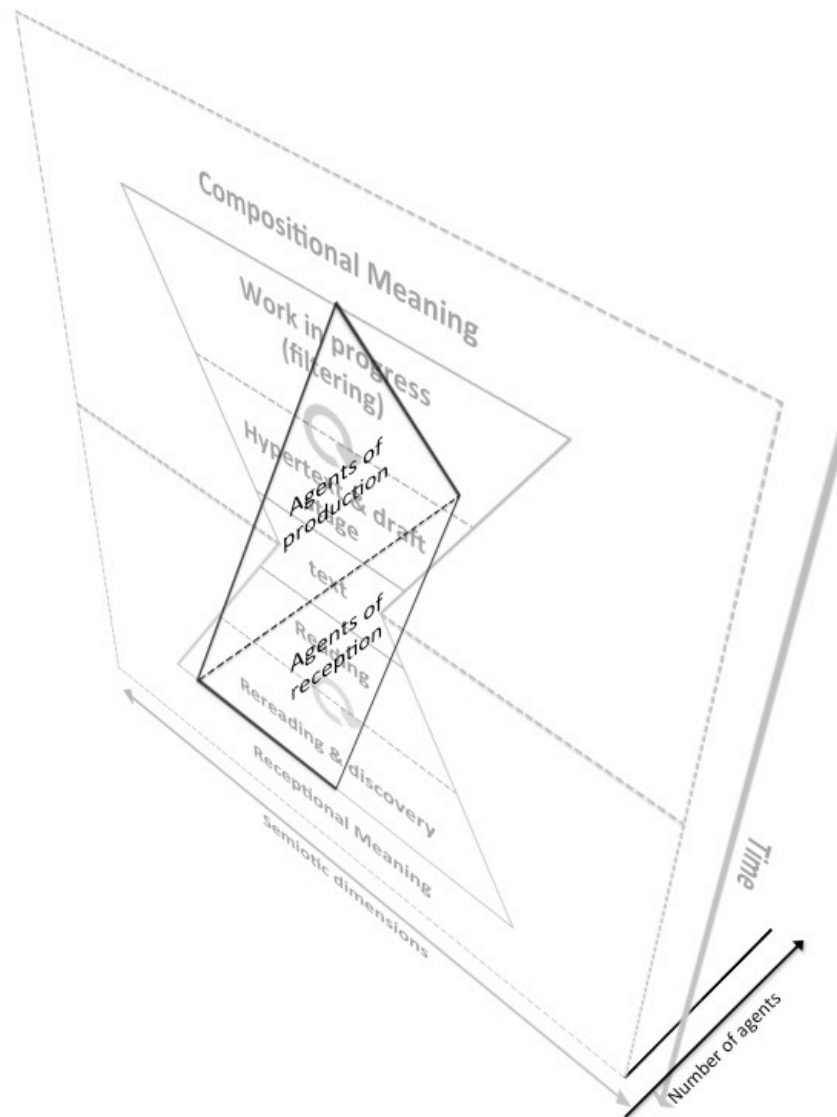


Figure 9 The third dimension of the Literary Web

While the third dimension reveals the presence of agents who contribute to a text's composition and reception, the two main dimensions function on the scale of a single reader with the other agents in mind, as individual case studies provide more information than generalizations about readers. Unlike the agents of book production who must co-operate to the extent that they need to produce a commodity, there is no compulsion for readers to work together to generate informed readings. Even reading professionals such as reviewers can adopt different strategies and opinions, while the composers must work towards a single output. To this end, the Literary Web model borrows McGann's documentary dimension, which considers the particular physical

manifestation of the text under study.⁴⁶⁶ The model's focus on the documentary dimension ensures that the technology can be properly assessed and ensures that the text is consistent. The physical item often shares qualities with the same printing or editions but a reader engages with a single copy and cannot be certain there is not variation within the printing.

The hourglass primarily represents text as an interface between producers and consumers. Reader-response theory, particularly the work of Seymour Chatman and Wolfgang Iser, offers a precedent for the interaction between producer and consumer, but confines the interactions to author and reader.⁴⁶⁷ The aesthetic contract between the author and reader proposed by reader-response theory ignores the influence of other agents of composition who might alter the text and often does not consider the empirical traces of reception left behind by readers. Moreover, reader-response focuses primarily on the exchange between author and reader through the linguistic dimension of the text rather than any of the other elements of McGann's taxonomy. These more complex structures of material textuality can be borrowed from models of the book trade, which stem from Robert Darnton's communication circuit that demonstrates the mutual influence of various agents of the book trade such as printers, authors, readers, publishers and distributors.⁴⁶⁸ Darnton recalls that "every once in a while since then I receive a copy of another model that someone has proposed to substitute for mine. The pile of diagrams has reached an impressive height—and a good thing, too, because it is helpful for researchers to produce schematic pictures of their subject."⁴⁶⁹ Adam and Barker's revised model argued that external factors unavoidably shape the book trade and that ultimately, the survival of a book dictates its success.⁴⁷⁰ Similarly, Peter McDonald has argued that any model of the book trade must take into account "a complex ranking of structurally inter-related communications circuits," as agents of the book trade are not defined simply by their function, but also by their status.⁴⁷¹ In other words, prestige and cultural capital are as important as economic capital. James Secord has further critiqued prior models of the book trade for focusing on the production of texts while conflating the reception of texts into a single monolithic entity.

⁴⁶⁶ McGann, "Marking Texts of Many Dimensions"; N.B. A similar important distinction is made in the Functional Records for Bibliographical Records (FRBR) in the form of the "item," or "a physical object that has paper pages and a binding and can sometimes be used to prop open a door or hold up a table leg" in Barbara Tillett, *What Is FRBR? A Conceptual Model for the Bibliographic Universe* (Washington, DC: Library of Congress, 2004), <http://www.loc.gov/cds/downloads/FRBR.PDF>.

⁴⁶⁷ Wolfgang Iser, *The Act of Reading: A Theory of Aesthetic Response* (London and Henley: Routledge & Kegan Paul, 1978); Seymour Chatman, *Story and Discourse: Narrative Structure in Fiction and Film* (Ithaca and London: Cornell University Press, 1980).

⁴⁶⁸ Robert Darnton, "What Is the History of Books?," in *The Book History Reader*, ed. David Finkelstein and Alistair McCleery, 2nd ed. (Oxford: Routledge, 2006), 9–26.

⁴⁶⁹ Robert Darnton, "What Is the History of Books? Revisited," *Modern Intellectual History* 4, no. 3 (2007): 502.

⁴⁷⁰ Thomas R. Adams and Nicolas Barker, "A New Model for the Study of the Book," in *A Potencie of Life: Books in Society*, ed. Nicolas Barker (London: The British Library, 2001), 5–43.

⁴⁷¹ Peter D. McDonald, "Implicit Structure and Explicit Interactions: Pierre Bourdieu and the History of the Book," *The Library* XIX, no. 2, 6th Series (June 1997): 110–111.

Secord instead offers the figure of mutation and differences as the public's use and discourse around the book can transform later editions of the text.⁴⁷²

Existing models of the book trade offer desiderata for the model of the Literary Web. Such models have been criticised for focusing on people rather than documents, although often document-based models explore the processes done to the book rather than the book itself.⁴⁷³ The Literary Web's inescapable focus is on text and material forms. Previous models have commoditised a *smorgasbord* of technologies into the "book," overlooking the various materialities of these objects, platforms and formats.⁴⁷⁴ This new model corrects these deficiencies through the introduction of the technological pillar which asserts the importance of carefully considering the technologies of composition, dissemination and reception, as these shape interpretations of the text, particularly through their rhetorical structures. Adams and Barker note the importance of external factors in influencing the book trade that cannot be ignored. Unlike in Darnton's model, where the external influences emerged from within the book trade, Adams and Barker demonstrate the dominance of the external influences such as economic sanctions, copyright laws and the requirement to write for a wider audience than just the author. The book trade must abide to the wider socio-cultural climate. Moreover, McDonald argues the book trade is tied together by "a collective investment in common principles of legitimacy and, in some cases, a shared generational status."⁴⁷⁵ Although the cultural capital of the book trade is an important factor to consider, there are many agents of the book trade who do not subscribe to this investment, such as bootleggers and smugglers, and this is a bias of an industry dominated model rather than focusing on the readers and reception.

In approaching the Literary Web through a focus on text it is important to remember that there are important distinctions to factors when approaching text as an entity that exerts an influence over external parties. Price views the rise of print culture in terms of overburden: "Too much information, too many readers, too much paper."⁴⁷⁶ The deluge of text, print and literature cannot be side-lined within a simplified transmission model, as angst about the amount of material to potentially read has increased with the larger body of works published each year. Readers are likely to be anxious that if they cannot read as fast as texts are published that they may be missing out on some important work. Furthermore, the model places a single version of a text as the fulcrum, so our understanding of text moves beyond the dichotomy between "good" and "bad" versions of texts, in the sense of their adherence to the principles of the

⁴⁷² James Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago Press, 2000).

⁴⁷³ Adams and Barker, "New Model," 12.

⁴⁷⁴ C.f. Leah Price, "From *The History of a Book* to a 'History of the Book,'" *Representations* 108, no. 1 (November 2009): 120–138.

⁴⁷⁵ McDonald, "Implicit Structure," 118.

⁴⁷⁶ Price, *How to Do Things*, 14–15.

author's intentions or the ideal copy, towards the influence that a particular version of the text—however expunged, misprinted, shortened or marked-up—has on readers who encounter those versions before other editions. Leah Marcus proposes a model of “unediting,” in which differences between so-called “good” and “bad” texts are afforded equal status within a network, rather than asserting a hierarchy.⁴⁷⁷ Both good and bad copies of texts are vital to readings, and misreadings, of a particular text that fuel its continual use in the literary marketplace. Any text that has been successful enough to survive through to a reprint will likely have at least slight textual variation. Often this effect can be unintentional; Random House's first authorised American version of James Joyce's *Ulysses* was accidentally typeset using Samuel Roth's pirated edition, creating a blueprint of the “bad” text for many subsequent reprints.⁴⁷⁸ James Secord's model of reception is of further use to understand the importance of focusing on the text and its reception, as critical investigation of reception “opens up general possibilities for understanding what happens when we read” and integrates the hermeneutic experience “with an understanding of the physical appearance and genre of a work and the ways in which it is marketed and discussed.”⁴⁷⁹ The same text may have an audience from a single person to billions of humans and machines, all of whom filter their understanding of the text through the same narrow experience of reading. In summary, as the more people are able to become involved in a process around the book, such as reading, publishing or editing, the semiotic dimension of the text decreases as individual readings can only appear at the more personal moments of the Literary Web model.

As a text's audience is heterogeneous, the Literary Web works on the level of the individual: ephemeral experiences are difficult to record on a large scale, and any methodology that attempts a large-scale analysis will be reductive and ignore the ways in which the texts can be recontextualised and mutated. The discrepancies in the transmission history of *King Lear* provides an ample case study for this as the 1608 Quarto and 1623 Folio cannot be reconciled leading to two distinct versions of the play, “The History of King Lear” and “The Tragedy of King Lear.”⁴⁸⁰ The ephemeral nature of text and of a particular encounter with language is problematic for the study of the book. McDonald states that all words are ephemeral within their context and “even if one quotes *verbatim*, one never asks the same question twice.”⁴⁸¹ McDonald extends this to denying the monolithic conception of the book: “no book is one

⁴⁷⁷ Leah Marcus, *Unediting the Renaissance: Shakespeare, Marlowe, Milton* (London and New York: Routledge, 1996), 23.

⁴⁷⁸ Robert Spoo, *Without Copyrights: Piracy, Publishing, and the Public Domain* (Oxford: Oxford University Press, 2013), 255.

⁴⁷⁹ Secord, *Victorian Sensation*, 4–5.

⁴⁸⁰ Roger Chartier, *The Author's Hand and the Printer's Mind* (London: Polity, 2014), 158.

⁴⁸¹ McDonald, “Implicit Structure,” 105.

thing, it is many *things*, fashioned and refashioned repeatedly under different circumstances.”⁴⁸² Both of these statements indicate the material context of a book, whether read or discussed, is always shifting because of the receptional discourse in which it emerges. An apprentice Pierre Menard may attempt to directly remap the original but traces of the copying process will distinguish it from the original. Furthermore, as the model favours personal experience, the many things a book can mean are accounted for in both the personalisation of the single copy and the widening of the potential meanings at that part of the hourglass. William Kushin argues that text remains an integral part of the circuit: “texts are simultaneously marked by time and are transcendent of it; scarred into being by their very manufacture, they await an intimate conversation with the future”⁴⁸³ At the same time as being marked by time and deeply historicised, text is in constant flux. Roger Chartier has noted that these texts can be scarred by multiple times and uses. Chartier reads the materiality of a copy of *Hamlet* that “in fact contains several *Hamlets* in one: that of the 1604 quarto [the text’s material source]; that of Davenant, who purified and abridged the work in 1660 to adjust it to new political and aesthetic requirements; that of its 1676 publishers.”⁴⁸⁴ These historical, rhetorical and technological factors must be carefully considered when analysing a manifestation of a text as the reader’s knowledge is shaped by such marks.

A further consideration of the Literary Web is the interface between the agents of composition and reception. The text represents an attempt of the composers to impart information to the readers, which will only be a filtered version of the information and socio-cultural conditions behind the composition. The hourglass analogy visualises this filtering through the text. The filtering model can be seen in the movement from the original drafts of the author’s work through to the finished product. Cerquiglini posits this is an essential aspect of any text, as readability requires the elimination of “the surplus of text, language, and meaning.”⁴⁸⁵ This is the natural consequence of the overburden of literature alluded to by Leah Price. Although there may be multiple interpretations of a particular text, these elements must remain indeterminate. If all potential meanings were explicitly stated in the text, the reader would face the burden of reading them all in order to choose their own interpretation. Once information has been filtered through publication, the process is irreversible. This condition is essential for the consistency of the hourglass model that can be resolved by allusion to entropy and Maxwell’s Demon. Brian Greene defines entropy as “a measure of disorder or randomness,” an

⁴⁸² Jerome McGann, “From Text to Work: Digital Tools and the Emergence of the Social Text,” *Romanticism on the Net* no. 41 (2006), <http://id.erudit.org/iderudit/013153ar>.

⁴⁸³ William Kushin, *Symbolic Caxton: Literary Culture and Print Capitalism* (Notre Dame: University of Notre Dame Press, 2008), 5.

⁴⁸⁴ Chartier, *Author’s Hand*, 180.

⁴⁸⁵ Bernard Cerquiglini, *In Praise of the Variant: A Critical History of Philology*, trans. Betsy Wing (Baltimore and London: The Johns Hopkins University Press, 1999), 45.

appropriate analogy for the Literary Web.⁴⁸⁶ The shape of the hourglass facilitates this analogy as there is an inherent disorder in the semiotic meaning of the text at the stage in which the text is being produced and when readers are forming their understanding of the text. Conversely, a single copy of the text will be textually stable and not display a great amount of indeterminacy. A further condition of the Literary Web is that semiotic meaning cannot return past the point of publication, as revision would create a new version of the text. Maxwell's Demon provides a model for this contingency, as this thought-experiment posits an agent blocking the connecting passage between two spaces of equal temperature and pressure while allowing fast moving molecules to the second room while simultaneously keeping them out of the first room.⁴⁸⁷ As the fast moving molecules move to the second room, the indeterminacy of the first room diminishes, reducing the entropy. Similarly, all the indeterminacy that has characterised the production of text is transferred to the reception of text after publication, as the readers must now puzzle the meaning out of the text rather than the composers attempting to tame the indeterminacy into a relatively stable text. Equally, the composers of the text cannot reduce the semiotic multiplicity of the reading process by revising the text. When Vladimir Nabokov offers his interpretations of *Pale Fire* in interviews, he is not revealing the true solution to the texts but rather imparts this knowledge as a reader, with a unique knowledge of the text undoubtedly, but a reader nonetheless.⁴⁸⁸ Miller argues that these comments in forewords, afterwords and interviews constitute a process of extratextual revision as Nabokov attempts to shape his critical reception without altering the book-as-text.⁴⁸⁹ As Sutherland states, "Authorial revision does not override history but operates within its bounds; history does not override authorial intervention but accedes to it. Or rather, history accedes to the editor's inferred understanding of the author's likely behavior with regards to his text."⁴⁹⁰ Building a transmission history is more amenable to understanding the text than blindly accepting revisions as part of the original. Ancillary extratextual apparatus such as addenda and errata exist in a transient state between authorised and part of a particular printing that features the corrections and can often be discarded or ignored. The act of revision creates a new version of the original text, and the new text creates a new process of the Literary Web as the author creates a text with more than the original context.

⁴⁸⁶ Brian Greene, *The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory* (London: Vintage, 2000), 333.

⁴⁸⁷ Charles Bennett, "Demons, Engines and the Second Law," *Scientific American*, November 1987, 110.

⁴⁸⁸ C.f. Alfred Appel and Vladimir Nabokov, "An Interview with Vladimir Nabokov," *Wisconsin Studies in Contemporary Literature* 8, no. 2 (Spring 1967): 137 and quotes in; Andrew Hoyem, *On Nabokov's Poem "Pale Fire"* (San Francisco: Arion Press, 1997), 4; David Lodge, "What Kind of Fiction Did Nabokov Write? A Practitioner's View," *Cycnos* 12, no. 2 (1995), <http://revel.unice.fr/cycnos/document.html?id=1470>.

⁴⁸⁹ Lyndsay Miller, "Nabokov's Extra-Textual Revisions" (presented at the Vladimir Nabokov and the Art of Composition Panel, NeMLA, Harrisburg, Pennsylvania, 2014).

⁴⁹⁰ Kathryn Sutherland, "Anglo-American Editorial Theory," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 49–50.

McGann's dimensions and the Literary Web expand beyond the one-dimensional activity of reading or two- or three-dimensional models of the book. This complexity must be linked and reconciled into a generalised model for maximum clarity. String theory posits a model of the particle physics whereby the world is built of tiny strings that vibrate and can hide and consume multiple tiny curved dimensions.⁴⁹¹ These dimensions manifest physically in the form of the page, as a small three-dimension object belies a two-dimensional form of presentation and a one-dimensional model of reading (figure 10).

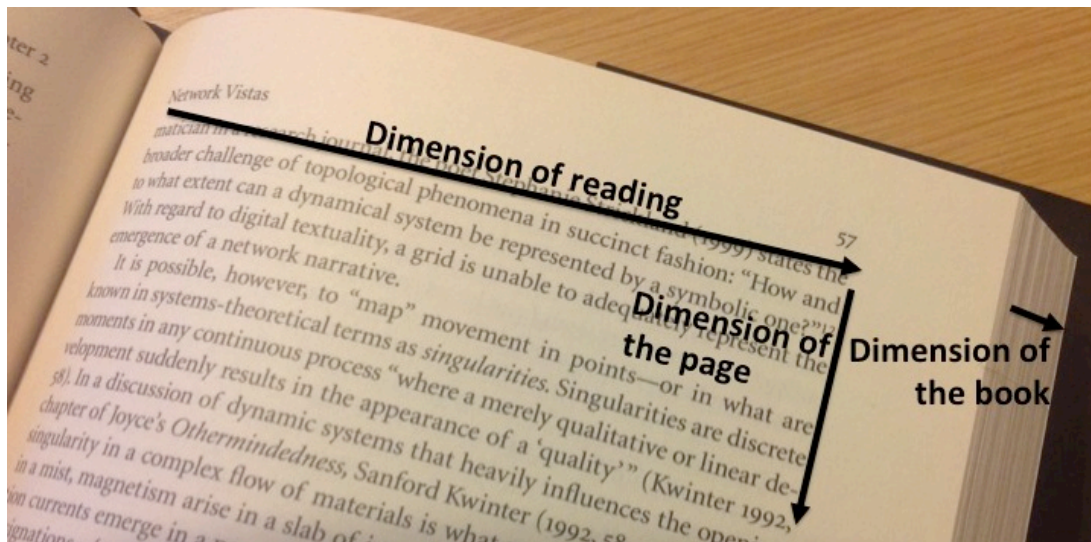


Figure 10 Dimensions of the book

This represents one of the most powerful models of hypertextuality, as the reader will approach the text through all three dimensions simultaneously, negotiating the relationship between the words adjacent to each other in a sentence as well as on the same page and within the book. Through building upon these non-linear technological structures, hypertext systems can be built that allow for reader-based linking. This model of hypertext fulfils the conditions of Nelson's original definition of hyper- as multi-dimensional as well as surpassing the archival model of hypertext proposed in his Xanadu project. The manipulable gesture is the fulcrum of the act of reading as the reader peels back the lower dimensions to reveal further ones. It is unlikely that reading will expand beyond a single linear dimension in the majority of text, so including dimensions *within* this experience will facilitate forms of hypertext closer to Nelson's vision.

Building

As a model guided by reception, the Literary Web acknowledges the importance of ancillary connections to building networks. These connections are not on a textual level, but the discourse around the text and are ascribed to the text often at the moment of reading and therefore fit into the classic category of implicit links. These ancillary networks function as

⁴⁹¹ Greene, *Elegant Universe*.

rhetorical structures in shaping the reader's understanding of the text as it demonstrates the consensus of discourse on the text and the ways in which the reader may interpret the text themselves. The social nature of the Literary Web depends on a group of readers and texts; consensus is far more important than canonicity. The canon is still an interpretive undertaking, however, as it is constructed on an ancillary level from the opinions of academics and book reviewers. These two groups still function as the primary gatekeepers for the canon: academics for cultural capital, and reviewers for financial capital. Canon formation relies on the opinions of these gatekeepers. Marginalia reveals the more democratic traces of readership on an ancillary level as "marginalia can identify other texts a reader associated with or even read alongside a particular book. Cross-references and passages copied verbatim from other books are frequent enough to attest to the widespread practice of what has been called 'extensive' rather than 'intensive' reading."⁴⁹²

The Literary Web requires a deeper understanding of hypertext and engagement with the form similar to Saemmer's conception of the manipulable gesture. Several early hypertext fictions were marketed on the basis that the reader could explore a different narrative while rereading, but since these extra dimensions cannot be viewed or understood simultaneously, a temporal linearity overrides any immediate narrative hypertextuality. The different strands must be drawn out through rereading and the ways in which the reader brings in the wider context of their understanding of the text in its new context, and the knowledge they have gained since. The ancillary connections are "zoomable," that is, they can be viewed on various levels of connections. The levels become more abstract the further they are zoomed out. It is difficult to visualise the "big data" of books, genres, movements and time periods.⁴⁹³ Meso-level connections are the usual unit of study for a scholarly monograph and exist primarily on the level of reader recognition and implicit links. Ian Watt's seminal *Rise of the Novel* uses the case study of three eighteenth century authors (Daniel Defoe, Samuel Richardson and Henry Fielding) to extrapolate the trends of the rise of the novel in the same time period.⁴⁹⁴ Rather than engage with the large body of novelists working at this time, Watt must generalise from these three exceptional authors. Micro-level links exist within books and around sets of books through transformations and quotes that are quite explicit and readily connectable. The connections between Homer's *Odyssey* and James Joyce's *Ulysses* provide a useful case study of the zoomable nature of literary criticism (table 3).

⁴⁹² Sherman, *Used Books*, 18.

⁴⁹³ Viktor Mayer-Schonberger and Kenneth Cukier, *Big Data: A Revolution That Will Transform How We Live, Work and Think* (London: John Murray, 2013).

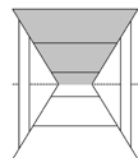
⁴⁹⁴ Ian Watt, *The Rise of the Novel: Studies in Defoe, Richardson and Fielding* (London: Hogarth Press, 1987).

Level of Connection	Example in <i>Ulysses/Odyssey</i>		
Macro	Genre: Epic Structure: 18 parts		Informs the narrative structure and character traits
Meso	The narrative structures—the travelling husband and return home Titles of sections Correspondences between characters in personalities (both similar and dissimilar—c.f. Penelope and Molly Bloom) and names (Stephen Dedalus)	Reinforces the convergences	
Micro	" <i>Epi oinopa ponton</i> " ("Gr., 'over the winedark sea', repeatedly in <i>Odyssey</i> ") ⁴⁹⁵ " <i>Everyman . . . Noman</i> : Odysseus answered the Cyclops that he was a nobody, 'noman' or <i>outis</i> " ⁴⁹⁶	alerts the reader to similarities in motifs and character traits	Ensures the textual similarities will be noted

Table 3 The levels of connection between Joyce's *Ulysses* and Homer's *Odyssey*

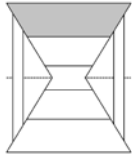
These layers intersect and are zoomable. In this example, the quotations and allusions to the *Odyssey* inform the reader's understanding of the narrative structure and genre of *Ulysses*. Each layer builds upon the last to complete a more comprehensive understanding of the connections between the two texts. In literary criticism, arguments about meso-level connections are built upon either observations on the micro- or macro-levels as evidence from the generic traits or quotations can lead to arguments about common tropes. The different levels of hypertext, as well as the way in which they can be structured, are evident through returning to McGann's six dimensions of the text. The linguistic and documentary dimensions rely on copy-specific evidence, so can only make connections on the micro-level. Linguistic and documentary evidence can be built up to meso- and macro-level hypertext through comparison of a corpus. The graphic and social dimensions of the text both function as meso-level hypertext. The researcher can explore how the documentary dimension is similar through close examination of the graphic dimension and the overall structures of the text or by tracing the social dimension through peeling back the history of the text's composition and which agents were involved. Finally, the rhetorical dimension can only be a macro-level connector as these happen at a global level and are connected to large-scale structures such as genre, the roles of particular people and discourse around the book.

Having introduced the role of hypertext within the model, as well as the general make-up of the Literary Web, the chapter will now consider the make-up of the separate sections of the model in greater detail. The top half of the hourglass model represents the processes of composition. Composition is affected by the author's initial knowledge as well as ideology and socio-economic status, among many other external influences. These have an important formational role within the construction of the text. A



⁴⁹⁵ James Joyce, *Ulysses: Annotated Student Edition* (London: Penguin, 2000), 3.30 c.f. 943n3.30.

⁴⁹⁶ *Ibid.*, 1177n858.8.9.



well-read literary author may struggle to procure the funding required to write their *magnum opus* but must instead publish a succession of lesser works out of financial necessity. Literary texts do not germinate *sui generis* but are shaped by the author's experiences and situation. Research conducted in order to improve the text, as well as changes in the author's personal circumstances or ideology transform the text but also add to the indeterminate elements of entropy that might contribute to the construction of the final text. The finished product will not contain these factors in their entirety but rather will have been carefully filtered through the process of editing, drafting, revision, potential censorship and many other factors. The final project represents the filtering of many agents through ideology, knowledge, commercial necessity and many other limiters. Therefore, the next stage decreases the flexibility and intrinsic semiotic multiplicity of the text through the work-in-progress and cycle of drafts. Although drafts and versions have been important throughout the history of literature, this has often not received prominence in discussions of composition as Romanticism, despite its deep investment in revision had a "romantic creed of antirevisionism, premised on the belief in inspiration, spontaneity, and organic form" that was broken by the Modernist's deep investment in the ideology and aesthetics of revision.⁴⁹⁷ Where available, the evidence of the drafting processes of writing, editing and printing offer valuable data about the early stages of the Literary Web.

Genetic studies represents an attempt to document this stage of the text's construction and the author's revision process, such as Genetic Joyce Studies, in which scholars attempt to reconstruct Joyce's processes in composing *Finnegans Wake* through connecting drafts and notes to the finished product.⁴⁹⁸ In the composition of genetic editions, it is important that the text is consulted both forwards and backwards "to see where all the later versions come from, but also [...] to observe how each choice necessarily implies the neglect of alternatives, the roads not taken."⁴⁹⁹ This does not replace the author's intentions, breaking the entropy of the hourglass model, as the reader is reconstructing the *potential* decisions made and cannot sincerely argue *why* these decisions were made. Concrete connections between drafts are often difficult to reconstruct, but these materials can aid their interpretation of the composition process. Dirk Van Hulle has described Joyce's genetic processes through the shape of an hourglass, suggesting that Joyce's raw materials were separated into useful elements and then filtered back into the mass of drafts if deemed appropriate. In Van Hulle's visualization, the notebook represents the middle of the hourglass model as it allows the readers to view the linguistic elements in their

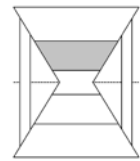
⁴⁹⁷ Hannah Sullivan, *The Work of Revision* (Cambridge: Harvard University Press, 2013), 31, 237.

⁴⁹⁸ This is termed "genetic" rather than "evolutionary" criticism, as it does not place an aesthetic judgement on the worth of various drafts.

⁴⁹⁹ Geert Lernout, "Continental Editorial Theory," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 72–73.

state of transition.⁵⁰⁰ Van Hulle processes Joyce's notebooks as the central part of his reading experience and his appropriation of the hourglass does not complicate the notion of published text as its fulcrum. Although this may appear to contradict the Literary Web's hourglass as work-in-progress, material is in general circulation, this is a facsimile rather the original and it has gone through editorial processes and can be read as a separate item. The facsimile remains as distant from the original through the processes it has been through as the final publication of the same text. It merely supplements our understanding of Joyce's genetic processes, rather than offering us a first-hand understanding of the plane of the authorial semiotic dimension.

After this gestation period, the draft period achieves temporary stability through the hypertext stage. In the process of revision, different levels of the text may be in flux, as the author may keep sections of the text from their first draft while the overall structure of the text may radically change. This is the stage most



hypertext fictions or scholarly editions are published in to approximate the indeterminacy available to composers in the text's early stages of production. The hypertext stage endures the most non-authorial incursions, as copyeditors, editors and proofreaders tinker with the finished product, introducing new readings. Occasionally, if the author is involved in this process, they may revise their own writing through the introduction of these new incidentals.⁵⁰¹ As the text is unfinished, the reader can make connections in the extant gaps as the text is provided in a looser way than the published version. In this sense, hypertext authors construct their text to have an indeterminate nature and multiple pathways to be available through the network. The reader has to fix their own manifestation of the text through their reading experience. Unfinished posthumously published works such as Vladimir Nabokov's *The Original of Laura (TOoL)* present case studies for the author's hypertext stage.⁵⁰² The novel is presented as a facsimile of Nabokov's index cards with a corresponding transcription. Although the narrative remains incomplete, the index cards present evidence of Nabokov's composition process including notes and other comments and traces of composition. The top-right of each index card is labelled with its position in the narrative, some of these are linear indicating the chapters and the card's position in it, although as the cards progress, the system becomes less linear: "D1," "Wild O," "Toes," "Aurora 1" and "Z." This frees the reader to shuffle the cards to create a narrative that is more satisfying for their own reading of the text. The final batch of index cards contains fragments, notes for further use and the final card simply contains a list: "efface, expunge, erase, delete, rub out, wipe out, obliterate."⁵⁰³ Aesthetically, this is a worthy finale to

⁵⁰⁰ Dirk Van Hulle, "An Electronic Stereopitcon: Distribution and Re-Combination in Joyce's 'Guiltless' Copybook (BL 47471B)," in *Joycemia: James Joyce, Hypermedia and Textual Genetics*, ed. Louis Armand (Prague: Charles University, 2004), 133.

⁵⁰¹ Sullivan, *Work of Revision*, 43.

⁵⁰² Vladimir Nabokov, *The Original of Laura: A Novel in Fragments* (London: Penguin Classics, 2009).

⁵⁰³ *Ibid.*, 275.

Nabokov's published works, but an unlikely candidate for the last words he composed for the novel. Since many of the cards are undated, it is impossible to know whether he did write this card last, and the card's positioning is primarily an editorial decision. The unfinished state of the text, along with the possibility to shuffle the index cards demonstrates the potential in publishing this text at the hypertext stage. Arguably, the value of *The Original of Laura* within Nabokov criticism lies in considering how it reflects Nabokov's composition, since early consensus on the aesthetics of the novel is that it demonstrates Nabokov's declining literary ability.

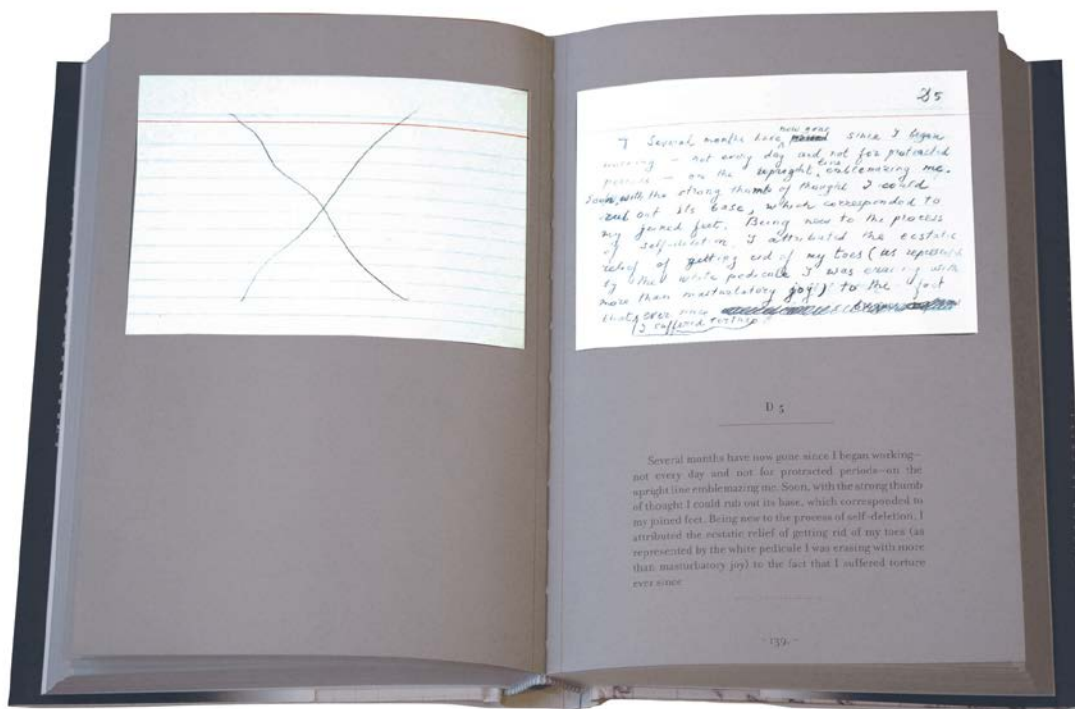
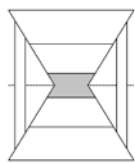


Figure 11 The layout of *The Original of Laura*

The next layer constitutes the reader's interactions with the text as published. This does not necessarily mean reading, but any form of engaging with the object. Although this is a protological model, the reader does not have to follow the protocols of reading in their culture such as the standard left-to-right, top-to-bottom paradigm of Western cultures. The standard protocols for reading work most effectively, however, since as Ulisses Carrion suggests that "a book is also a sequence of moments."⁵⁰⁴ Equally, encounters with the text must not be restricted purely to reading, as Leah Price's recent work with unresponsive readers has highlighted.⁵⁰⁵ A deformative reading that breaks from the



⁵⁰⁴ Ulises Carrion, "The New Art of Making Books," in *Artists' Books: A Critical Anthology and Sourcebook*, ed. Joan Lyons (New York: Visual Studies Workshop, 1985), 31.

⁵⁰⁵ Leah Price, *The Anthology and the Rise of the Novel: From Richardson to George Eliot* (Cambridge: Cambridge University Press, 2000); Price, *How to Do Things*.

standard reading protocol will bring useful insights into the reader's engagement with the text.⁵⁰⁶ It is, however, at this point the hourglass is narrow, as one can only read one-dimension at a time, whatever method of reading is undertaken, as even hypertext is temporally linear. Textual stability manifests in hypertext either through the user's reading sessions and the nodes they have visited or the map of the whole network. Since this stability is required in order for the text to be understood, the most useful digital environments are those that allow readers to transform the text into the linearity in which they want to traverse. These environments allow the reader to transform the text temporarily for their particular reading session.⁵⁰⁷ This transformation only offers a traversal rather than reforming connections. Temporal linearity can only be broken through alternate forms of transcription such as music notation, or crosswords, whereby one has to read in more than one simultaneous direction. One of the few counterexamples to this is Johanna Drucker's *Through Light and the Alphabet*, which explores the two-dimensional layout of the page by printing letters that span across two or three lines.⁵⁰⁸ Manuel Portela argues that Drucker "investigates the relation between the visuality of language as embodied in typography [...] and narrativity as an effect of verbal montage within the full dynamics of codex structure."⁵⁰⁹ *Through Light and the Alphabet* literalises this relationship by exploring the connection between the two-dimensional page and usually one-directional method of reading. As single glyphs intrude on more than one line, the reader must decide to read the lines characters in context on one or more levels at the same time. The initial reading of a text is important to gain an overview of the text and resonances with other texts the reader is already familiar with. If there is no stable documentary dimension, then it is difficult to extrapolate any consistent results from the other stages of the model. In Steve Deering's hourglass model of the protocol layers of the Internet, the hourglass is built to "[yield] a diversity of applications and implementations that are united via a core of *mesoscale uniformity*."⁵¹⁰ In the case of the Literary Web this is also true. The mesoscale uniformity of reading protocols allows for greater innovation at the higher levels of composition and reception. Essentially, the more stable our understanding of text and reading, the more we can experiment with hypertext design. Hypertextual indeterminacy at the level of the text itself obstructs the mesoscale uniformity and

⁵⁰⁶ Lisa Samuels and Jerome J. McGann, "Deformance and Interpretation," *New Literary History* 30, no. 1 (Winter 1999): 25–56.

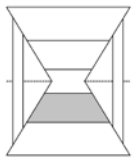
⁵⁰⁷ Leighton Evans and Sian Rees, "An Interpretation of Digital Humanities," in *Understanding Digital Humanities*, ed. David M. Berry (Basingstoke: Palgrave Macmillan, 2012), 21.

⁵⁰⁸ Johanna Drucker, *Through Light and the Alphabet* (California: Druckwerk, 1986), <http://www.artistsbooksonline.org/works/ligh.xml>.

⁵⁰⁹ Manuel Portela, *Scripting Reading Motions: The Codex and the Computer as Self-Reflexive Machines* (Cambridge: MIT Press, 2013), 80.

⁵¹⁰ Paul S. Rosenbloom, "Towards a New Cognitive Hourglass: Uniform Implementation of Cognitive Architecture via Factor Graphs," in *ICCM 2009 Proceedings*, 2009, 116, <http://sideshow.psyc.bbkc.ac.uk/rcooper/iccm2009/proceedings/papers/0020/paper0020.pdf>.

becomes disorienting for the reader. Hypertext is best positioned *outside* of these reading protocols to ensure an anchor for textual stability.



Rereading amplifies connections between disparate parts of the text, particular links between earlier parts of the text with the later. Mark Nunes considers reading to be “an act of *navigation*.”⁵¹¹ Nunes’ cartographical metaphor provides adequate visuals for the act of rereading, as the reader needs to map out the terrain for conducting more extensive investigations. Thomas Pynchon’s *Gravity’s Rainbow* requires rereading to understand the complex parabolic structure as well as the ultimate fate of many of its characters.⁵¹² The first-time reader of *Gravity’s Rainbow* is unlikely to be able to follow Slothrop’s journey through the latter half of the text, although careful rereading will be able to map out his final appearances as he disintegrates into the text. The text is transformed into a multi-dimensional entity through rereadings as the texture of the text becomes readily apparent. This is equally true of hypertext fiction and linear fiction as a single traversal of the text, unless accompanied by backtracking and careful extratextual mapping, represents a single pathway through the text, which only further rereading will enrich and recontextualise. Moreover, in order to connect with other readers, rereading is essential as the experience of others can help to shape readings once the initial landscape has been mapped out. As Alain Robbe-Grillet states, rereading creates a shared experience as well as the connection between the micro-events of the text and macro-structure:

Now both of them have finished the book they have been reading for some time; their remarks can therefore refer to the book as a whole: that is, both to the outcome and to the earlier episodes (subjects of past conversations) to which this outcome gives a new significance, or to which it adds a complementary meaning⁵¹³

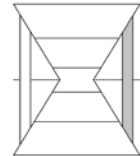
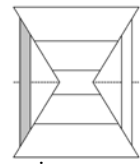
Those who have read a text can widen their understanding of the work through social interactions in a variety of forms, these are ancillary connections and constitute the receptional meaning produced for that copy of the text. In turn, as these become standard and accepted interpretations of the text, they become an essential component of the rhetorical dimension of the text.

⁵¹¹ Mark Nunes, “Gaps and Convergences in the Joycean Network,” in *Joycemia: James Joyce, Hypermedia and Textual Genetics*, ed. Louis Armand (Prague: Charles University, 2004), 49.

⁵¹² Pynchon, *Gravity’s Rainbow*.

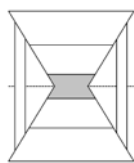
⁵¹³ Alain Robbe-Grillet, *Jealousy*, trans. Richard Howard (London: John Calder, 1987), 42.

The shape of the hourglass depends on more than a willing author and reader. With the plethora of *Intermediate* agents, there needs to be some structuring and scaffolding to stop the entire transaction from being capsized by the external influences. This role is filled by the two pillars of rhetoric and technology. McGann's rhetorical dimension represents the roles of the reader and author as well as the genre of the text. Further to McGann's definition, the materiality of the object offers important rhetorical information. We know how to read a book or a comic book according to its generic conventions. This dimension is intrinsic to the Literary Web as it defines the role of the reader and other parties within the engagement with text. The role of technology perhaps does not require such careful exposition: the media-specificity of the composition and reception of the text shape the understanding of the material, not only through the rhetorical functions but the ways in which hypertext has been deployed through creation and reception. If a format allows for transformations and reordering then this facilitates the more hypertextual aspects of the reading and writing process compared to a technology that restricts the time allowed. Technological mediations deeply shape the ways in which the audience can understand the text. Consider for example, the difference between composing a text on a typewriter as opposed to a word processor. The word processor facilitates revision, while the typewriter engages the author to ponder on what they want to write.⁵¹⁴ These forms are far from neutral and as well as influencing the ways in which composers or audience can engage with the text, they have an important rhetorical function. The previous chapter's discussion of the break between physical and digital literature demonstrates the way in which a technology choice can be deeply rhetorical. Digital literature has the appearance of being new through the rhetorical structures associated with the platform upon which it is built. This is apparent from the way in which digital literature is often driven by technological innovation rather than establishing generic conventions. Even though classic hypertext fiction has established generic conventions, it is not a popular platform to use, as there are new and exciting platforms to colonise.

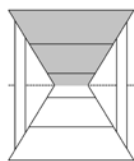


⁵¹⁴ Christina Haas, *Writing Technology: Studies on the Materiality of Literacy* (New Jersey: Lawrence Erlbaum Associates, 1996), 95–96.

Reading through the Literary Web



The Literary Web can be used to analyse individual editions of a text through the markings of its composition and reception histories and how these influence the reader's semiotic dimension. *Tristram Shandy* has also already been subject to a similar analysis in terms of the digitised versions available on Google Books, of which the 1955 Collins edition, an unremarkable edition as a print run, provides a comparison.⁵¹⁵ The 1955 Collins edition of *Tristram Shandy* provides an interesting case study, not only because of the peculiarity of the original text, but also because the item under study has been marked up by at least two previous owners and has traces of reading left in the book.⁵¹⁶ The edition is also peculiar because it does not state where the text originates from, although the bibliography notes Sterne's novel has "gone through very many editions since their first publication" ([490]). The cover of the recent Visual Editions *Tristram Shandy* estimates there have been over 120 editions of Sterne's notorious novel.⁵¹⁷ The document under study has a curious provenance history. Initially a book printed in the United Kingdom, Ruth Frances has been crossed out as the owner ([1]) alongside a marking that states the book costs five dollars. The location of this currency is confirmed by the address on the previous page, as next to the



comment, "Emma Knight [...] Call me, please [...] Only if you look like Johnny Depp," there is an address and telephone number from New Zealand ([i]). The title page is also signed with "Emma Knight 1989," which supplements the evidence found on the previous page in establishing an image of the book's prior audience as fairly young, a Johnny Depp fan, and probably reading the book for educational purposes. The gap between the publication in 1955 and 1989 indicates that Emma Knight purchased the book second hand. The physical manifestation offers further evidence for the Literary Web model as it is a cheap cloth-bound pocket hardback edition with tight binding and the type fills most of the page. The rhetorical dimension of the book indicates a cheap reprint for the mass market. This is an unspectacular book through its material traces, but this copy's unwritten biography, travelling the world from Britain to New Zealand and back, reveals a unique reception history.

Away from the specifics of this particular document's provenance, the book can be read in other ways. Most broadly, there is evidence of the printing process through the use of straight numerical signatures and "T.S" on the right-hand bottom corner to aid the binding of the text in the print house. This edition is a 32^{mo}, a binding that functions halfway between the luxury

⁵¹⁵ Paul Duguid, "Inheritance and Loss? A Brief Survey of Google Books," *First Monday* 12, no. 8 (2007), <http://firstmonday.org/ojs/index.php/fm/article/view/1972>.

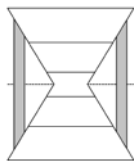
⁵¹⁶ Lawrence Sterne, *The Life and Opinions of Tristram Shandy Gentleman* (London: Collins, 1955) Henceforth TS in-text.

⁵¹⁷ Lawrence Sterne, *The Life and Opinions of Tristram Shandy, Gentleman* (London: Visual Editions, 2010).

editions represented by folios and quartos, and cheaper modern techniques. This book is bound in cloth rather than a paperback, so there is some durability designed for the book. Thus, we can read this edition as a middlebrow version of the text rather than a luxury or a cheap mass-market edition, which is why it has lasted in such a readable condition after fifty years. This edition may not appear exceptional, but the content deserves closer attention. Sterne plays with the materiality of the book by introducing non-textual elements that disrupt the rhetorical notions of what a novel should be. This was strange in Sterne's time, but his critical reception has accepted these quirks as part of the aesthetic value of the text. This does not mean that the first time reader would necessarily be aware of the book's materiality. A warning to the reader of the peculiarities of the novel, listing the most obtrusive, prefaces the 1955 Collins edition:

(1) In Volume 1, there are printed on pages 41 and 42 solid black slabs. (2) Volume 3, pages 179 and 180: In earlier editions these pages bore marbled slabs in colour. (3) Volume 4 contains no chapter 24. Furthermore there is a gap of ten pages, namely 233-242. (4) One blank page (357) occurs in the middle of chapter 38, volume 6. (5) Volume 9 contains two chapter headings (chapter 18 and 19, pages 470 and 41) for which there is no text. In the same volume two chapters headed "The Eighteenth Chapter" and "Chapter the Nineteenth" come between chapters 25 and 26. (TS, 3)

This paratext demonstrates the potential reader response for this particular edition as some other editions do not contain such a warning. If readers were unaware of such arrangements, they might believe their copy of the book is defective, therefore in order to allay such concerns before they arise, the publishers have framed the reader's understanding of the text (although it is unlikely the text will even be read, coming in the preliminaries of the book and tucked away on a verso). This list does not contain every oddity in the text from the perspective of an early twenty-first century reader such as the manicules incorporated into the main text (99 and *passim*), the page with interlinear glosses (142), extratextual notes from the editor stating "[1According to the original editions.]" (260) when discussing the volumes of the book which remain consistent, drop capitals to start chapters and the squiggles drawn onto the page that are photoset from an unacknowledged earlier edition of the novel. (359) The aforementioned "The Eighteenth Chapter" and "Chapter the Nineteenth" both appear in blackletter, a typeface rarely used in modern typography. This anachronism draws the reader's attention to the fact that they are reading a historical document and a fictional one at that.



When examining the black pages, we can see traces of the text's poor quality printing as the ink is not pure black. This is difficult to achieve through traditional printing processes but has become easier through the mechanisation of printing processes and finally possible in digital editions (figure 11). Interestingly, the Visual Editions version takes full advantage of digital printing methods but remediates the black mourning page as a double-page spread as a text with so much noise on top of the traditional layer of writing that the mourning page takes a new meaning in this edition. The faithfulness to

the original is further debased by the insertion of the comment “In the early editions a marbled page was inserted here.” (178-179) rather than the final results or a pictorial representation, instead the reader has to imagine. It should be noted that the text is in a single bound edition when the original was serialised in nine separate volumes written over a decade. This indicates the edition is not aiming for accuracy but rather achieving an approximation of the riches of Sterne’s text. Other paratext are just as confusing as the introduction is signed “H.d.D” with no indication of the identity of this author. Without a greater knowledge of the text’s transmission history, excluded from this particular edition, the reader must construct their mental model of the transmission history through comparison with other editions.

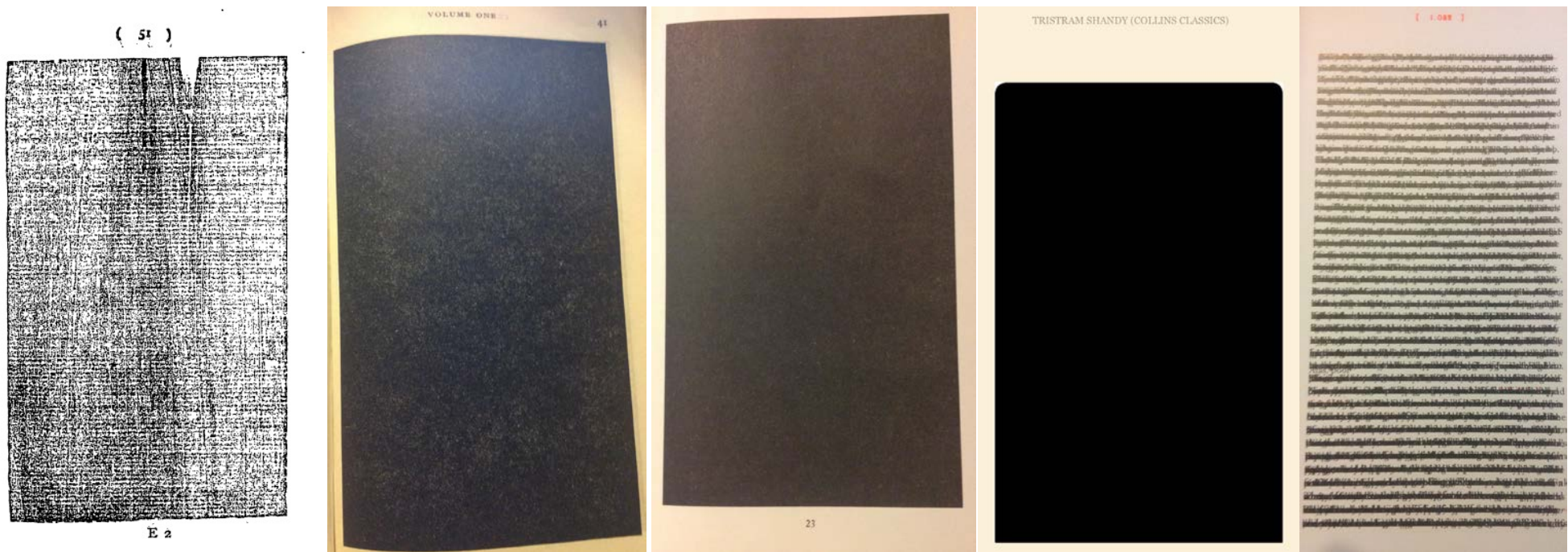


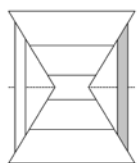
Figure 12 Print materiality for the black page of *Tristram Shandy* (L-R) in an early reprint (1760), Collins (1955), Norton critical edition (1980), Kindle eBook (2010) and Visual Editions (2010)⁵¹⁸

⁵¹⁸ Lawrence Sterne, *The Life and Opinions of Tristram Shandy, Gentleman*. ..., vol. Volume 1 (London, 1760), 51, <http://find.galegroup.com/ecco/infomark.do?&source=gale&prodId=ECCO&userGroupName=ucwinch&tabID=T001&docId=CW3314738436&type=multipage&contentSet=ECCOArticles&version=1.0&docLevel=FASCIMILE>; Lawrence Sterne, *Tristram Shandy*, ed. Howard Anderson (New York: W. W. Norton & Co., 1980), 23; Sterne, *Tristram Shandy* [Collins 1955], 41; Lawrence Sterne, *The Life and Opinions of Tristram Shandy, Gentleman* (London: Collins Classics, 2010), loc. 713; Sterne, *Tristram Shandy* [Visual Editions], 45.

The copy offers further marks of reception inside, as there are several sections which have been highlighted by pen in the margin. There are highlights in green pen for the introduction (12) and blue pen in the main text, with a particular focus on digressions and discourse on the volumes of the novel (67, 68 [2], 221 [2]). There are further marks of use apparent within the volume that add character such as a few torn pages (443-447), a mark of a stapler at the top of one page (71) and signs of dog-earing on various pages. The item exhibits many traits that offer us a useful entryway to the Literary Web model as one can see the influence of outside agents in the shaping of the text and the conditions of understanding in the 1950s led to the warning at the front of the text. More importantly, the text as *item* and *object* has a history that demonstrates its uses (and reuses as the book has had at least three owners), each of whom has left marks on the text that can be read to further understand the history of Sterne's fiction. Although it is possible to read this text wholly as a literary manifestation of *Tristram Shandy*, but much has been lost in this edition from Sterne's original novel. A copy-specific outlook offers richer evidence than exploring greater generalisations, and in this particular case, the text was ready made for such analysis due to the incursion of receptive agents as well as the note at the beginning observing the bibliographical anomalies of this edition of *Tristram Shandy*. Reading a text through the model of the Literary Web thus offers perspectives that would not traditionally be unveiled through a literary critical approach, although such a framework can be integrated into the Literary Web model.

Traces

There are many ways in which we can see traces of the Literary Web in traditional literary criticism. The linguistic links between different texts, referred to as allusion, quotation,



intertextuality and a host of other names establishes connections at the microlevels. Discussion of authorship, genre or periods establishes linguistic connections at a meso- or macro-level. Aarseth argues these links are essential for a reader to understand a novel as “you can be an expert chess player without

playing any other game, but to understand even a single novel you will need to have studied numerous others.”⁵¹⁹ Aarseth is expanding upon the ludological-narratological debate he instigated with the publication of *Cybertext* in 1999 and suggests that one can become an expert in a game without having to know about the existence of any other game, while novels require a deeper understanding the discourse network to truly become an expert reader of one book. This understanding is built upon an understanding of the rhetorical structures in the novel such as generic, authorial and historical conventions. Conversely, chess can be mastered through

⁵¹⁹ Espen J. Aarseth, “Genre Trouble: Narrativism and the Art of Simulation,” in *First Person: New Media as Story, Performance, and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan (Cambridge: MIT Press, 2004), 48.

studying the structures of the game itself without recourse to external influences, although knowledge of other games will undoubtedly help.⁵²⁰ There is a corollary, as each reader will bring a different experience, attitude and ideology to reading the same text. Jonathan Rose identifies this as the “receptive fallacy,” as we cannot assume that all readers will use and understand a text in a homogenous way.⁵²¹ Jackson further complicates this formulation by reminding us that the *same* reader can engage with a text at different times with a different mood or knowledge.⁵²² McGann’s rhetorical dimensions help to shape the reader’s understanding of the text and form vital evidence for understanding the semiotic dimensions of a text. Arguments that revolve around whether a particular text is a science fiction or fantasy novel, depending on the tropes the reader has identified with exemplars of the form, are an example of this phenomenon. This is at an extra-textual level, whereby paratext such as the cover of the book will alert readers to that contextual knowledge required for the text. Marketing for the novel utilises this linguistic linking with blurbs that suggest “It’s Thomas Pynchon meets Stephanie Meyers” or “If you enjoyed Enid Blyton, you’ll *love* Mark Danielewski’s new thriller!”⁵²³ Even if the link is not there, the reader will often assume much about the text from the comparison made, assuming the reader knows the authors. Often, if they do not know the author’s work well, this can distort the perception of the text, since who would want to read something similar to Jonathan Franzen? The marketing tool of endorsements can have a similar effect as if a certain author is quoted on the jacket comparisons are inevitable. The use of pseudonyms and anonymous manuscripts demonstrates the attachments to certain names. The recent scandal over JK Rowling penning crime fiction under the pseudonym Robert Galbraith demonstrates the pervasive connection between the author and their work.⁵²⁴ The author’s name functions as a rhetorical structure framing the text under the discourse associated with the author.

These connections also form through other tangible bibliographical forms. Familiar rhetorical structures emerged with the evolution of the book and have created networks that are ingrained in our understanding of print culture. As McKenzie demonstrates, blank books used for marketing purposes still contain material traces of the contents’ genre.⁵²⁵ A reader can make

⁵²⁰ The greatest advantage comes instead from learning sequences of moves within the game that give the player a competitive advantage.

⁵²¹ Jonathan Rose, “Rereading the English Common Reader: A Preface to a History of Audiences,” *Journal of the History of Ideas* 53, no. 1 (1992): 49.

⁵²² H. J. Jackson, *Marginalia: Readers Writing in Books* (New Haven and London: Yale University Press, 2002), 96–97.

⁵²³ C.f. Claire Squires, *Marketing Literature: The Making of Contemporary Writing in Britain* (Basingstoke: Palgrave Macmillan, 2009), 121.

⁵²⁴ The news was initially broken by Richard Brooks, “Whodunnit? JK Rowling’s Secret Life as Wizard Crime Writer Revealed,” *The Sunday Times*, July 14, 2013, 74620241, Newsbank.

⁵²⁵ D. F. McKenzie, “What’s Past Is Prologue: The Bibliographical Society and History of the Book,” in *Making Meanings: “Printers of the Mind” and Other Essays*, ed. Peter D. McDonald and Michael Suarez (Amherst and Boston: University of Massachusetts Press, 2002), 259–261.

connections between different texts by examining their materiality and some of these features can be a very powerful connection, such as the impermanence of trade paperbacks in comparison to Shakespeare's First Folio. These expectations lead to connections between various forms. If strong connections formulated at a material level form the macro-structure, the historical development of layout of the novel and poem constitute a meso-scale layer of connectivity as they are less stable and more readily delineated by careful counterexamples. The typographic conventions of poetry distinguish the form from prose. These paratext and layout conventions govern how we subconsciously choose to read the text. Not only do these conventions aid the organisation of books, they also demonstrate relationships between people within the text.⁵²⁶ The bibliographical traces remain as important to understand the production and reception of the text as much as the linguistic traces. One form should not be subservient to the other and a deeper understanding of the interdependence between the two will offer a richer and deeper understanding of the Literary Web model.

The primary evidence for connections between texts can be found in analysing the ancillary networks created by informed and enthusiastic readers. For example, citation network analysis methods have allowed academics to make explicit the ancillary networks formed by academic discourse.⁵²⁷ Data mining methods allow us to see canon formation of scholarly articles, but this only works on formalised networks between ancillary articles. These networks usually explore how the secondary material networks with itself; a more interesting example for the Literary Web is how this material links primary sources. The *Nabokov Online Journal (NOJ)* offers a concentrated example of citation patterns to primary sources in a specialised field. Although Nabokov published over fifteen novels as well as a plethora of poems, short stories, plays and essays, Nabokov criticism focuses on a relatively small section of Nabokov's works. The six most quoted sources (*Pale Fire*, *Lolita*, *The Original of Laura*, *Strong Opinions*, *Speak Memory* and *The Gift*) in the last six years represent eighty per cent of references to Nabokov's published works in the *NOJ*. This list contains his three most highly regarded novels,⁵²⁸ the controversially published *TOoL* and two non-fiction books: an autobiography and collections of interviews that offer Nabokov's vocal opinions on many issues. There are further sorting mechanisms at the level of the text quoted, as particular snippets are referred to frequently including the opening of the poem, "Pale Fire,"⁵²⁹ and Nabokov's confession that he does not believe in time.⁵³⁰ These

⁵²⁶ Michelle R. Warren, "The Politics of Textual Scholarship," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 125.

⁵²⁷ See for example Jonathan Goodwin, "Citational Network Graph of Literary Theory Journals," *Jonathan Goodwin*, June 20, 2013, <http://www.jgoodwin.net/?p=1223>.

⁵²⁸ N.B. *The Gift* is his only Russian novel to be frequently cited in English criticism in the corpus.

⁵²⁹ Vladimir Nabokov, *Pale Fire* (New York: G. P. Putnam's Sons, 1962), 33; Tiffany DeRéal and Matthew Roth, "John Shade's Duplicate Selves: An Alternative Shadegan Theory of *Pale Fire*," *Nabokov Online Journal* 3 (2009): 1–36, http://etc.dal.ca/noj/volume3/articles/06_Roth.pdf; Emmy Waldman, "Who's Speaking in Arcady? The Voices of Death, Dementia, and Art in Nabokov's *Pale Fire*," *Nabokov Online Journal* 4 (2010); René Alladaye, "Through the

quotations will likely retain a privileged position in Nabokov scholarship as readers navigate the text through the ancillary networks. These citation network methods are becoming available to the study of non-academic readers as track backs on blogs and the complex network politics of Twitter, which create two-way networks for users to follow.⁵³¹ For example, it is possible to search for a popular phrase, such as the first line of *Pale Fire*, “I was the shadow of the waxwing slain” through searches on Google Books, Twitter and other disparate sites to find the conversation growing round these topics. Such a search reveals the memeification of the phrase in wider popular literary culture far beyond the scope of the current project.

Connections between texts grow as more critics refer to the links between them. The previously mentioned connection between Homer’s *Odyssey* and James Joyce’s *Ulysses* has been emphasised repeatedly in Joycean scholarship.⁵³² Although the title of Joyce’s novel refers to the protagonist of the Latin adaptation of Homer’s epic, the much-lauded correspondences between Joyce and Homer’s texts do not appear explicitly in the first edition. The titles of the chapters connecting the two texts only appeared in later editions, although it is apparent from Joyce’s correspondence about the development of the novel that the comparison was intentional. The disciplines of book history and bibliography diverge in their methods with understanding these tensions. Bibliographers would consider the titles as separate from the copy-text and thus outside of useful text, while book historians would consider how this ancillary material complicates our understanding of the novel. The reading has become so pervasive not because of Joyce’s intentions, but rather because of the critical weight and referential power of making the connection between the two.⁵³³ A book-historical consensus has replaced a bibliographical form of canonicity. Although the connection is contested, the introduction of the titles to schemata of the novel included in student editions has added gravitas to the dominant interpretation. The mechanisms of peer-review and citations demonstrate the prevalent opinions in the community rather than appealing towards the author’s intentions. Differences in reading manifest a range of interpretations of the text that could only be viewed as paradigmatic through consensus. The evidence of Joyce’s intentions suggests that the parallels between *Ulysses* and Homer’s *Odyssey* should merit close attention, but this does not stop other

Looking-Glass - Pale Fire as Anamorphosis: An Alternative Theory of Internal Authorship,” *Nabokov Online Journal* VI (2012).

⁵³⁰ Vladimir Nabokov, *Speak, Memory: An Autobiography Revisited* (London: Penguin Classics, 2010), 106; Priscilla Meyer et al., “Teaching Nabokov,” *Nabokov Online Journal* 2 (2008); Nina Khrushcheva, “Death Is But a Question of Style,” *Nabokov Online Journal* 1 (2007); Emma Hamilton, “*Look at the Harlequins!*: A Corpus Compendium,” *Nabokov Online Journal* 2 (2008).

⁵³¹ Colin Gifford Brooke, *Lingua Fracta: Towards a Rhetoric of New Media* (Cresskill: Hampton Press, 2009), 53.

⁵³² The MLA International Bibliography offers 47 results of articles referring to the subject author of both Homer and James Joyce.

⁵³³ In fact, Joyce refused to include a chart of Homeric correspondences into the Random House edition of the text in the 1930s. See Spoo, *Without Copyrights*, 253.

interpretations of source material from being developed on an individual level and one day superseding the dominant interpretation within the Joyce industry.

These paradigms existed before the professionalisation of the field of criticism. Siegert considers “Canon-making [...] the central activity of letters,”⁵³⁴ an activity that has been undertaken for centuries prior to the rise of the professional critic. This is the start of the ancillary network that became the modern critical industry and thus the start of one of the greatest outside shapers of the literary. It is telling that after the initial claims that hypertext would disrupt the notion of the canon,⁵³⁵ Astrid Ensslin’s *Canonizing Hypertext* demonstrated hypertext still fits into the traditional structure of the canon. Rather than dismissing canons and the most prominent marker of canonicity, the anthology; the literary web as hypertext appropriates them as another way in which close bonds can be formed on an ancillary level. Graph theory suggests that highly connected nodes enable the formation of stable networks, as long as the network does not become overly reliant on them. For such a large network to exist, it necessarily has to favour such connections as in Broder *et al*’s model (figure 14).

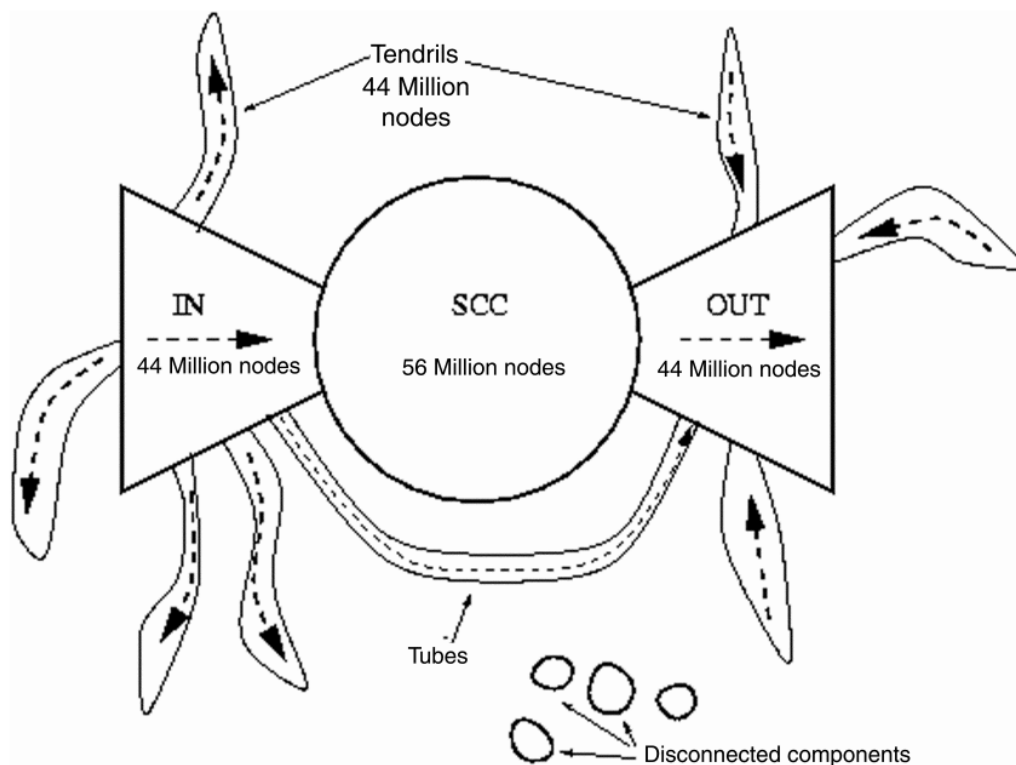


Figure 13 Broder *et al*’s original generalised diagram⁵³⁶

Broder *et al* describe the generalisation of linking on the Web as containing an incestuously well-connected core, which link to each other in order to maintain this close connection. The core is supplemented by inward links that have not yet become accepted by the in-group; and they refer

⁵³⁴ Alvin Kernan, *Samuel Johnson & the Impact of Print* (Princeton: Princeton University Press, 1987), 158.

⁵³⁵ C.f. Nelson’s “How Hypertext (Un)Does the Canon.” Address to the MLA, Chicago, 28 Dec. 1990.

⁵³⁶ Andrei Broder *et al*, “Graph Structure in the Web,” *Computer Networks* 33, no. 1–6 (June 2000): 309–320.

to older links that do not link back. This large connected network is supplemented by islands that have not yet connected to it. It is trivial to map the canon onto a similar model (figures 13-14) given the diachronic development of the canon. If we restrict intertextuality to a model of influence, the basic structure of the canon as scale-free network becomes apparent. This avoids obfuscating the structure through ancillary links. A model of influence dictates a temporal succession, as Shakespeare cannot influence Chaucer. Older texts cannot cite texts published after them. The phenomenon of rediscovery and posthumous publications complicates the usual transmission by skipping works published in the interim such as the rediscovery of Mikhail Bulgakov's *Master & Margarita*. The professionalisation of literature with the rise of copyright and the development of the novel led to a period of closer textual contact that has since formed the inner connected core. Newer texts refer to this tradition and thus form the in-links until they have become a central component of a newer canon. This leaves the outliers and genre fiction that remain in separate islands away from the main canon.

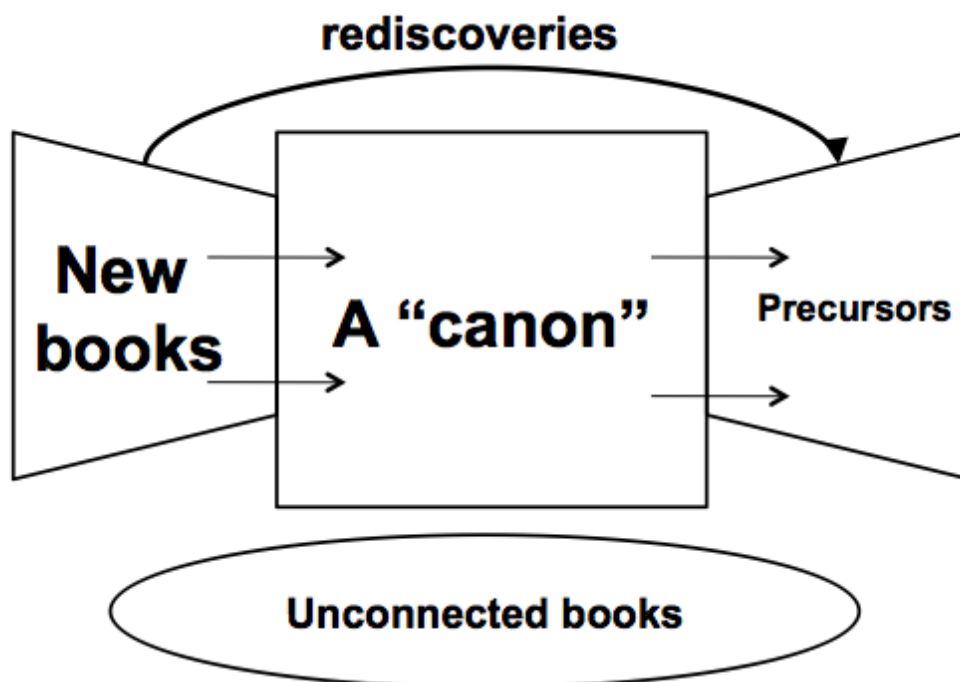


Figure 14 A canon as scale-free network

Leah Price argues that modern canon formation began with the rise of the eighteenth-century anthologies, which set “the rules by which future literature would be transmitted, notably the expectation that every anthology-piece bear a signature and that its signatory be dead.”⁵³⁷ This establishes the inner connected core of the canon model posited above that have been selected as they have survived the test of time, while contemporary authors may only be exciting at the time of publication. The cultural capital of prize winning is an exemplar of this phenomenon as

⁵³⁷ Leah Price, “Cultures of the Commonplace,” in *The Book History Reader*, ed. David Finkelstein and Alistair McCleery, 2nd ed. (Oxford: Routledge, 2006), 327.

long-term popular literary authors who never won the Nobel Prize such as James Joyce and Vladimir Nabokov have attained long-term canonisation, while Ivan Bunin has not necessarily enjoyed the same reception. Anthologies form connections physically through binding as a form of “proximate intertextuality.”⁵³⁸ Not only did the anthologies tell readers who to pay attention to, but also what parts of their texts to read carefully: “By alternating excerpts with plot summaries, they [Victorian reviews] encourage readers and writers alike to think of texts as accumulations of freestanding beauties strung together by longer stretches of narrative padding.”⁵³⁹ The narrative becomes a link for the aphorisms the reader can mine from the reviewers and anthology, establishing dominant structures of interest, similarly to the role of quotations in literary criticism. Price suggests that “the anthology trained readers to pace themselves through an unmanageable bulk of print by sensing when to skip and where to linger. In the process, its editors set an example for [...] stop-and-start rhythm [...] reading.”⁵⁴⁰ Anthologies trained the readers what to read as well as what to ignore, creating canonical prejudices that still exist today. In other words, the “stop-and-start rhythm” of receptional hypertext reading as the reader navigates the text in a way that creates a new semiotic dimension on top of the original meaning.

Similar canonisation occurs at the level of the catalogue. Roger Chartier suggests this was an essential part of understanding books as “inventorying titles, categorizing works, and attributing texts were all operations that made it possible to set the world of the written word in order. Our own age is the direct heir of this immense effort motivated by anxiety”⁵⁴¹ There are several Short Title Catalogues (*STCs*) that exist as finding aids for rare books as many copies only exist in a few major research libraries. Pollard and Redgrave’s *Short Title Catalogue of Books Printed in England, Scotland and of English Books Printed Abroad 1475-1650* represents one of the earliest and most impressive *STCs*. This *STC* was a social enterprise, comprising many individuals and libraries to catalogue the availability of these materials in the Anglo-American and European world.⁵⁴² Such an endeavour was difficult with problems such as “Marginal items.... [which] have been treated very inconsistently, there being some disagreement on how much English is enough.”⁵⁴³ A sample entry demonstrates the multiple dimensions connected to this cataloguing and the complex ways in which it can be seen as a macro-level bibliographic network of texts in the given era:

⁵³⁸ Jeffrey Todd Knight, *Bound to Read: Compilations, Collections, and the Making of Renaissance Literature* (Philadelphia: University of Pennsylvania Press, 2013), 82.

⁵³⁹ Price, *The Anthology*, 139.

⁵⁴⁰ *Ibid.*, 4–5.

⁵⁴¹ Roger Chartier, *The Order of Books: Readers, Authors, and Libraries in Europe between the Fourteenth and Eighteenth Centuries*, trans. Lydia Cochrane (Stanford: Stanford University Press, 1994), vii.

⁵⁴² A W Pollard et al., *A Short-Title Catalogue of Books Printed in England, Scotland, & Ireland and of English Books Printed Abroad 1475-1640*, vol. 1: A-H (London: The Bibliographical Society, 1986), xv–xviii.

⁵⁴³ *Ibid.*, 1: A-H:xxiv.

22273 **Shakespeare, William.** Mr. William Shakespeare's comedies, histories & tragedies. Published according to the true original copies. fol. *Printed by Isaac Jaggard, and Ed. Blount.* 1623. [Colophon:] (*Printed at the charges of W. Jaggard, Ed. Blount, J. Smithweek, and W. Aspley, 1623.*) Ent. to Blount a. I. Jaggard 8 no. L.O.C.D.E +; F.HN.HD.N.NY. +
One o copy was delivered by the Stationers' Co. and sent for binding 7 Feb. 1624⁵⁴⁴

This document is Shakespeare's famous First Folio. The number indicates its position in the alphabetical index of all the books eligible to be included in the *STC* rather than chronological order. After naming the author, the first part of the entry reveals the title page's contents, the fact that it is a folio and the Stationers' Company entry, which is complemented by the information in the second paragraph. The middle section indicates that one can find copies in the British Library, the Bodleian Library, Cambridge University Library, Trinity College, Dublin, National Library of Scotland and other British libraries, as well as the Folger Shakespeare Library, Huntington Library, Harvard, Newberry Library, New York Public Library and other American libraries. The *STC* functions as both a serendipitous connector between books published over 175 years, but also between the elite research libraries of the world. The *STC* offers a reminder of the social agents of the book trade through mapping out the colophon. Through the short cataloguing details afforded by the *STC*, we can see connections at the macro-scale of the corpus of early modern books and simultaneously reinforce the hegemony of elite libraries at the meso-level as they are repeatedly referenced throughout the book as the first port of call for rare books rather than smaller provincial libraries. The traces of the Literary Web demonstrate that such a model is easily applied to a single text and its interrelationships, but a more powerful and extensible model is required to truly understand the mechanics of the Literary Web.

Forking

Despite the Literary Web's focus on the individual experience, the model is scalable. The "fork," a form of bi-directional hypertext, whereby an author acknowledges the precursors of their new text in the context of the original. The fork links back to the original package just as a revised edition of a text supplements a previously published text. If the Literary Web is to scale, these ancillary networks must be included, such as literary criticism, to ensure that the levels of the Literary Web are zoomable. The fork also allows a sophisticated framework in which one can bring in the influence of different texts and its replication and afterlife in a unified model without reducing the role of reception to secondary or tertiary importance. Forking can occur through any of McGann's dimensions and represents a powerful tool for analysing connections between texts. Moreover, the original diagram of the Literary Web, just as with the Internet

⁵⁴⁴ *STC II*, STC22273, 325

hourglass stack, is not static and there are parts of it that change over time. Forking can occur through any of the dimensions outlined in the previous chapter—material, structural and executable—to different effect and it is often a result of the composition and reception of a text. The forking metaphor has use beyond other user's disruptions of the text, as the transmission history of the text takes the form of a series of forks. The text is bound to mutate through reprinting as "the work was not a stable entity, but the sum total of an expanding array of representations."⁵⁴⁵ The stability of the text is further challenged by active reading, "For any act of reading to become part of the historical record, it needs also to be an act of authorship and leave written traces."⁵⁴⁶ Within the FRBR framework, summaries, reviews, criticisms and other forms of description and adaptation function as derivatives of the original work.⁵⁴⁷

As the Literary Web model champions the single experience, it is no surprise that there is a variety of ways that a text can be forked that allow for a heterogeneous model rather than stating there is a single form of forking. The sections of the Literary Web can be adapted into a taxonomy of forking. The forking can be structural, personal, technological, material, intertextual, fake or a skewed fork. The greatest number of forks occurs at the copy-level as readers personalise their own copy of the text. The most active readers are those who transform the text through writing rather than remain subservient to the original. Sherman argues:

The most striking indication that printing did not automatically, or immediately, render readers passive is the survival of what might be described as radically customized copies - copies that is, where the text is not just annotated but physically altered, sometimes even cut up and combined with other texts. There is evidence of reading so active and appropriative that it challenges the integrity of the entire printed book⁵⁴⁸

The physical manipulation of the documentary dimension of the text altered the future reputation of the text although the ideal of early bibliophilia was of clean and perfect copies of texts, destroying precious provenance evidence.⁵⁴⁹ These bibliophiles forked the reputation of the text in a rhetorical manner as early modern poets such as Shakespeare and Congreve were scrubbed clean of marginalia and rebound in luxurious covers rather than the cheap bindings afforded to the lowly status of playwrights as print-based authors in the Renaissance. These personal texts and the use of heavy marginalia are problematic for models that rely on various editions, but this new physical manifestation, as the documentary dimension refers to only a single dimension acknowledges their importance and utility for a multiple number of composers and consumers. Moreover, the active reader has been the dominant paradigm in reading out

⁵⁴⁵ Secord, *Victorian Sensation*, 111.

⁵⁴⁶ *Ibid.*, 379.

⁵⁴⁷ Tillett, *What Is FRBR?*.

⁵⁴⁸ Sherman, *Used Books*, 9.

⁵⁴⁹ Knight, *Bound to Read*.

loud and other historical methods of reading beyond passive in-take. The study of forking and particularly the volume of forking can reveal uses of the book beyond the survival imperative noted by Barker and Adams. With a text that has been reused in many contexts, or even one context comprehensively but is otherwise lost or has not been reprinted, the receptional history of this text and the study of its forking can be invaluable. The lifespan of novels has historically been short unless they have sold well enough to be reprinted or lucky enough to be revisited through later critical appraisal. Most novels receive a different fate: “the bulk of these novels were soon left to gather dust, summarily disposed of, or returned, after brief reading, to the fashionable circulating libraries for which so many of them were chiefly written”⁵⁵⁰ Even if texts are not lucky enough to be reprinted, extant copies can demonstrate the use of the text on the level of the personal fork. Sherman suggests that renaissance readers were apt at the personal fork:

The period’s readers, writers, and speakers were well-trained in textual recycling, and one of their most powerful and pervasive tools was the commonplace book, a collection of notes (gleaned from reading and other forms of research) that the compiler might want to use at a later date. These quotations, paraphrases, anecdotes, opinions and other forms of information were gathered under more or less systematic headings [...] that would allow their compilers to retrieve a wide range of relevant materials for informed and eloquent discourse on any number of subjects⁵⁵¹

Although these did not permanently alter an entire printing of the text, they have been forked by later readers and used as exemplars of reception in later writing, thus marginalia and other material reuses of texts represent the largest corpus of evidence of forking throughout history.

A technological fork is often more substantial and can take two forms: (1) the technology is manipulated in order to create new content; or (2) the contents are transferred and transcribed from one medium to another. Caleb Kelly defines cracked media, an example of the first form of technological fork, as “the tools of media playback expanded beyond their original function as a simple playback device for prerecorded sound or image. ‘The crack’ is a point of rupture or a place of chance occurrence, where unique events take place that are ripe for exploitation toward new creative possibilities.”⁵⁵² Remixing print media functions as cracked media which predominantly works in the physical media rather than digital, as it “transform the products of old media to generate new works. What was considered sealed and complete has been taken apart and transformed into new variations of the original or even complete unique outcomes.”⁵⁵³ Altered book sculptures function as cracked books as they rupture the reading

⁵⁵⁰ James Raven, “Britain, 1750-1830,” in *The Novel Volume 1: History, Geography, and Culture*, ed. Franco Moretti (Princeton: Princeton University Press, 2006), 454.

⁵⁵¹ Sherman, *Used Books*, 128–129.

⁵⁵² Caleb Kelly, *Cracked Media: The Sound of Malfunction* (Cambridge: MIT Press, 2009), 4.

⁵⁵³ *Ibid.*, 312.

experience into a confrontation of the aesthetic value of the materiality of the book itself. Forking the Literary Web works on this material level when the indeterminacy of the text is being amplified. In a similar manner, “the abstract materiality of these infrastructures is labile and mutable and offers diverse opportunities for manipulation, modulation, and control. Hackers excel in exploiting the cracks in programmable systems, but a practical knowledge of how a pricing structure operates, for instance, can also let you run circles around your service provider, while it runs rings around you.”⁵⁵⁴ The affordances of cracked books have been previously explored by the development of artists’ books that push the limits of the formats to their logical conclusion, while the eBook marketplace is being tested currently under similar conditions. The reflexive technology fork enables readers to understand the limit of the formats of reading as well as the convergence between different technologies.

It is also possible to fork an imaginary text. One such example is literary forgery, which forks the author’s reading material from a non-existent source. Ruthven argues that “Literary forgery is criticism by other means.”⁵⁵⁵ Forgery forks reputation and status rather than a particular text, although this broadens the field of knowledge. Henry Ireland, an infamous eighteenth century forger of a plethora of legal documents pertaining to Shakespeare was able to forge two new Shakespeare plays—*Vortigen* and *Henry II*—through the unerring belief and hopes of his contemporaries that the Bard’s manuscript documents would eventually be uncovered.⁵⁵⁶ Remediation is an interesting way of skewed or misappropriated forking. As Alan Galey notes, this is particularly important for shaping the reputation of Shakespeare since “the digitization of Shakespeare’s texts thus represents the meeting of two culturally constructed essentialisms: Shakespeare idealized as transmissible heritage sublimated into digital networks as idealized communications channels.”⁵⁵⁷ Galey discusses reputation and cultural capital once more as an important part of forking, and as such, with regards to Shakespeare, his works are forked at the point of modern reception rather than contemporary reception. This figure of Shakespeare has been developed as an idealisation of what twenty-first century readers want the bard to be like, rather than based on historical accuracy. McGann’s dimensions can be useful for understanding this as we can separate the social or rhetorical Shakespeare from that which is present within the documentary evidence available to the contemporary reader. It is very unlikely that the contemporary reader situates Shakespeare as the First Folio or a perfectly edited version of his corpus.

⁵⁵⁴ Matthew Fuller and Andrew Goffey, *Evil Media* (Cambridge: MIT Press, 2012), 15.

⁵⁵⁵ Ruthven, *Faking Literature*, 171.

⁵⁵⁶ Patricia Pierce, *The Great Shakespeare Fraud: The Strange, True Story of William-Henry Ireland* (Stroud: Sutton Publishing, 2004).

⁵⁵⁷ Alan Galey, “Networks of Deep Impression: Shakespeare and the History of Information,” *Shakespeare Quarterly* 61, no. 3 (2010): 308.

Another imaginative forking is that of the deformative fork such as Tom Phillips' *A Humument*, which forks the materiality and rhetoric of William H. Mallock's Victorian novel, *A Human Document*, rather than the actual content. Phillips conceptualised the project as a methodology of transforming the book in the sense of William Burroughs's "cut-up" method. His search for a book was that it had to be cheap and obscure and thus he landed upon Mallock's *A Human Document*, a Victorian novel toiling in obscurity.⁵⁵⁸ Mallock's fiction has received an afterlife as the base text of Phillips' deformance and has received a far greater notoriety through this appropriation than a reprinting would have achieved. The reputation of Mallock's text has been enhanced through this forking as a source of an art project with considerable cultural capital. The forking works in a two-way manner as the remediation affects the cultural afterlife of the original. As the novel has not merited attention worthy of large reprinting, this forking has had some interesting unintended consequences. A search for Mallock's novel on Amazon.com offers fifteen positive matches for the novel.⁵⁵⁹ All these editions are zombie Print-on-Demand (POD) editions that are only physically created once they have been purchased.⁵⁶⁰ The top match, published by "Nabu Press" and retailing at \$21.31 for the paperback, features a blurb with a warning:

This is a reproduction of a book published before 1923. This book may have occasional imperfections such as missing or blurred pages, poor pictures, errant marks, etc. that were either part of the original artefact, or were introduced by the scanning process. We believe this work is culturally important, and despite the imperfections, have elected to bring it back into print as part of our continuing commitment to the preservation of printed works worldwide. We appreciate your understanding of the imperfections in the preservation process, and hope you enjoy this valuable book.⁵⁶¹

Nabu Press specialise in print-on-demand books from the public domain which have been scanned but not post-processed. Essentially, the \$21.31 is paying for the printing as much of the rest of the value of the book has already been created elsewhere or has not been properly undertaken by editors in the post-production process. The majority of the other texts available on Amazon fit into similar patterns of zombie textuality. Most of these texts replicate the original but include elements of post-processing such as OCR in order to set the text in a readable manner. The Elibron edition takes a different approach as it does not attempt to make the machine-readable but rather includes a facsimile. The edition is equally strange, however, as the colophon states "This Elibron Classics book is a facsimile reprint of a 1892 edition [sic] by Cassell Publishing Company, New York" but the final verso states, "Printed in Great Britain by

⁵⁵⁸ Drucker, *Century of Artists' Books*, 109.

⁵⁵⁹ Accessed 18th November 2013.

⁵⁶⁰ C.f. Whitney Trettien's analysis of zombie POD editions of John Milton's *Areopagitica* in "A Deep History of Electronic Textuality: The Case of Eng/ish Reprints Jhon Milton Areopagitica" 7, no. 1 (2013), <http://www.digitalhumanities.org/dhq/vol/7/1/000150/000150.html>.

⁵⁶¹ Amazon, Inc., "A Human Document, a Novel," *Amazon.com*, 2013, <http://www.amazon.com/dp/1177636468/>.

Amazon.co.uk, Ltd.”⁵⁶² There is always at least one degree of digitisation or representation away from the original text and this zombie status reflects upon the reanimation of Mallock’s original text with the rise of Phillips’ fork.

This chapter has outlined a model for the Literary Web as a hybrid model between book history and hypertext. It builds upon Jerome McGann’s distinction between six dimensions for marking up a text, with a particular focus on the semiotic dimension; and focuses on the relationship between production and reception and the central importance of the text in this transmission history. The model suggests that there are hypertext processes throughout the production and reception of text rather than an artefact within the text. Good hypertext design facilitates the possibilities of exploring different semiotic dimensions at those points of composition and reception. Although various agents of composition are represented within the model, the focus is on reception and the individual experience of understanding text. The model is scalable through the concept of the fork, which allows the original to retain its design while creating new versions. The final two chapters of the thesis will test the Literary Web model. The first will primarily assess the Literary Web from the perspective of compositional processes and how this effects the reception through applying the model to Vladimir Nabokov’s *Pale Fire*, while the final chapter will return to the issue of compositional and receptional hypertext and discuss the ways in which receptional hypertexts are beginning to emerge through the reuse of compositional elements.

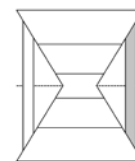
⁵⁶² William Hurrell Mallock, *A Human Document* ([s.l]: Elibron Classics, 2005).

Chapter 4: The Read-Write Afterlife of Vladimir Nabokov's *Pale Fire*

What stunning conjuring tricks our magical mechanical age plays with old mother space and old father time!⁵⁶³

In order to clarify the abstract model of the Literary Web, the present chapter will consider Vladimir Nabokov's *Pale Fire* as a case study. *Pale Fire* offers Nabokov's fictionalised perspective on the book trade and an indeterminate narrative that has lured readers into recreating the work in order to appreciate its form. This analysis will test the Literary Web's durability to analyse a single text's afterlife in a read-write environment, as these digitisations and appropriations fork the text and influence the reader's interpretation. These transformations occur on the three axes of physical-digital convergence identified in chapter two, in various forms including an audiobook (material), artists' book (material and structural), and digital edition (material and executable). As Alan Galey and Stan Ruecker have argued, digital prototypes and critical editions of literary texts function as arguments akin to an essay on the text through the editorial decisions made and their influence on the perception of the original object.⁵⁶⁴ Physical and digital transformations of *Pale Fire* argue that the novel's indeterminate structure must break free of its codex form in order to be fully understood. Unfortunately, the ambitions of many of these prototypes was not fulfilled by a completed object, but their traces reveal much about the reception of the text as part of digital culture and how a read-write environment can be created for the Literary Web through forking. These disparate editions greatly influence the reception of the original work in the way in which they allow the reader to navigate the hypertext elements of the text.

It is clear through a cursory glance at *Pale Fire*'s external paratext why many readers have been enchanted by its form. The inner jacket flap of the first edition of *Pale Fire* states "PALE FIRE is a truly unique book. Only Vladimir Nabokov could have created it [...] It is unlike any novel you have ever read."⁵⁶⁵ Despite the marketing, *Pale Fire* is not *sui generis*; Stephen Blackwell identifies the text's genre as a travesty of a scholarly commentary, which has antecedents in Alexander Pope's "*Dunciad* [*Variorum*]", with elements of *A Tale of a Tub* and the *Memoirs of Martinus Scriblerus*," and Gottlieb Wilhelm Rabener's *Hinkmars*

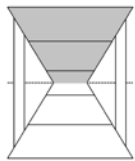


⁵⁶³ Nabokov, *Pale Fire*, 255; Future references will appear in-text. Following Boyd's convention, "citations will be in the form F, P.xxx, C.xxx, I (for Foreword, Poem, Commentary, and Index) so that readers with any edition can locate a reference; page numbers... are added, if needed, within the Foreword or long notes in the Commentary: 'C.130, 125' means 'note to line 130; Vintage (or Putnam's) page 125.'" See Brian Boyd, *Nabokov's Pale Fire: The Magic of Artistic Discovery* (Princeton: Princeton University Press, 2001) 266n1.

⁵⁶⁴ Alan Galey and Stan Ruecker, "How a Prototype Argues," *Literary and Linguistic Computing* 25, no. 4 (2010): 405–424.

⁵⁶⁵ Nabokov, *Pale Fire*.

von Repkow *Note obne*, a commentary with no original text.⁵⁶⁶ René Alladaye has noted Nabokov's translation and commentary to *Eugene Onegin* anticipates *Pale Fire*, although Nabokov's long working period on *Eugene Onegin* only saw publication two years later. Alladaye notes a structural similarity between the two works, as the ratio of poem to commentary is roughly equal.⁵⁶⁷ Despite this passing similarity with a project that garnered the most controversy in his oeuvre outside of *Lolita*,⁵⁶⁸ *Pale Fire* represents Nabokov at the height of his powers and fame as Nabokov finally gained the international fame he yearned for when Graham Greene chose *Lolita* as one of his books of the year.⁵⁶⁹ Nabokov responded to his new-found international fame by critiquing the Anglo-European book trade as a central part of his post-*Lolita* output (excluding *Pnin*). The majority of his protagonists are authors or agents of the book trade, which reached its pinnacle in his last published novel, *Look at the Harlequins!* in which Nabokov burlesques his own bibliography.⁵⁷⁰ Nabokov's most poignant use of the book trade, however, comes earlier in his career, while he was writing *Lolita*, *Pale Fire* and *Ada*, the three novels in which Nabokov most intensely scrutinises the agents of print outside of the author. Almost every page of these novels makes reference to the processes of composition and reception. The agents of the book trade's appearance highlight the novels' "unfinished" quality, with the novels presented to the reader without final copyediting, as in Humbert Humbert's note for the printer



of *Lolita*: "Lolita, Lolita, Lolita, Lolita, Lolita, Lolita, Lolita, Lolita, Lolita. Repeat till the page is full, printer," which is left ignored.⁵⁷¹ *Ada*'s fictional editors Ada and Van Veen have also presented their final text with marginal comments to each other intact, such as "Hue or who? Awkward. Reword! (marginal note in Ada Veen's late hand)" embedded directly into the narrative.⁵⁷² The theme of the book trade is more central to *Pale Fire* than the two other books. Unlike *Lolita* and *Ada*'s embedded theme of the book trade which must be teased out through close rereading, *Pale Fire* revolves around a literary heist and the politics of publishing and creating a scholarly edition of a posthumous text. It is because of this complex interplay and discussion of the book trade that *Pale Fire* is an exemplar of the application of the Literary Web to close reading.

⁵⁶⁶ Stephen Blackwell, *The Quill and the Scalpel: Nabokov's Art and the Worlds of Science* (Columbus: The Ohio State University Press, 2009), 89; Jay Arnold Levine, "The Design of A Tale of a Tub (with a Digression on a Mad Modern Critic)," *ELH* 33, no. 2 (1966): 217; Dworkin, *No Medium*, 66.

⁵⁶⁷ René Alladaye, *The Darker Shades of Pale Fire: An Investigation into a Literary Mystery* (Paris: Michel Houdiard Éditeur, 2013), 21.

⁵⁶⁸ Nabokov believed that due to the controversies, he would "be remembered by *Lolita* and my work on *Eugene Onegin*" in Vladimir Nabokov, *Strong Opinions* (New York: Vintage, 1990), 106.

⁵⁶⁹ Brian Boyd, *Vladimir Nabokov: The American Years* (Princeton: Princeton University Press, 1991), 293.

⁵⁷⁰ Vladimir Nabokov, "Look at the Harlequins!," in *Nabokov: Novels 1969-1974* (New York: Library of America, 1996), 565-747.

⁵⁷¹ Vladimir Nabokov, *The Annotated Lolita*, ed. Alfred Appel Jr. (London: Penguin, 2000), 109.

⁵⁷² Vladimir Nabokov, *Ada, or Ardor: A Family Chronicle* (New York: Vintage, 1990), 12.

Before exploring the tropes of the book trade within *Pale Fire*, it is worth recapitulating the complex plot of Nabokov's novel. The American poet John Shade has been killed just before finishing his greatest poem, "Pale Fire," an autobiographical treatise on mortality, eschatology and his daughter's suicide. Sybil Shade, the poet's widow, has entrusted her husband's unfinished work to Shade's friend, Charles Kinbote, for publication with his scholarly exegesis in order to immediately boost the reputation of the poem. The novel presents Kinbote's edition of the poem supplemented by a foreword, copious commentary and an index. The reader of Kinbote's commentary soon realises he is an inattentive commentator who ignores standard scholarly exposition to instead focus on Shade's hidden theme: Zembla and its exiled king, Charles Xavier. Kinbote's reckless editing reaches its pinnacle when he asserts, without evidence, that Shade's intentions were to repeat the first line at the end of the poem, foreshadowing the poet's murder. As the commentary unravels, Kinbote gleefully drops hints about his big secret, that he is in fact the exiled king of Zembla, who is indirectly responsible for Shade's death as the bumbling assassin, Gradus, hits Shade in the crossfire of gun shots meant to kill Zembla's former king. It is more likely, however, that the murderer is the escaped convict, Jack Grey, who mistakenly shoots John Shade, presuming he is his incarcerator, Judge Goldsworth, Shade's neighbour. The spectre of a mad Professor Botkin problematises the notion of Zembla, as a possible true identity of the narrator, who has dreamed up Zembla while spying on Shade and obtaining the manuscript through illegitimate means. These multiple levels disrupt our understanding of the stable fictional world and as such, it is impossible to reasonably deduce anything concrete about the novel's narrative.⁵⁷³ The alert reader will note the textual instability not only through the narrative, but also through the allusions to the actions of the agents of the book trade.

⁵⁷³ Marie-Laure Ryan, *Possible Worlds, Artificial Intelligence, and Narrative Theory* (Bloomington and Indianapolis: Indiana University Press, 1991), 40.

Transmission History

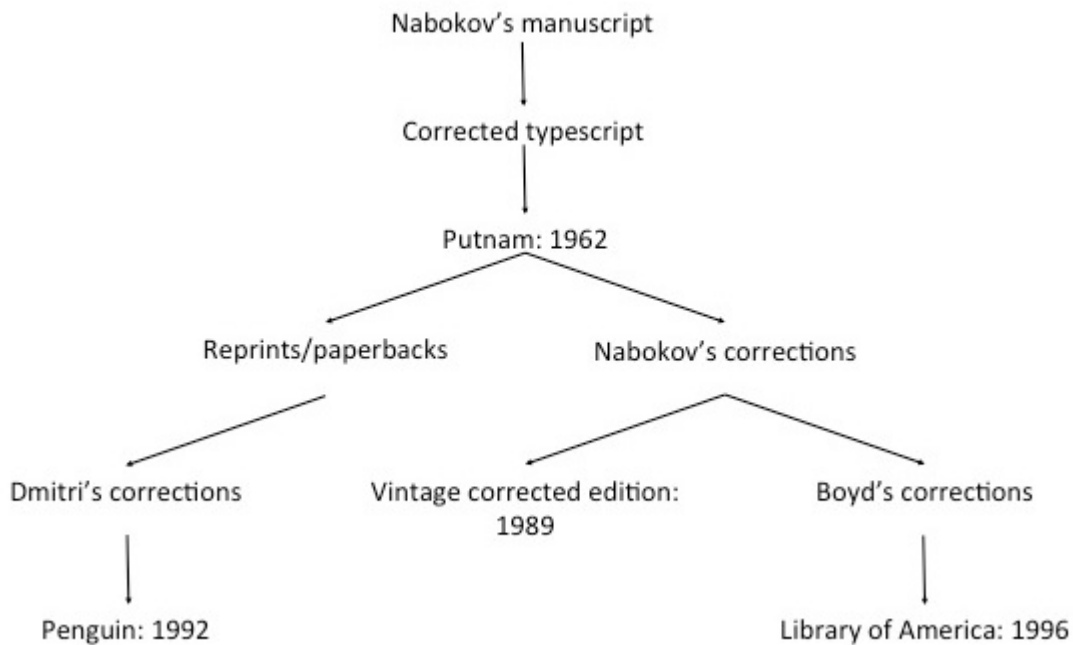


Figure 15 Generalised transmission history of *Pale Fire*

After the long battle to find a publisher for *Lolita* and carefully guiding it through publication with Olympus Press and then American publishers, Nabokov took seven years to compose and publish his next novel. The massive *Eugene Onegin* translation and annotation project consumed a large amount of this time, but the gestation period for *Pale Fire* stretches back to 1939, where Nabokov was mulling over a potential final Russian-language novel, *Solus Rex* (a chess problem where the king is the only piece left; a motif mirrored by Kinbote's predicament which of course he notes as an appropriate title for the poem).⁵⁷⁴ The novel was brewing before Nabokov's second major emigration to the United States, his teaching career, establishing his reputation and the explosion of *Lolita's* popularity, so the novel was not at the forefront of his mind. The first serious consideration of the project that would become *Pale Fire* came almost twenty years later, when "on March 6, 1957, he took a fresh index card and wrote: "The story starts in Ultima Thule."⁵⁷⁵ Of the remaining extant cards clearly marked as *Pale Fire* material, only eight are dated back to the earliest seedlings of the novel's composition, and all but one come from the commentary. The majority of these early cards were not in the final design of the novel, and one of the last cards in this series is numbered 22, indicating further evidence of this early period has been lost. These cards feature a different tone than Kinbote's narrative. For example, a gloss to line one has more technical information about the waxwing, others offer palimpsests of work that would make the final

⁵⁷⁴ C.1000. Boyd, *Nabokov's Pale Fire*, 80.

⁵⁷⁵ Boyd, *VNTAY*, 306.

version, such as a reference to *Finnegans Wake* embedded in the notes to line 12.⁵⁷⁶ The majority of these cards demonstrate that although Nabokov had not finalised the novel, the form was there and many aspects of the poem were already in place five years prior to publication.⁵⁷⁷ The most comprehensive information we have about this stage of the novel's composition at this stage appears in a letter Vladimir Nabokov sent to Jason Epstein on 24 March 1957, after his initial flurry of activity, describing the outline of *Pale Fire* at the time. This does not resemble the final novel other than in superficial ways, as “an ex-king[’s ...] quest is centered in the problem of heretofore and hereafter, and it is I may say beautifully solved” as they have been ousted from Ultima Thule through “some assistance from Nova Zembla.” Nabokov also states he will include President Kennedy in the plot. The closest to the final structure is Nabokov’s final description of the book as “regularly interrupted, without any logical or stylistic transition, right in the middle of a sentence [...] by glimpses of an agent [...] whose job is to find and destroy the ex-king.”⁵⁷⁸ Despite one of the earliest remaining index cards bearing the marks of annotations for line one of the poem, specifically “waxwing,”⁵⁷⁹ Nabokov does not mention the atypical structure of *Pale Fire* in his letter.

Although Nabokov mulled over the novel for a couple of years, “a new flash of inspiration in November 1960 made the novel blaze out in a new direction.”⁵⁸⁰ This marked a return to a difficult work, as Nabokov sent Pyke Johnson Jr., editor at Doubleday, a letter in 1959 stating “the work has not been advancing and I have come to the conclusion that the very existence of the contractual obligation has been interfering with the free development of the novel,” Nabokov was unsure at this point whether he would ever finish the novel.⁵⁸¹ It finally emerged three years later when Nabokov had begun to publish with G.P. Putnam’s & Son. By mid-July 1961, Nabokov had finished Kinbote’s foreword and half of the novel and had expected to finish the novel by mid-August,⁵⁸² although he was still correcting and producing fair copy revisions into December 1961. In early November, Nabokov enlisted Jaqueline Callier, “who had a part-time job typing the Montreux Palace Hotel’s English correspondence, to type up the *Pale Fire* commentary from the fair-copy pencil versions on his index cards.”⁵⁸³ Through

⁵⁷⁶ Vladimir Nabokov, *Pale Fire* MS, 1957-1961, Vladimir Vladimirovich Nabokov Papers, Manuscript Division, Library of Congress, Washington, D.C., container 3, Commentary [line 1] card 89 (hereafter cited as PF MS with container and card number in the form c.[section].number e.g. PF MS 3.C1.89); PF MS 3.C12.102

⁵⁷⁷ C.f. the abandoned note to line 95 in PF MS 4.C95.241; and lines 123-124 in PF MS 4.C123-124.241. There is also an unused variant (“From mammoth hunts and Odysseys/ And Oriental chasms/ To the Italian goddesses/ With Flemish babes in arms.”) on PF MS 4.857.

⁵⁷⁸ Vladimir Nabokov. Personal correspondence to Jason Epstein. 24 March 1957. Vladimir Nabokov, *Vladimir Nabokov: Selected Letters 1940-1977*, ed. Dmitri Nabokov and Matthew J Bruccoli (London: Weidenfeld and Nicolson, 1990), 212–213 Hereafter *SL*.

⁵⁷⁹ PF MS 3.C1.89

⁵⁸⁰ Boyd, *VNTAY*, 359.

⁵⁸¹ Vladimir Nabokov. Personal correspondence to Pyke Johnson Jr. 16 August 1959. In *SL*, 297.

⁵⁸² Boyd, *VNTAY*, 420–421.

⁵⁸³ *Ibid.*, 423.

corrections and proofs—the manuscript is vastly different to the published version—the novel was finally ready for publication in 1962.

The carefully curated marketing plan for *Pale Fire* included showcasing the poem, “Pale Fire” in a magazine. To this end, Nabokov also sent a letter to Rust Hills, editor of *Esquire* in March 1961, in which he offered “The Brink,” a working title for the poem,⁵⁸⁴ although it had not resembled its finished form in title or content, as he only finished composing the novel in December 1961, so his intentions were always for the poem to be a standalone publication. Nabokov had finished the poem and half of the Foreword and very little of the commentary of this text by March 1961, so the magazine would showcase the poem and create a buzz around it before revealing the crazy Kinbote’s annotations. Hills rejected Nabokov’s suggestion as *Esquire* did not publish poetry.⁵⁸⁵ Nabokov eventually found a compromise once the novel was finished as *Harper’s* magazine published the foreword in May 1962 to aid the marketing of the text.⁵⁸⁶ This document has largely been ignored within accounts of the text’s composition, although it offers evidence of the processes of composition from manuscript to publication. From there, the afterlife is generally considered to be fairly simple compared to the many editions of *Lolita*. Putnam’s text from 1962 was contracted to Weidenfeld and Nicolson for hardback rights and who have licensed the text themselves to UK publishers such as Penguin and Random House. Meanwhile, in America, in 1989 Vintage offered Nabokov’s corrections to the work and Brian Boyd’s editorial work for the Library of America editions has created the most reliable version of *Pale Fire* so far.

Reading the Literary Web Through *Pale Fire*

It is apparent that in *Pale Fire*, Nabokov has inscribed much of his experience and opinion of the book trade into the narrative as a critique of the processes he was familiar with. Through a close reading of *Pale Fire* as a critique of the book trade, we can begin to see connections between John Shade and Charles Kinbote’s actions and those of their creator. If we use the Literary Web model, we can map out the stages of composition and reception, Nabokov’s opinion of them and the way in which this influences the structure of *Pale Fire*. The most visible agents of print in *Pale Fire* are the two authors who mirror positions of authority within Nabokov studies. Early critical work has assumed Nabokov’s genius as a puzzle maker, while more recent criticism has revelled more in the receptional possibilities of scholarship. If John

⁵⁸⁴ Given the evidence available for this thesis, it is unclear how and when *Pale Fire* the concept was matched up with “The Brink”/“Pale Fire” the poem. Perhaps Nabokov intended to embed “The Brink” in *Pale Fire*, as there is no requisite that the poem and novel’s title match, despite the extra resonances it creates.

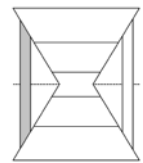
⁵⁸⁵ Vladimir Nabokov. Personal correspondence to Rust Hills. 23 March 1961. *SL*, 329-330; Nabokov also sent a letter to Jennings Wood of the Library of Congress alerting him to the delivery of his finished novel on 7 December 1961. *SL*, 332-333.

⁵⁸⁶ Vladimir Nabokov, “The Late Mr. Shade: A Foreword to His Last Work,” *Harper’s Magazine*, May 1962.

Shade is the proxy of Nabokov as puzzle maker within *Pale Fire*, then Kinbote would certainly subscribe to the anti-intentionalist side of the debate. Kinbote is an expert potential reader in the oulipian sense, as he hunts down the patterns he knows *must* be there.⁵⁸⁷ On the surface then, the core struggle within the Literary Web would be that between the author and the reader, but this reading belies the wider range of agents present throughout *Pale Fire*.

In the early processes of composition, it is clear that there are socio-cultural and external influences on the author that shape its success. An external influence can greatly shape the production of material, which is the case in both the fictional and real construction of *Pale Fire*. In terms of the Nabokovs, there is a clear argument for Véra Nabokova's influence on her husband and she was an important part of the composition process as the first to hear or read Nabokov's newest work. This relationship is reflected in the generous feedback and support Sybil Shade gives her husband but is also burlesqued by Kinbote's assertions about his influence. Kinbote insists that the poem was composed by Shade but the inspiration emerges from his own narrative. At the beginning of the commentary, Kinbote places a disclaimer to state that he did not take an opportunity to alter the poem to parallel his narrative in the commentary, although the reader would not initially consider an editor would engage in such practices (C.1-4). Kinbote's vision is ignorant of any other factors that might, and clearly have, influenced Shade's composition of his final poem. Kinbote further complicates the idea of genesis, creativity and authorship through questioning the agency of the author in the composition of the text: "knowing Shade's combinatorial turn of mind and subtle sense of harmonic balance, I cannot imagine that he intended to deform the faces of his crystal by meddling with its predictable growth." (F, 15) Here, Kinbote exemplifies the importance he places on his external factors as numerology is more significant than Shade's creative purposes. For Kinbote, the poem could have been written by anyone, as long as its subject was the exiled king.

One of the most important aspects of the composition process is the technology of composition and its relationship to the mental processes of creation. The work-in-progress stage requires committing the work to some form of technology to manipulate drafts into fair copy. *Pale Fire* makes for an interesting case study here, since the novel's composition and structure are both hypertextual. Brian Boyd reports that Nabokov began to write with index cards in 1946 (although not consistently, he returned to standard paper when writing *Pnin*), a technology appropriated from his lepidopterological research. Boyd describes the method as conceptualising the whole work, writing sections in a non-linear order "and then placing the new cards, in the sequence he had



⁵⁸⁷ Becker, *Many Subtle Channels*, 84.

foreseen, among the stack already written.”⁵⁸⁸ This account mythologises Nabokov as an author who composed the whole narrative before committing it to pencil and one that has been pervasive throughout scholarship on Nabokov. Closer engagement with the index card manuscript of *Pale Fire* reveals that Nabokov’s comments were part of his public persona rather than substantiated fact. The index cards are teeming with erasure, revisions and notes that demonstrate a deep level of change and progression over time. This is most evident in the cards that contain dates as Nabokov worked on disparate sections of the commentary on the same day or over the same month.⁵⁸⁹ Figure 16 shows Nabokov’s composition patterns by date, and, while there are clusters in which we can see a correlation between date and sequence in the novel, Nabokov would often work on different sections of the commentary at the same time. For example, Nabokov dated two cards he started on 6 July 1961 indicating he was working on the notes to lines 80 and 347 at the same time.⁵⁹⁰ These notes are not explicitly connected, since they describe Zemblan history and the Shade’s experience in a haunted barn. Nabokov was composing the novel in a multi-linear manner, especially when he was at his most productive.

⁵⁸⁸ Boyd, *VNTAY*, 169.

⁵⁸⁹ Unfortunately, outside of the Foreword and poetry, the dating of cards is very patchy.

⁵⁹⁰ PF MS 4.C80.229 & 4.C347.511.

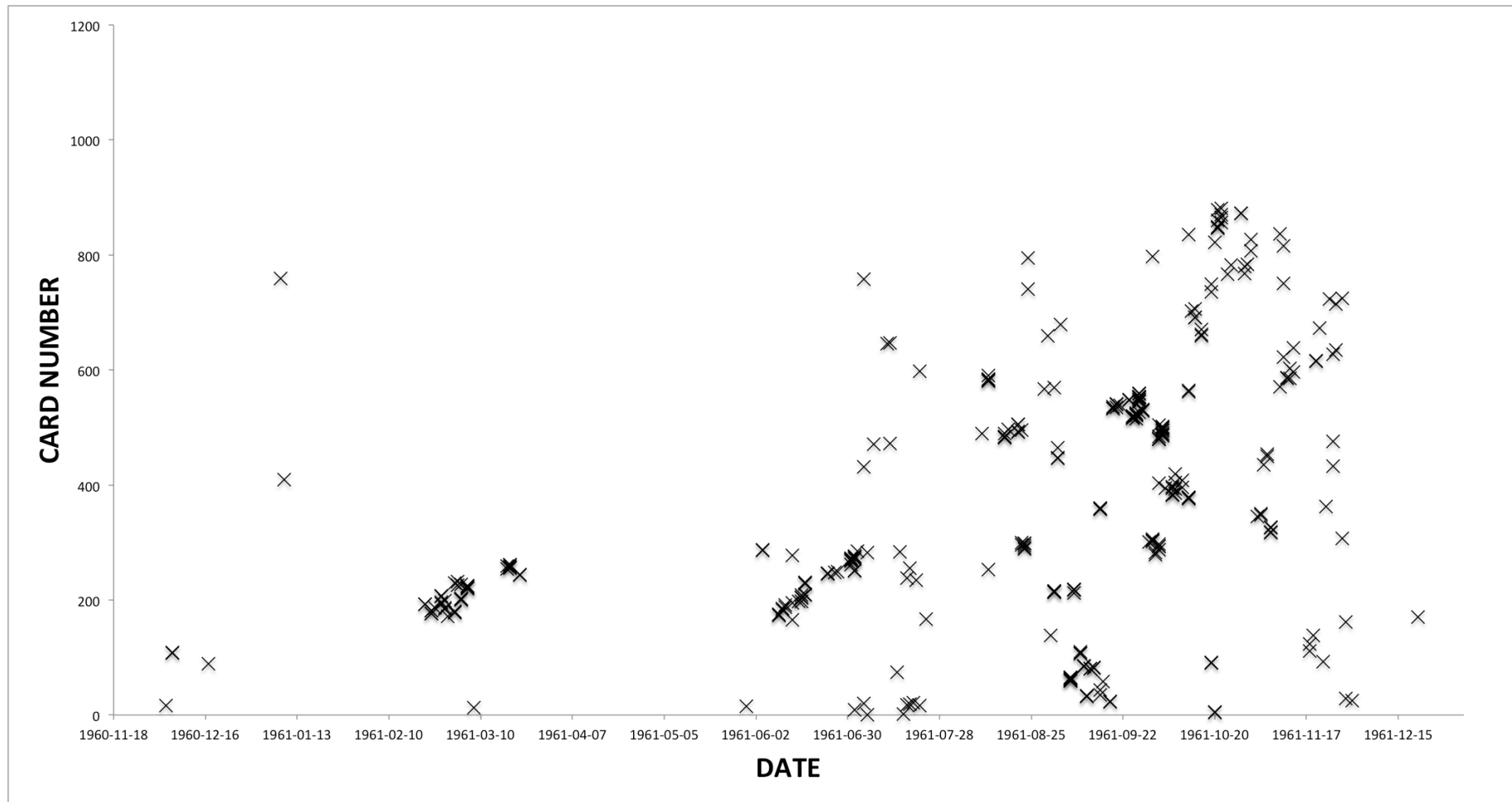
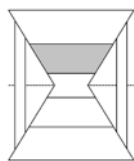


Figure 16 Distribution of dates on the *Pale Fire* commentary index cards

On the micro-level, there is further evidence of extensive non-linear revision on individual index cards. Some of the most important examples of the revision process happen early in the



Foreword, as “Canto Three, my favorite” in the manuscript changes to the final version of “your favorite,” (F, 13) a much more problematic phrase given its early appearance and lack of a clear deictic marker identifying the addressee.⁵⁹¹ Likewise, a draft dated 19 March 1961 talks about Professor Goldsworth rather than Judge Goldsworth, a decision that would greatly change the dénouement of the narrative as the distinction between Jack Grey and Gradus would have been distorted.⁵⁹² These and the other comments, notes, attempts to calculate the required length of the poem, a compass facing east and a chess puzzle demonstrate that the manuscript of *Pale Fire* was a constant work-in-progress rather than a committal of polished prose to paper.⁵⁹³ The final result of Nabokov’s prose is an example of what Hannah Sullivan has called the “essential indeterminacy” created through the processes of “inside-out revision.”⁵⁹⁴ Since Nabokov’s revision process changed the text “inside-out” through small-scale revisions and the use of index cards, the text gained its well-known indeterminacy. It is likely too that the format of the index cards partially inspired Nabokov to include an index in *Pale Fire*, as the manuscript shows evidence that he used the affordances of the cards to maximise the generic quality of the hypertext. Moreover, the index cards have been numbered in a way that indicates “inside-out revision” as the section numbers for the units of the foreword and notes often have numbers that must then be rectified resorted to letters. The most extensive late addition is the note to line 60 that merited the insertion of cards 182a to 182m. Internally to the different notes, there is further evidence of two consecutive cards labelled with the same number. This level of revision refutes Nabokov’s claims that the index cards were primarily for the ability to write different chunks already committed to memory.

Nabokov endows John Shade with his compositional method of composition using index cards in *Pale Fire*, as “Shade reserved the pink upper line for headings (canto number, date) and used the fourteen light-blue lines for writing out with a fine nib.” (F, 13) Kinbote romanticises the process of using index cards by suggesting “my beloved old conjurer, put a pack of index cards into his hat - and shook out a poem.” (F, 27) Although Nabokov used plainer white cards with grid lines on (which were helpful in the design of chess problems and other jottings), somewhat uncharacteristically, he chose to include the dates at the top of each index card of parts of the commentary and the entire poem, creating another link between the author and his fictional

⁵⁹¹ PF MS 3.F.2

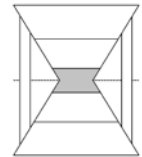
⁵⁹² PF MS 3.F.16

⁵⁹³ PF MS 3.P.53[b], 3.P.73, and 3.F.108

⁵⁹⁴ Sullivan, *Work of Revision*, 190.

counterpart. Evidently, the use of index cards for composition indicates a level of labour in the process, as the small size and combinatorial elements move far away from the spontaneous composition of paper of Jack Kerouac's scroll. Even if the process is continuous, the short length of the card jerks the poet out of the process repeatedly. Nabokov had to carefully think about the transition between the various card and the materiality and layout of the card rather than the spontaneous flow of composition. Shade's poem offers two accounts of composition, Kinbote's magical method, "the kind/Which goes on solely in the poet's mind" and the more mundane: "The other kind, much more decorous, when/He's in his study writing with a pen." (P.840-846). Although Nabokov frequently composed parts of the poem "in the poet's mind" while taking a stroll "along the promenade to unwind,"⁵⁹⁵ the material evidence left by the manuscript suggests that the cognitive load of the highly hypertextual novel and the complex interplay between various sections required the index cards rather than just composing in his head.

Once the manuscript leaves the author's control, other agents are likely to leave their own traces. Nabokov jokes about some of these factors when he reminds us of an author's reliance on proofreaders to ensure the final text is readable. Kinbote shows disdain for anyone who offers help in producing his edition:



Frank has acknowledged the safe return of the galleys I had been sent here and has asked me to mention in my *Preface* - and this I willingly do - that I alone am responsible for any mistakes in my commentary. *Insert before a professional.* A professional proofreader has carefully rechecked the printed text of the poem against the phototype of the manuscript, and had found a few trivial misprints I had missed; that has been all in the way of outside assistance (F, 18, emphasis my own)

James Ramey notes two intentional errors in this passage: (1) Kinbote calls his foreword, written by someone other than the primary author, a preface, traditionally written by the main body's author; and (2) "Insert before a professional" is a note from Kinbote to himself, reminded by the discussion of mistakes, that he needs to ensure that the commentary is proofread before publication.⁵⁹⁶ There is a further humorous juxtaposition between Kinbote's assertion that the poem has been "carefully rechecked" and his extratextual comment that he needs to "*Insert [the manuscript] before a professional*" which should have been removed if the task was completed. Kinbote's protection of the manuscript runs counter to his ability to create the perfect edition he craves. Nabokov presents publication in *Pale Fire* as a Faustian bargain where the pure intentions of the author are corrupted by the influence of external agents, reflecting his

⁵⁹⁵ Boyd, *VNTAY*, 417.

⁵⁹⁶ James Ramey, "Parasitism and *Pale Fire*'s Camouflage: The King-Bot, the Crown Jewels and the Man in the Brown Macintosh," *Comparative Literature Studies* 41, no. 2 (2004): 194.

concerns about editors meddling with his own work on two levels.⁵⁹⁷ Kinbote himself removes these agents from his publication of the text but his work remains incomplete as there are errors and fissures in his finished product. Here and elsewhere—“(no, delete this craven ‘perhaps’)” (C.920)—we can see that the commentary is unfinished and editorial input would have helped Kinbote from looking foolish, a concern Nabokov had in the editing of his works. When asked about his worries about the future of literature, Nabokov stated “All I would welcome is that in the future editions of my works, especially in paperback, a few misprints were corrected.”⁵⁹⁸ Nabokov thus presents *Pale Fire* as a “found document” with little editorial interference, highlighting the complexities of the book trade that were a stark reality for Nabokov in the mid-twentieth century. Nabokov’s primary intentions for this are to expose the processes behind the composition and reception of the novel and reveal how the author relies on a team of editors to ensure the authority of the named author remains.

This genre of found document has its own rhetoric that is created through explicit reference to the editor of the text and their role. Although all three of Nabokov’s “incomplete” texts (*Lolita*, *Pale Fire* and *Ada, or Ardor*) feature prominent editors, Kinbote is the only editor directly connected to the primary narrative. John Ray Jr (*Lolita*) and Roland Oranger (*Ada*) both offer a level of oversight above the primary author of their respective texts. Nabokov has not inserted such a figure into *Pale Fire*, as our editor is also the primary narrator and protagonist. This has aided the hypertextual qualities as a strictly edited edition may not have included so many intriguing receptional pathways to follow. As with every prior layer of the Literary Web, Kinbote has some strong opinions on editing: “one of our professed Shadeans - who affirmed *without having seen the manuscript of the poem* that it ‘consisted of disjointed drafts none of which yields a definitive text.’” (F, 14) Evidently, Kinbote’s copy-text is incomplete as the final canto is not available in fair copy. (F, 14) If it were possible to apply a rigorous methodological critique of Kinbote’s editorial method from a bibliographical perspective, the primary deficiency would be identified as the lack of its transparency. Not only is this edition created through a single person, but also the method has not been stated in a clear way, leaving the reader with no idea what has or has not been added by the editor, it can only be speculated. Clearly, this is an absurd blend of fiction and reality, but from a fictional perspective, Kinbote is not a credible editor and requires the supervision of a colleague, akin to Ray Jr. or Oranger, who would ensure that his work was mistake-free and credible. Kinbote also only includes a brief description of Shade’s composition process that, given his unreliability, should not be taken as testament. Due to these inconsistencies, Kinbote does not follow a strictly technical method of editing, despite leaving variants in the commentary that he believes are superior to Shade’s fair copy. (F, 16)

⁵⁹⁷ C.f. his frequent put-downs in letters to publishers in Nabokov, *Selected Letters*, xiv, 13, 16, 41, 73, 87, 95, 175 and 340.

⁵⁹⁸ Nabokov, *Strong Opinions*, 157.

Unfortunately, Kinbote reveals in the index that rather than adding rigour to the edition, the variants were rather his personal additions. (I, 314-5) He even holds Shade accountable for problems with “Pale Fire,” as “Oh yes, the final text of the poem is entirely his [...] we may conclude that the final text of *Pale Fire* has been deliberately and drastically drained of every trace of the material I contributed.” (C.42)

It is uncertain that the final text of the poem is *entirely* his, however, since Kinbote notes “I have italicized the Hazel theme.” (C.403-404) Despite Kinbote only noting his variants, rather than making the changes, his unscrupulous practice elsewhere does not rule out the possibility that he has also altered other parts of the poem. Kinbote only explicitly states he has added the italics to this middle section, but due to his patent unreliability, the reader cannot be assured that the implicit connections from poem to commentary were originally there. Moreover, the juxtaposition between Hazel’s tragedy and the Shades’ quiet night in is readily apparent through reading the text without the contrast of italics, particularly if we consider Shade’s comment that “[And here time forked.]” (P, 404) Kinbote has undertaken an intrusive form of editing that relies on interpretation and deviation rather than strict bibliographical principles. One of the times where one might see Kinbote’s influence on the poem is the couplet:

*Man’s life as commentary to abstruse
Unfinished poem.* Note for further use (P.949-940)

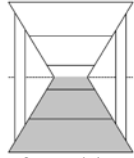
Kinbote has acknowledged he is willing to italicise other parts of the poem and this use of italics is suspicious given its contents. Our editor has admitted elsewhere that he views the modification of formatting to be a minor intrusion. Kinbote further proposes that he holds the power to make major edits, on a scale larger than italicising a theme in the text:

It is the *only* time in the course of the writing of these difficult comments, that I have tarried, in my distress and disappointment, on the brink of falsification. I must ask the reader to ignore those two lines (which, I am afraid, do not even scan properly). I could strike them out before publication but that would mean reworking the entire note, or at least a considerable part of it, and I have no time for such stupidities (C.550)

Kinbote is more concerned with the added workload of revising his *own* material rather than any concern for the integrity of Shade’s original. Moreover, Kinbote asserts that it is not Shade’s intentions that drive his copy text but rather the overall structure of the poem: “This variant is so prodigious that only scholarly discipline and a scrupulous regard for the truth prevented me from inserting it here, and deleting four lines elsewhere (for example, the weak lines 627-630) so as to preserve the length of the poem.” (C.596) There are further references to inventions in the editing process that unfortunately disappeared, “but alas, it is not so: the card with the draft has not been preserved by Shade.” (C.822) This process of deletion and erasure after completion is reminiscent of Nabokov’s process of removing all but fair copy. Any future editor of the *Pale Fire* manuscript will reflect Kinbote’s experience because outside of four cards dedicated to

notes (two on Shakespeare, two on word golf) and a few erased doodles, Nabokov has only kept only the final version of the cards with any erasures in-tact.

Reception in *Pale Fire*



Nabokov's novel not only engages with the composition process, but also is also interested in the processes of reception. This was an concern for Nabokov as he had built up a reputation in émigré Europe and then had to rebuild it internationally which he finally achieved with the publication of *Lolita*. The next tale he chose to compose after this point would certainly contain his opinions on reception. Nabokov's most public pronouncement on the weird effect of his infamous novel was "*Lolita* is famous, not I. I am an obscure, doubly obscure, novelist with an unpronounceable name."⁵⁹⁹ Despite the success of the novel, Nabokov was still concerned about the impact of this on his literary career. The reception of his next major project was a great concern. Most directly this manifests itself in direct addresses to the audience. The reader is evoked several times within the text since Kinbote believes there is a potential audience for his notes as well as Shade's poem.⁶⁰⁰ These direct addresses to the reader exist within a more complex receptional afterlife to the text apparent through Kinbote's commentary. The novel's reception is facilitated by the technology through which readers can engage with the text. Depending on the reception, this will change and more or less resources may be spent to extend or contract the lifespan of the book.

As Kinbote is protective of the manuscript, he made sure to hold onto the original and get the manuscript photographed in New York. (F, 17) Kinbote further continues, "on publication day the manuscript would be handed over to the Library of Congress for permanent preservation," (F, 16) This mirrors Nabokov's personal manuscript policy at this time, as he began to submit his completed holographs to the Library of Congress in 1958.⁶⁰¹ Yuri Leving argues that this carefully preserved Nabokov's posthumous reputation and consecrates the author's role within the literary canon.⁶⁰² Nabokov was careful when selecting materials to offer to the Library of Congress as he balanced his reputation with leaving valuable manuscripts for his heirs to sell.⁶⁰³ Manuscripts in large research libraries not only consecrate the author but also allow for future research to build upon the original materials. In the internal world of *Pale Fire*, Kinbote wishes for only the best national library to consecrate Shade's poem although it will offer any future scholars a way of debunking Kinbote's dubious commentary. Future researchers, including

⁵⁹⁹ Ibid., 107.

⁶⁰⁰ I treat this more fully in Simon Rowberry, "His and My Reader?: Rereading *Pale Fire* Hypertextually," *Nabokov Online Journal* V-VI (December 2011), http://etc.dal.ca/noj/articles/volume5_6/24_Rowberry_PDF.pdf.

⁶⁰¹ Vladimir Nabokov. Personal correspondence to Randall Jarrell, April 12, 1958 in *SL*, 255-256.

⁶⁰² Yuri Leving, "French Theory, Russian Legacy: Reading Nabokov with Pierre Bourdieu," in *Vladimir Nabokov et La France* (Paris, 2013).

⁶⁰³ Vladimir Nabokov. Personal correspondence to John C. Broderick [Acting Chief, Manuscript Division, The Library of Congress], 14 December 1970. *SL*, 475-6.

Professor Hurley (F.17), would immediately see any amendments made in his hand, and bibliographical evidence would unveil the extent of Kinbote's insertions. From the response to Shade's death, it is apparent that his poems had been well received as there was interest in working to produce a scholarly edition of "Pale Fire" for its initial release rather than publication in a journal. Kinbote commandeers the editing of the poem and forks the poem before its initial publication, irrevocably changing the reception of the poem. Although texts can overcome their initial material conditions (Nabokov's *Lolita* is no longer associated with pornography despite its initial publication with Olympos Press), it is likely that Shade's poem would be irrevocably connected to Kinbote's commentary as the context in which it first appeared.

The annotator plays an important part of the afterlife of the poem, since the reader will permanently associate the two, as literary critics have noted on two levels with regards to *Pale Fire*. Kinbote's scholarly edition works as a speculative edition as it stakes the importance of the poem's reputation upon having careful exposition on publication rather than as a later edition. The recent appropriations of "Pale Fire" as an artists' book revels in the tensions between the poem and the commentary, since such extravagant editions are required to publish the poem by itself.⁶⁰⁴ This blurs the lines between the reality of Nabokov's text and the authorial problem of who created the fictional universe. The text's reality is mirrored by discourse round the novel. René Alladaye asserts that Mary McCarthy's early review of *Pale Fire*, "A Bolt in the Blue," appeared too early in criticism of the novel and steered the dominant interpretation of the novel in the first few decades.⁶⁰⁵ This problem is compounded by the addition of McCarthy's treatise to review copies of the first British edition,⁶⁰⁶ which resulted in a truncated version being included on the edition's cover. Nabokov was precious about the content of the blurb, as he rejected Walter Minton's (his editor at G. P. Putnam & Son's) suggestion to include "a cast of characters with the land of Zembla included and identified" for several reasons to keep the balance of the novel.⁶⁰⁷ More recently, the Penguin edition of *Pale Fire*, the most popular version of the text in the British marketplace, from 1991 to 2011 has included McCarthy's essay as an introduction.⁶⁰⁸ McCarthy's review position before the main text in the main British edition for 20 years has shaped many readers' interpretations of the text as their introduction into the critical debates around the novel. We must not forget that the annotator's interpretation

⁶⁰⁴ Vladimir Nabokov, *Pale Fire: A Poem in Four Cantos by John Shade*, ed. Brian Boyd and Jean Holabird (Berkeley: Gingko Press, 2011).

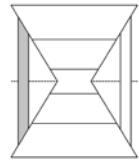
⁶⁰⁵ Alladaye, *Darker Shades of Pale Fire*, 62.

⁶⁰⁶ The review is appended to the mass market version of the first British edition in a truncated form but the source is unacknowledged.

⁶⁰⁷ Véra Nabokova. Personal correspondence to Walter Minton quoted in Boyd, *VNTAY*, 462.

⁶⁰⁸ Michael Juliar, "A35: Pale Fire," in *Vladimir Nabokov: A Descriptive Bibliography, Revised (DRAFT)*, 2013, 11, <http://www.vnbiblio.com/wp-content/uploads/2013/06/Pale-Fire.pdf> Although it should be noted that the review is removed from the Penguin eBooks for Amazon's Kindle and Apple iBooks.

can shape our own. These dominant interpretations arguably moved discourse around the book away from Nabokov's original ideas, since Nabokov admitted that "90% of [McCarthy's] symbols were not fathered by me."⁶⁰⁹



Reception is also marked by implicit discourse about the prestige of books in their material binding. Nabokov is not shy to introduce a range of textual objects from a high-brow "shelfful of calf-bound poets," (C.12, 76) clearly in luxury bindings, to Gradus's occupation of "printing peevish pamphlets." (C.17/29) This ranges from high value objects to ephemera, and it is no coincidence that one of the most important intertexts, indeed, the source of the title that Kinbote cannot identify is presented as a material object (C.962), Shakespeare's *Timon of Athens* is referred to in terms that will likely resonate with textual scholars of Shakespeare: "a *thirty-twomo* edition." (C.130, 125, *emph. mine*) The transmission history of Shakespeare is deeply tied to the production practices of the early printing presses, and is of concern to many bibliographers.⁶¹⁰ The core tension is observed between the differences between the Folio and Quarto versions of the texts have vexed Shakespeareans for centuries. Folios are folded over just once, while "in a quarto the sheet is folded twice to make four leaves (eight pages)."⁶¹¹ The Folio of Shakespeare is seen as a literary publication, while the Quarto probably represented a closer approximation of the theatrical Shakespeare.⁶¹² Foxon argues that the hegemony of the Folio as a luxury book only faltered after 1715.⁶¹³ If the well-known prestige gap between Folios and Quartos is large, the appearance of a thirty-twomo of *Timon of Athens*, a sheet of paper folded thirty-two times, signifies a cheap reprint, far away from the splendour of the original.⁶¹⁴ Don McKenzie argues that "the history of material objects as symbolic forms functions, therefore, in two ways. It can falsify certain readings; and it can demonstrate new ones."⁶¹⁵ The editions that readers encounter, such as the low-quality thirty-twomo, deeply influence the reader's understanding of the text. The form in which the reader encounters a book transforms the reception of the book.

⁶⁰⁹ Vladimir Nabokov. Personal correspondence with William McGuire. 28 October 1962. Quoted in Boyd, *VNTAY*, 465.

⁶¹⁰ Hans Walter Gabeler, "Late Twentieth-Century Shakespeares," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders (Cambridge: Cambridge University Press, 2013), 79–96; David Scott Kastan, *Shakespeare and the Book* (Cambridge: Cambridge University Press, 2001); Alfred Pollard, *Shakespeare Folios and Quartos: A Study in the Bibliography of Shakespeare's Plays 1594-1685* (London: Methuen and Company, 1909); F. P. Wilson, *Shakespeare and the New Bibliography*, ed. Helen Gardner (Oxford: The Clarendon Press, 1970); Stanley Wells et al., *William Shakespeare: A Textual Companion* (New York & London: W. W. Norton & Company, 1997).

⁶¹¹ William Proctor Williams and Craig S. Abbott, *An Introduction to Bibliographical and Textual Studies*, 4th ed. (New York: The Modern Language Association of America, 2009), 43.

⁶¹² Kastan, *Shakespeare and the Book*, 72.

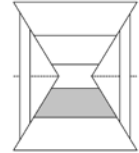
⁶¹³ David Foxon, *Pope and the Early Eighteenth-Century Book Trade*, ed. James McLaverty (Oxford: Clarendon Press, 1991), 64.

⁶¹⁴ The appearance of the thirty-twomo copy of *Timon of Athens* is yet another marker that connects Kinbote to Charles II and appropriately, the cheap collation of the text is probably a mirror of the fact that the text that does not appropriate render the translation of "Pale Fire" from English to Zemblan.

⁶¹⁵ McKenzie, *Bibliography and the Sociology of Texts*, 22.

From *Lolita*'s success onwards, Nabokov's extensive back catalogue garnered interest from a range of suitors and foreign markets. The work of overseeing the production of translations and reprints, and Nabokov's attention to the quality led to him focusing on this work over creating new fiction. Kinbote is depending on a reprint and to make it more luxurious as he discusses additional illustrations "for reproduction in later editions of this work." (C.71, 107). Such a feature would ensure the continuing popular reception of Shade's poem.

These disparate forces of the book trade add to the indeterminacy of the book's hypertextual structure. The recombinations of the text and the emergent indeterminacy means that *Pale Fire* is an exemplar of the digital age and acts as many of the most important tropes of the Literary Web on many levels. This has been acknowledged in traditional Nabokov criticism, but implicitly in wider debates. Rather than dealing with the gaps, indeterminacy and hypertext on their own terms, *Pale Fire* criticism has coalesced around the question of authorship in the novel.⁶¹⁶ This critical misstep is not unique to *Pale Fire* within Nabokov scholarship, as one of Nabokov's typographic errors in dating *Lolita* has led to some critics asserting that the entire narrative is Humbert Humbert's fantasy.⁶¹⁷ Elsewhere I have discussed how this debate misses out on a crucial distinction within the novel between readers that allows for allegiances for Shade and Kinbote without resorting to overly complicated theories of authorship.⁶¹⁸ Kinbote's comment that Shade "was reassembling my Zembla" (C.802) aptly demonstrates the manipulable elements present within the text. *Pale Fire* encourages and facilitates its own reassembly, which is evident from reading the material history of the text's transmission history.



⁶¹⁶ The most complete survey of the complex debate can be found in Alladaye, *Darker Shades of Pale Fire* Further examples include; William C. Dowling, "Who's the Narrator of Nabokov's *Pale Fire*?" 2003, <http://www.rci.rutgers.edu/~wcd/palenarr.htm>; Catherine Saint Louis, "Who Wrote *Pale Fire*?" 8, no. 9 (December 1998): 10–12; Maurice Couturier, "Which Is to Be the Master in *Pale Fire*," 1998, <http://www.libraries.psu.edu/nabokov/coutpf.htm>; Boyd, *VNTAY*, chap. 18; Alladaye, "Through the Looking-Glass - *Pale Fire* as Anamorphosis: An Alternative Theory of Internal Authorship"; Herbert F. Smith, "The Topology of *Pale Fire*. An Analysis Based on Catastrophe Theory," in *Cross-Cultural Studies: American, Canadian and European Literatures: 1945-1985*, ed. Mirko Jurak (Ljubljana: University of Ljubljana, 1985), 183–192; David Galef, "The Self-Annihilating Artists of *Pale Fire*," *Twentieth Century Literature* 31 (1985): 421–437; Neils Isaac, "The Riddle Of/in *Pale Fire*," *LIT: Literature Interpretation Theory* 13 (2002): 317–332; Michael Wood, *The Magician's Doubts: Nabokov and the Risks of Fiction* (London: Pimlico, 1995), chap. 8; John Haegert, "The Author as Reader as Nabokov: Text and Pretext in *Pale Fire*," *Texas Studies in Literature and Language* 26 (1984): 405–424; Brian Boyd, "Shade and Shape in *Pale Fire*," 1997, <http://www.libraries.psu.edu/nabokov/boydpfl.htm>; Boyd, *Nabokov's Pale Fire*; C. J. Ackerley, "Pale Fire: Three Notes towards a Thetic Solution," *Nabokov Studies* 2 (1995): 87–103; Andrew Field, *Nabokov: His Life in Art* (London: Hodder and Stoughton, 1967), chap. 10; DeRewal and Roth, "John Shade's Duplicate Selves: An Alternative Shadean Theory of *Pale Fire*"; Emma Lieber, "Having Faith in Nabokov's *Pale Fire*," *Nabokov Studies* 11 (2009); Robert Rawdon Wilson, "Character-Worlds in *Pale Fire*," *Studies in the Literary Imagination* 23 (1990): 77–98.

⁶¹⁷ Most carefully debunked by Boyd in Brian Boyd, "Even Homais Nods: Nabokov's Falibility, Or, How to Revise *Lolita*," *Nabokov Studies* 2 (1995): 62–86.

⁶¹⁸ Rowberry, "His and My Reader."

Reprints and Digital Editions

While *Pale Fire*'s composition and publication history was simpler than Nabokov's struggle to bring *Lolita* to market,⁶¹⁹ its afterlife matches, if not outpaces, the peculiarity of Nabokov's most famous text. There have been over 50 editions in various formats of the novel (appendix A). Although translations of the text raise some interesting questions about interpretations of the novel, most importantly how do different writing systems solve the problem of keeping the last index entry as "*Zembla*, a distant northern land" (I, 315),⁶²⁰ the material transformations of the text are of primary interest for this chapter. These forkings range from artists's books, audiobooks, digital editions and eBooks, all of which transform the text beyond the plethora of print reprints (summarised in table 4).

Year	Publisher	Notes
1962	"The Late Mr. Shade" in <i>Harper's</i> May 1962	Reproduction of the foreword
1962	New York: G. P. Putnam's	1 st edn. Hardback
1962	London: Weidenfeld and Nicolson	1 st British edition
1964	London: Corgi	[1 st ?] British Paperback
196[9?]	Ted Nelson	Demonstration for HES
1983	<i>Blednyi ogon'</i> . Trans. Véra Nabokova. Ann Arbor: Ardis	1 st Russian translation
1989	New York: Vintage	1 st edition with Nabokov's corrections
1991	London: Penguin	6 th printing—includes McCarthy's "Bolt from the Blue"
1994	The Arion Press	Artist's Book
1996	Library of America <i>Novels 1955-1962</i>	Edited edition by Brian Boyd with corrections from Vintage, 1991 and further corrections
1999	S. Kazinin	Web
2004	BBC Radio 3	Radio Drama
2006	Matthew Roth	<i>Pale Fire</i> concordance
c.2007	Tiddly Wiki	Web
c.2008	Shannon Chamberlain	Web
c.2008	Tundra Squid	Web
2009	G. S. Lipon	Web
2010	Audible	Audiobook
2011	Gingko Press	Artist's Book
2012	London: Penguin (Amazon)	UK Kindle Edition (No index)
2012	London: Penguin	Reset hardback

Table 4 Corpus of editions under study

⁶¹⁹ See Boyd, *VNTAY*, chap. 10–16.

⁶²⁰ Véra Nabokova's Russian translation of *Pale Fire* anticipates the problem of "З" or "Z" being the ninth of thirty-three characters in the Russian alphabet by changing the entry to ЯЧЕЙКА яшмы, Зембля, далекая северная страна. [Orbicle of jasp, Zembla, a far northern country]. Vladimir Nabokov, *Blednyi Ogon'* [*Pale Fire*], trans. Véra Nabokova (Ann Arbor: Ardis, 1983).

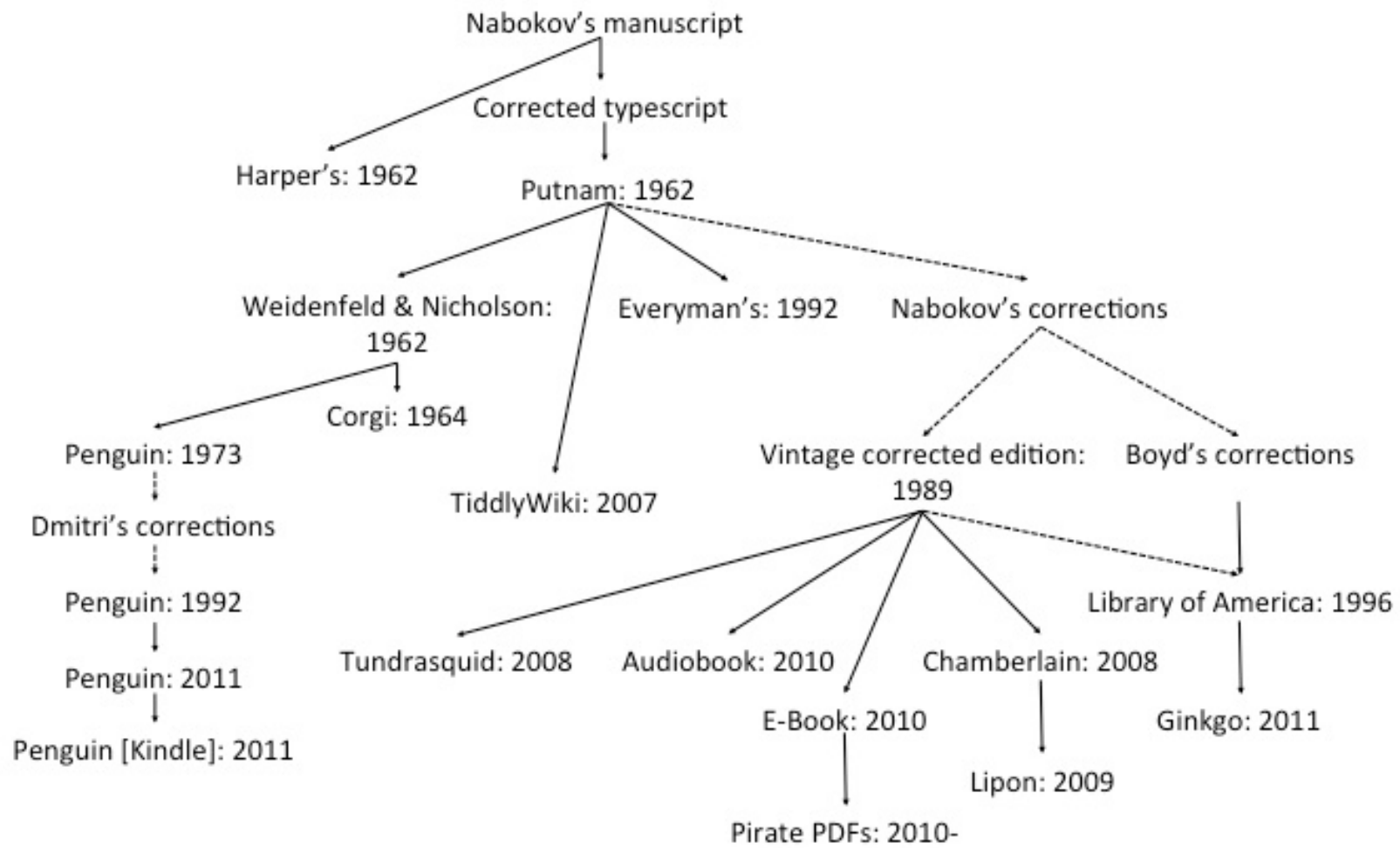


Figure 17 Stemmatization of editions of *Pale Fire*

The transmission history of *Pale Fire* is complex as reprints of different editions have led to disparate texts. Not only does this mean that further corrections sneak into reprints and paperbacks (as well as many more variants), but that different editions receive their corrections from different places. One peculiar example is Dmitri Nabokov's corrections to the Penguin edition of *Pale Fire* when renegotiating the contracts in May 1993. Miranda McAllister later suggested in an internal memorandum "if our texts are up to date we may as well stick with them, rather than offsetting Vintage editions."⁶²¹ Dmitri notes five of his father's twelve corrections of the 1962 version of the novel previously integrated into the 1989 Vintage as well as two further corrections, "Catskin" should be changed to "Catkin" (C.171, 151)—incidentally a remnant from the 1962 version that was not noted as a correction by Nabokov—and a correction of the capitalisation of "for example" (C.627), an artefact from earlier imprints that remained uncorrected in 2000 and 2010 editions.⁶²² The former was the effect of an overzealous proofreader, while the latter has remained a constant artefact that has often gone unnoticed in editing *Pale Fire*, as it is not included in either Nabokov's or Boyd's list of corrections. This then differs from the corrections offered by Nabokov and complicates the relationship with the text, particularly when Penguin refused to make the changes. Further to the complex relationship between Penguin and the Nabokov Estate, there are other traces in the print editions that are worth spending a bit more time with before moving on to discuss the digital appropriations. Through a bibliographical analysis of the various editions, there are a few constants throughout publications of *Pale Fire* but the poem has been kept with a greater deal of consistency than the rest of the text. Nabokov's corrections note only one variant, as an errant "or" should be "on," that has been uncorrected other than in Boyd's Library of America edition and the Ginkgo artists' book which was published after Boyd's initial bibliographical survey.⁶²³ Otherwise, print versions of the poem have spent a lot of time ensuring the consistency of the poem as the centrepiece of the novel compared to the many variants that occur round the text. The earliest British version is the most consistent with the original, since it was offset from the same plates, other than the copyright page. The cheap Corgi paperback reprint, published three years later, was the beginning of major variation between printings.

The Penguin and the Vintage paperbacks will be the dominant versions that readers encounter in the marketplace as these two publishers have the license to publish the text. The Penguin has gone through at least eleven reprints and the Vintage at least 34.⁶²⁴ Textual variation has

⁶²¹ Miranda McAllister to Mark Handsley, personal correspondence, 18 November 1995, DM2083/13/1. Penguin Archives, University of Bristol.

⁶²² Dmitri Nabokov, corrections to Penguin *Pale Fire*, May 1993, DM2083/13/1. Penguin Archives, University of Bristol.

⁶²³ Brian Boyd, "Notes on the Text," in *Nabokov: Novels 1955-1962*, by Vladimir Nabokov (New York: Library of America, 1995), 871.

⁶²⁴ Penguin had let *Pale Fire* fall out of license on occasion over the years too.

inevitably crept in with these various editions and their association with eBook versions in Britain and United States respectively has further complicated this situation. The Penguin Kindle eBook is of particular interest, as it does not feature an index. The print version it is derived from, the 2011 eleventh reprint, features an index, as does the iBooks version which is based upon the same print copy. It is unclear why the Kindle version, probably one of the most popular formats, would not have the index, a vital part of the fiction. If the popularity of eBooks continues to rise, the Penguin Kindle edition will be the most visible edition of *Pale Fire*, and without an index, they are unlikely to appreciate many of the textures of the text that ripple through the additional links in the index as well as the mysterious last entry, “*Zembla*, a distant northern land.” Since Nabokov wrote on the index card for the entry to ensure that *Zembla* was not indexed comprehensively in the final version,⁶²⁵ it is clearly important to include the index as the dénouement of the text. Moreover, unlike other indexes that are excluded or prefaced with a disclaimer that they refer to print page numbers, *Pale Fire*’s index would still function on the Kindle as the references link back to the commentary rather than page numbers. Excluding the index from the most popular brand of eReader will greatly reduce the visibility of the index’s importance in future readings of the novel.

The transmission history of the novel is impressive for a text that has just hit its fiftieth anniversary, and it is beyond the scale of the current project to attempt to analyse the list in totality. Nabokov studies has many gifted scholars of translation and auto-translation in Nabokov’s oeuvre who could find the connections between translator and author to relate the choices made by Nabokov in authorising translations. Véra Nabokova’s translation for Ardis Press contains useful footnotes explaining cultural references, clues to interpretations and the importance of having *Zembla* as the last index entry. For example, in the note to line 62, Kinbote receives a message that he has a bad case of “hal s” which Kinbote mistakenly observes for “meaning evidently ‘hallucinations,’ although a malevolent critic might infer from the insufficient number of dashes that little Mr. Anon... could hardly spell.” (C.62, 98) It is likely that Nabokov has planted a linguistic puzzle here for the reader to tease out but this is unlikely to work in Russian. Véra has instead included a note that reveals Kinbote mistakes a cryptic hint about his bad breath (“Дурное дыхание,” an indirect translation of halitosis) for accusations of hallucinations (“галюцинации”).⁶²⁶ These forks are outside the scope of the chapter which focuses instead on remediations that transform the structure of the work through hypertext or resisting this structure. This criterion produces three overarching categories which will be considered in turn: audio versions that stop the reader from flicking back and forth,

⁶²⁵ PF MS 5.1.1028.

⁶²⁶ Nabokov, *Blednyi Ogon'*, C.62n.

artists' books and a plethora of digital editions that attempt to mine the hypertextuality from within the text itself.

Audio Adaptations

Before continuing to analyse the written versions in more detail, it is worth pausing to consider the two audio editions: the Drama on 3 radio-play and the Audible audiobook edition.⁶²⁷ *Pale Fire's* structure relies on many conventions of print culture, in particular the endnote and index. An audio production is also likely to take the reader's agency out of the text as they cannot explore the branching paths that Kinbote offers them and without adequate mechanisms, it would be difficult to replay specific sections of the poem to check the veracity of Kinbote's claims. Due to these limitations, both the audiobook and radio-play depart extensively from the original text and offer some interpretive elements that remove the indeterminacy in the print version. Most prominently, both versions have two narrators assuming the roles of Kinbote and Shade—with matching stereotypical accents—who narrate the commentary and references to the poem respectively. The only exception from this is the end of the radio play which takes great liberties with the narrative's dénouement. The audiobook remains faithful to the print version, including orated exclamation marks from the Foreword (F, 18) and the complete index. The audiobook's primary diversions from the printed text link the commentary to lines 17 and 29 and identify the author of the variants through the narrator, whether Shade or Kinbote. The radio-play is naturally less faithful and includes the variants as spoken to Kinbote by Shade when mentioned. Not only were there time constraints, but the format is dramatised as extracts of the poem are narrated by Shade followed by interjections and monologues from Kinbote. As an adaptation, the radio-play offers characterisation that does not exist in the book such as Shade referring to Kinbote endearingly as "Charley." The poem is prefaced by a much shorter pseudo-foreword which reflects Kinbote's insanity immediately by repeating the mantra "close, careful reading." The greatest deviations are the dramatisations of the post-assassination scenes. Kinbote meets Sybil Shade at the end of the narrative and discusses the end of the poem. Not only has Kinbote not read the end of the poem, but Sybil states "Dr. Kinbote, I would like you to finish your poem" and as long as it is kept in the Library of Congress and then Professor Hurley can create his own edition. Kinbote states that it is a shame that the poem remained unfinished but the adaptation ends with Sybil Shade asserting the final lines were a repetition of the first *four* lines of the poem, bringing the total of the poem up to 1003 lines. This runs counter to any interpretations that arise from the novel. These versions function as adaptations, a form of forking on multiple levels, that problematise the notion of a stable version but are outside of the remit of the following analysis on more straightforward remediations. The adaptation is a transformative rewriting of the original that adds a stronger interpretive function

⁶²⁷ Vladimir Nabokov, *Pale Fire*. Read by Marc Vietor. Vintage Audible, 2010. MP3, 9hr18min.

and although it fits into a forking, is more extensive and outside of the remit of the current thesis.

Artists' Books

The artists' books reorganise the physical text to focus on Shade's poem and the imaginary index cards that contain them. Both editions build upon the premise that Kinbote has provided readers with a record of Shade's index cards, so an active reader can recreate Shade's cards. (F. 13-16) Despite debate around the publication of the Gingko Press edition whether its claim to be the first standalone edition in relation to the Arion edition,⁶²⁸ the first stand-alone edition of the poem can be traced back to the Reinbek bei Hamburg version of 1968 (see table 4). If Nabokov had successfully submitted "The Brink" to *Esquire*, this debate would have been made redundant. The artists' books warp the text by representing it as a facsimile of the holograph manuscript of Shade's final composition. The Arion Press is a fine press collected edition limited to 226 copies in two volumes, the first contains the complete novel and the second smaller volume features the typed poem on fifteen lines index cards. Unfortunately it does not comply with the description in Kinbote's foreword with regards to the information on the card and the colour of the lines (F, 13) and is typed rather than trying to replicate Shade's handwriting. The Gingko edition corrects these mistakes and includes optional downloadable variant index cards.⁶²⁹ Alladaye rejects the methodology of the artists' book as it fetishes the work of a fictional poet as real and, even if we accept that proposition, is based upon the description of a patently unreliable narrator.⁶³⁰ Despite the edition's intentions to represent the work of a fictional poet, it cannot be constructed through evidence that would be dismissed if presented in reality.

A Digital *Pale Fire*

The origins of a hypertext edition of *Pale Fire* precede most other remediations of Nabokov's text and could have produced a moment equal to Douglas Engelbart's "Mother of All Demonstrations."⁶³¹ Ted Nelson was working on a prototype hypertext system, Hypertext Editing System (HES) at Brown University with Andreas Van Dam and additional support from IBM in the late 1960s.⁶³² Nelson picked *Pale Fire* alongside a technical manual and Vannaver Bush's "As We May Think" to demonstrate the potential abilities of HES. Ted Nelson defined

⁶²⁸ Stephen Gertz, "Ron Rosenbaum At Slate Is Wrong About Nabokov's *Pale Fire*," *Booktryst*, July 27, 2010, <http://www.booktryst.com/2010/07/ron-rosenbaum-at-slate-is-wrong-about.html>.

⁶²⁹ Vladimir Nabokov, "Pale Fire: A Poem in Four Cantos by John Shade. Variants," 2011, <http://ns.gingkopress.net/09-lit/vladimir-nabokov-pale-fire.html#cards>.

⁶³⁰ Alladaye, *Darker Shades of Pale Fire*, 32–4.

⁶³¹ See Simon Rowberry, "Vladimir Nabokov's *Pale Fire*: The Lost 'Father of All Hypertext Demos?'," in *Proceedings of the 22nd ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2011), 319–324.

⁶³² Nelson has unfortunately lost track of the dates, but it was certainly between 1967-9.

Pale Fire as “a real hypertext,”⁶³³ and suggested “many authors have used this form for different purposes, none more strikingly than Nabokov in *Pale Fire*.”⁶³⁴ This important document was “archived” for many years,⁶³⁵ and since it was never publicly available, Nelson’s proposal has largely been confined to a footnote in computing history.⁶³⁶ This has not stopped others independently concluding that *Pale Fire* would work well as a hypertext edition.⁶³⁷ Many readers even proposed that a digital edition should be created, but the majority of these proposals were never complete or published but they ranged a variety of platforms including Jimmy Gutermann’s *Storyspace* version and Charles Cave’s Perl adaptation.⁶³⁸ Some designers pushed beyond the boundaries of a hypertext editions. “Josh,” a pseudonymous blogger, proposed for a physical-digital hybrid, whereby a readable print text is supplemented by scanning glyphs on the page, which link to a editable gloss of the text with features to track the reader’s path through the novel.⁶³⁹ Similarly, “Corvus” proposed to transform *Pale Fire* into a “(textless) game,” which would focus on “thematic elements and metaphors.”⁶⁴⁰ In the one project from within the academy, Nakamura and Wakashima from Kyoto University received funding to create a range of pedagogically useful hypertexts including Nabokov’s *Lolita* and *Pale Fire* to “enable readers to make the cross-reference and non-linear reading of these two works.”⁶⁴¹ From a similar perspective, Jerry Friedman and Matthew Roth conceived of a wiki *Pale Fire* concordance to allow users to plot core themes throughout the narrative.⁶⁴² The wide uptake of the Web has led to further digital editions, often made public. Rather than worrying about sharing for copyright reasons, the web coupled with DMCA takedown culture created an environment where users

⁶³³ Theodor Holm Nelson, “IBM D2” (Brown University, 1968), 2.

⁶³⁴ *Ibid.*, 3.

⁶³⁵ Belinda Barnet, “@Ajprescott Not Lost, ‘Archived,’” Twitter, @manjusrii, September 8, 2012, <https://twitter.com/manjusrii/status/244408116618354688>.

⁶³⁶ One of the rare references can be found in Gary Wolf’s controversial profile of Nelson in *Wired*. Gary Wolf, “The Curse of Xanadu,” *Wired*, 1996, http://www.wired.com/wired/archive/3.06/xanadu_pr.html.

⁶³⁷ The earliest archive mention of *Pale Fire* as hypertext appears in a thread by Kathy Strong in a thread on “electronic books” to the newsgroup rec.arts.books on 15 November 1990. 5 years later, Charles S. Harris exclaimed *Pale Fire* was “hypertext at its most artistic in a posting to rec.arts.books in 24 August 1996. Likewise, Michael Bierut describes *Pale Fire* as hypertext’s “first — and only? — undisputed literary masterpiece” in Michael Bierut, “Vladimir Nabokov: Father of Hypertext?,” *Observatory: Design Observer*, November 1, 2004, <http://www.designobserver.com/observatory/entry.html?entry=1797>. Later proposals appeared at seminar at Rutgers in 1996, and a later posting to the academic Nabokov Listserv (NABOKV-L [sic]). John Lavagnino, “Nabokov in cyberspace.” Posting to NABOKV-L. 15 May 1995 and Tom Bolt, “PALE FIRE & HYPERTEXT.” Posting to NABOKV-L, 11 April 1997. In more recent years, there has been a backlash to a hypertext edition of *Pale Fire* on Twitter. For example, Greg Lloyd [@roundtrip], “But IMO it’s more fun...” Tweet. 31 May 2010, <https://twitter.com/roundtrip/status/15115665553> and [@regisl], “HELP!” Tweet. 11 March 2013. <https://twitter.com/regisl/status/311220784960000000>.

⁶³⁸ Jimmy Guterman, “Nabokov hypertexts.” Alt.hypertext. 28 March 1994; Charles Cave. “Creating a hypertext version of *Pale Fire*.” Posting to NABOKV-L, 8 May 2001.

⁶³⁹ Josh, “Pale Fire,” *Paper Bits*, October 21, 2006, <http://metacarpal.net/blog/archives/2006/10/21/pale-fire/>.

⁶⁴⁰ Corvus, “To Play with Pale Fire - Post 00: Man Bytes Blog,” April 9, 2009, <http://web.archive.org/web/20090409161224/http://corvus.zakelro.com/2009/04/to-play-with-pale-fire-post-00/>.

⁶⁴¹ Koichi Nakamura, “FY1998 Final Research Report Summary (English),” 1998, <http://kaken.nii.ac.jp/d/p/09410121/1998/6/en.en.html>.

⁶⁴² Matthew Roth, “*Pale Fire* Concordance,” 2006, <http://palefireconcordance.pbworks.com/>.

felt safe to post their own full-text versions of *Pale Fire*. It is no surprise given Dmitri Nabokov's constant fight with post-USSR collapse pirates that the earliest trace of a web-based *Pale Fire* emanates from a Russian site.⁶⁴³ Following the release of the Russian web-based hypertext, a spate of web editions created for personal use have been shared, in part because there was not an authorised eBook edition until 2012.

Behind every discussion or edition of *Pale Fire*, there must be a rationale for its linking mechanisms. This has cropped up in scholarly discourse, whereby critics have accounted for Nabokov's structure in various ways. The network has been the most popular metaphor and has been used to varying degrees of sophistication, including Brian Walter, Daniel Carter and my own work on visualising this network.⁶⁴⁴ Andrew Ferguson takes a different stance, suggesting that the gaps in *Pale Fire* function as warp zones akin to *Super Mario Bros* that compel the reader to play the text rather than reading it.⁶⁴⁵ Outside of the network, Seth Young has considered a medial analogue, comparing *Pale Fire*'s structure to a vinyl record with locked grooves that keep on repeating particular parts of the record and "often the difference between dead-end and circle comes down to the reader's strategy, e.g., check for 'newly' introduced characters in the index, etc."⁶⁴⁶ This issue becomes concrete when creating a digital edition. The book presents links as unidirectional, with a note at the top of each section of the commentary in the form "*Line x*: <quotation from poem>" such as "*Line 61*: TV's huge paperclip" (C.61). This is different from endnotes that allow for bidirectional linking as the reader can trace the presence of commentary in the poem and back again. The distinction between unidirectional and bidirectional links in the poem is vital to understand the delicate balance between an indeterminate and generative work of art, and a primer for Kinbotean hermeneutics. Endnotes add authority to the interpretation, as it ensures that Kinbote's interpretation is clearly marked. As we have seen in the previous chapter, compositional hypertext favours the author's connections, while receptional hypertext must be built from personal observations. This is encouraged in Nabokov's novel through not including bidirectional links from the poem as this ensures the reader chooses to search for any notes rather than is directed towards them. The novel is presented as a codex with linear page order rather than a database of loose-leaf annotation. This aids the reader in finding their own serendipitous connections rather than following Kinbote's maze. Nabokov was not against such an approach since he allowed it for Alfred Appel Jr's annotations to *Lolita*, although the potential precursor for *Pale Fire*, Nabokov's

⁶⁴³ *SL*, x.

⁶⁴⁴ Brian Walter, "A Guide to Kinbote's Commentary," 2006, <http://www.libraries.psu.edu/nabokov/walter2.htm>; Daniel Carter, "*Pale Fire* Visualization," n.d., <http://daniel.inletters.com/pale-fire-visualization/>; Rowberry, "His and My Reader."

⁶⁴⁵ Andrew Ferguson, "Mirror World, Minus World: Glitching Nabokov's *Pale Fire*," *Textual Cultures* 8, no. 1 (2013): 101–16.

⁶⁴⁶ Seth Young, "*Pale Fire* & hypertext." Response to Bolt, "PALE FIRE & HYPERTEXT!" Posting to *NABOKV-L*, 14 April 1997

translation and annotated scholarly edition of Aleksandr Pushkin's *Eugene Onegin*, did not feature numbered endnotes in the commentary but since nearly every line is glossed, this was perhaps unnecessary.⁶⁴⁷ The print version has a delicate balance that has yet to be replicated by an online version. This is perhaps why there has not been an annotated version of *Pale Fire* to go alongside Appel's *Annotated Lolita*, Baratarlo's *Phantom of Fact* and Boyd's *Ada Online*. Annotations would ruin the delicate balance of the novel and close down interpretive pathways. The forking of the Literary Web into a new format will always transform the text and in this sense; although the linguistic codes will remain intact, the bibliographical codes are greatly disrupted in a way that create a poorer version of the original. *Pale Fire's* hypertextual innovation does not lie in the explicit links set out by Kinbote but rather in the reader learning to subvert these connections and form their own through the structure of the pages, serendipity, juxtaposition and resonances between various sections of the commentary and poem. Adding further links at the level of the text disrupts the reader's ability to make these connections as it removes many of the implicit connections of its physical bindings and the ease of navigation around the pages. The change in format has not only disrupted the bibliographical codes, however, as the new agents of the book who have created that particular version of the text have subordinated other features of the original novel.

Such a complex problem has not been tackled with a uniform approach, as different digital editions have been created for varied purposes. Nelson's requirement for hypertext to be bidirectional is antithetical to the delicate balance of the poem. When Nelson states "to the left of that line we see an asterisk, meaning that the mad critic Kinbote has something to say about it," this asserts the dominance of Kinbote's interpretation of the poem.⁶⁴⁸ Nelson has chosen to emphasise the connection as bidirectional, since he wanted to demonstrate the features of his system, rather than the inherent hypertextuality of the novel. This is an ideological forking of the text. At times this spoils the experience of reading as an asterisk reveals a connection between Shade's "king" and the index entry for Charles II.⁶⁴⁹ This is an interpretive connection that does not appear in the original text. Nelson positions his hypertext system for a re-reader rather than a novice as it spoils some of the main secrets within the novel. That is not to say that Nelson completely dispels the searching tropes and implicit links hidden within the text as he states:

Does Zembla exist? Is Kinbote insane or really King Charles? Did the poet Shade believe he was King Charles? Does the murderer Gradus represent more than just literary critics in general? And where

⁶⁴⁷ Nabokov, *The Annotated Lolita*; Aleksandr Pushkin, *Eugene Onegin: A Novel in Verse*, trans. Vladimir Nabokov, 2 vols., 2nd ed. (Princeton: Bollingen/Princeton University Press, 1990).

⁶⁴⁸ Nelson, "IBM D2," 4.

⁶⁴⁹ *Ibid.*, 5.

are the crown jewels hidden, anyway? The answers may be hidden in the hypertext. We leave these matters to the searching reader⁶⁵⁰

Nelson does not want to reveal the secrets a reader will discover in their first couple of readings. His enterprise was a mixture of demonstrating the power of his system but also acknowledging the dominance pre-determined links have over other interpretations of the text. Later interpretations have been looser in their creation of connections. Both of the eBook editions and two of the web editions (TiddlyWiki and Kazinin's original Russian) feature bidirectional linking between the poem and commentary. Further to this, the iBooks version also includes links from the index to the poem, although the references link to the commentary as Zembla does not explicitly appear in the poem. A further important distinction to be made is discussed by Shannon Chamberlain's rationale, in which she admits that she is a Kinbotean reader: "I've made a conscious decision to play Nabokov's game and follow Kinbote's instructions to the letter [...] If you're going to read the book Kinbote's way, you should do what Kinbote says. This means using the hyperlinks from the commentary to the poem, not the other way around."⁶⁵¹ This form of interpretation, as the most common one, since it repeatedly reinforces the Kinbotean perspective, is problematic for first time readers who may not want to follow these links. Although Jimmy Guterman did not offer his methodology for linking in *Storyspace*, the software allows invisible links that could be used in order to allow the experienced reader to jump between connections that they know exist. This would not degrade the first time reading experience, while offering shortcuts for those who want them. Outside of the linking mechanisms that are central to a hypertext edition, the other more adventurous designers have other balance issues to consider.

The editions that move beyond hypertext features move beyond a forking and into an adaptation with different features. The physical-digital hybrid proposed by "Josh" featured the ability to comment on the text and build further paranoid comments on Kinbote's observations. This sort of editable, extensible resource has recently been created through the publication of "Pale Fire" on Poetry Genius, a social network whereby interested users can annotate poems.⁶⁵² A further adaptation is that of Richard Davis's TiddlyWiki edition of the poem which replicates the index card layout of the text:

I have imitated, as far as possible, Shade's practice of heading each card with the date, simply because this feature is already part of the

⁶⁵⁰ Ibid., 6.

⁶⁵¹ Shannon Chamberlain, "Pale Fire FAQ," accessed October 3, 2009, <http://www.shannonrchamberlain.com/palefirefaq.html>.

⁶⁵² Poetry Genius and Vladimir Nabokov, "John Shade – Pale Fire: A Poem in Four Cantos," 2014, <http://poetry.rapgenius.com/John-shade-pale-fire-a-poem-in-four-cantos-annotated>.

way TiddlyWiki works by default. (We can infer the dates on *most* of the cards from Kinbote's commentary).⁶⁵³

Through the use of a platform that requests a date for each entry, Davis has included dates at the top of every "index card" and thus creates the experience of composition of the poem rather than a straightforward reading of the poem. The project is closer to the artists' books than a hypertext edition in form and can be seen as an adaptation.

Since the problem of a digital edition of *Pale Fire* has been tackled by many, it is worth considering in greater detail the roadblocks and problems they have faced when either conceptualising their project. Most significantly, international copyright law still protects *Pale Fire*, since it was only published just over 50 years ago. This has not stopped some of the proposals suggesting that the Nabokov Estate would be welcome to contact them to discuss sharing the document more publicly—an unlikely proposition. That is not to say that the Nabokov Estate would be totally against a worthy proposal, since they granted Ted Nelson permission (although under different conditions) and Brian Boyd's *Ada Online* offers a free copy of Nabokov's longest novel. A secondary concern of the edition is how to get the text into a digital format. This is a common problem for authorised publishers too since the original text was set mechanically, and one can see errors creeping into the transcription process for the eBook versions of the novel. Richard Davis's TiddlyWiki adaptation, the oldest English-language digital version aptly derives from the original Weidenfeld edition. This is clear from the page structures of the nodes, which match the page breaks of the 1962 text as well as Davis' note. Davis leaves further traces of the automation of his production as some of the faulty Optical Character Recognition (OCR) has remained in the finished product such as "tile window," "lor tile," "experincced it," "tile skill" and "111y fall." The OCR evidently has problems with distinguishing the difference between "the" and "tile" and "My" and "111y" in the small type of the Weidenfeld edition. Recently Whitney Trettien has argued such marks exist as the zombie remnants of print culture as the characters that undergo digitisation must initially be treated as images, rather than manipulable digital objects.⁶⁵⁴ This digital textuality shapes the edition and requires human intervention that is often lacking at the level of the amateur edition. Figure 18 shows the difficulties of OCRing this particular edition.⁶⁵⁵ The algorithms running behind the OCR can handle line breaks, but when it comes to italicised text or the differences between "M," "W" and related symbols, the mechanisms begin to break down. This needs careful human post-processing as these errors may not necessarily be noted by automated procedures.

⁶⁵³ Richard Davis, "Using TiddlyWiki as a Hypertext Engine for *Pale Fire*," *PALE FIRE by Vladimir Nabokov - An Experimental Hypertext Edition*, January 18, 2007, <http://palefire.tiddlyspot.com/>.

⁶⁵⁴ Trettien, "A Deep History of Electronic Textuality."

⁶⁵⁵ The Google Drive OCR was used for this particular experiment.

Pale Fire, a poem in heroic couplets, of nine hundred ninety-nine lines, divided into four cantos, was composed by John Francis Shade (born July 5, 1898, died July 21, 1959) during the last twenty days of his life, at his residence in New Wye, Appalachia, U.S.A. The manuscript, mostly a Fair Copy, from which the present text has been faithfully printed, consists of eighty medium-sized index cards, on each of which Shade reserved the pink upper line for headings (canto number, date) and used the fourteen light-blue lines for writing out with a fine nib in a minute, tidy, remarkably clear hand, the text of his poem, skipping a line to indicate double space, and always using a fresh card to begin a new canto.

The short (166 lines) Canto One, with all those amusing birds and parhelia, occupies thirteen cards. Canto Two, your favorite, and that shocking tour de force, Canto Three, are identical in length (334 lines) and cover twenty-seven cards each. Canto Four reverts to One in length and occupies again thirteen cards, of which the last four used on the day of his death give a Corrected Draft instead of a Fair Copy.

A methodical man, John Shade usually copied out his daily quota of completed lines at midnight but even if he recopied them again later, as I suspect he sometimes did, he marked his card or cards not with the date of his final adjustments, but with that of his Corrected Draft or first Fair Copy. I mean, he preserved the date of actual creation rather than that of second or third thoughts. There is a very loud amusement park right in front of my present lodgings.

We possess in result a complete calendar of his work. Canto One was begun in the small hours of July 2 and completed on July 4. He started the next canto on his birthday and finished it on July 11. Another week was devoted to

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Figure 18 The Foreword of the Weidenfeld edition and the results of OCR

The other amateur projects do not feature such explicit OCR errors, but there are still traces of the copying process, and none more clear than the Lipon edition. Both Chamberlain and Tundrasquid use the Vintage edition, but Lipon does not declare which edition he uses to create his version. A collation of Lipon's edition compared to Chamberlain's reveals the presence of many typographical errors that have been replicated by the two that indicate that Lipon has copied Chamberlain's text and only corrected certain errors. Lipon has carefully corrected the errors in the poem, as his remediation is an attempt to showcase his poetic reading, but the commentary does not receive the same attention. Over 350 of the errors unique to Chamberlain also appear in Lipon's version and only 10% of errors which originate from Chamberlain's edition have been corrected in Lipon's update. Moreover, a closer examination of the presence of an absurd variant in both editions is the result of copying rather than a fluke. In the opening paragraph to Kinbote's commentary (C.1-4), he states "We can visualize John Shade... [as] he picks up from the turf that compact ovoid body" while this has been transformed to "he picks up from the turd" in both the Chamberlain and Lipon. This typographic error is difficult to attribute to a single factor, as there is a chance it is corrected OCR, but equally, a human reader is unlikely to decide that "turd" is preferable to "turf" in this context. Nonetheless, these marks suggest that Lipon has reused Chamberlain's cleaned version of the text rather than attempting the intensive process of digitisation himself. This reveals the importance of proofreading on the reading experience. A similar phenomenon can be noted in the pirated PDFs, which all originate from the 2010 Vintage eBook as the metadata remains on both the copyright page and the file information. If the edition has not started with the original Putnam's with consultation of Nabokov's corrections, the edition is likely to proliferate pre-existing errors.

A further departure for these various texts is their technological build for both the composition and reception. The reception is slightly more straightforward for comparison as they all appear as HTML or eBooks other than TiddlyWiki. Luckily, the Kindle and iBook editions both come from the ninth edition of the Penguin version and can be traced back fairly closely to their print transmission history. The composition is more difficult to trace for many of the versions. The Tundrasquid version reveals the most information about its composition history as the metadata in the HTML indicates that the project began its life in Microsoft Frontpage 4.0 and this is confirmed by a couple of the incidentals that read as though they have been run through Microsoft Office spellcheck such as "student who" being transformed into "student that." The other HTML versions do not bear the marks of their composition processes but can be compared on the length of the pages themselves. Tundrasquid and Lipon separate their nodes of the commentary into separate pages, while Chamberlain has included the section as a single page. Chamberlain's layout is more amenable to serendipitous discovery as the reader can navigate the page, or even search for terms, and discover new connections, while having the separate chunks gets rid of some of this ability. That is not to say that this format is preferable.

One of the benefits of a digital edition has only been stated in Josh's proposal for an edition that tracked the reader's movements through the text. Effectively, any digital edition gives us a far greater range of data on the reception of this text and the way in which people read it, and equally importantly, the point at which they stop reading. This record of activity enabled through trackbacks allows the reader to observe the differences between their first-time reading and rereading of the text, providing quantitative evidence of variation in reading paths. None of the pre-existing versions have released data on their use, and it would not be systematic enough since most users would not be tracked over sustained visits. In order to study rereading empirically, such a standardised form of tracking would aid our understanding of the novel. This would be invaluable data for assessing Nabokov's comments about readers and re-readers as it would give empirical evidence of first-time and second-time reading paths. Andrew Ferguson compares the strategies of explaining traversals of *Pale Fire* deployed by critics such as Brian Boyd as the equivalent of the documentary phenomenon of "Let's Plays" in videogames, whereby the user is guided through the game (or narrative) in this case, in order to experience the text in the same way as the recorded user.⁶⁵⁶ Most famously, Boyd starts his two interpretations of *Pale Fire* in his biography of Nabokov and later in the book dedicated to *Pale Fire* through noting one of his playthrough of the foreword in which he follows the link to the note to line 991 that further leads to the notes to lines 47-48, 691 and finally back to 991.⁶⁵⁷ There are many ways of reading the text that do not follow this pathway, but this would be a speedrun of one aspect of the novel as it tells the reader immediately that Kinbote is the King of Zembla without having to wait to find out his secret. This is a pervasive way of looking at the reception of the novel that is often undermined for discussing the results rather than adequately mapping out the intermediary steps. All too often this basic reception information is ignored by critics in order to note a synchronicity between two disparate sections of the novel without explicating how they got there. An authoritative digital edition with the ability to track reading paths would be a useful corrective for this.

The form of the page in the print edition is equally important in making connections, as occasionally connections can be made on the same page or opened recto and verso. In the 2000 Penguin edition, for instance, the notes to line 376 and 347-348 both refer to T.S. Eliot appear in close proximity, creating an unintentional link, although C.376 does so implicitly stating "I believe I can guess (in my bookless mountain cave) what poem is meant; but without looking it up I would not wish to name its author." (C.376) As the 2000 Penguin edition was the first copy of the text I had encountered, I had assumed that this was an intentional use of the page in order to undermine Kinbote's editorial ability, but was disappointed to learn that the larger

⁶⁵⁶ Ferguson, "Mirror World."

⁶⁵⁷ Boyd, *VNTAY*, 425-426; Boyd, *Nabokov's Pale Fire*, 19-21.

typography in the Putnam's edition pushes the second gloss over the page. The three authoritative texts—the Putnam (and off-prints), Vintage and Library of America editions—do not feature the resonance as the reader must turn the page in order to read the second note. Of the other editions examined, the cheap reprints all feature the two annotations on the same page or spread. In the digital editions, all but the eBooks chunk up the nodes into separate pages, so the connection is harder to make and the eBooks rely on the reader having the settings in a peculiar set-up to see similar results. This anecdotal example demonstrates the importance of the edition one encounters in interpretation and the user's own experience with the text. It is likely the reader would meet this juxtaposition anyway with a linear reading as there are no cross-references blocking the way other than another note on John Shade's rhyming patterns (C.367-370). The two-dimensional page allows the reader to make these serendipitous connections that may not be possible if flattened out by the screen. Davis' TiddlyWiki adaption is more ambitious in its transformation as it tries to manifest the mechanisms of shuffling the text. Davis' compromise is to use premade software in order to achieve the desired effect, which necessarily restricts some of the possibilities. Nonetheless, Davis runs into problems when he attempts to reconcile the structure of Shade's index cards in the same format as Kinbote's commentary. The materiality of the index card suits the format of the short node, but Kinbote's Foreword is chunked up according to the pages of the 1962 which include broken words, a phenomenon which did not need to be accurately replicated. Similarly, many of the incidentals from both print and digital versions revolve on the justified line breaks of the original text, which introduced variants such as "mid-summer" (F, 19). This has been corrected only in the few places that have examined the original manuscript or corrections such as the Vintage and Library of America editions. Where the manuscript is consistent with the published version, it is clear that many of the ambiguous hyphenated line breaks were printing artefacts rather than Nabokov's intentions, who tended to be lax with his use of hyphens when writing. The most extreme uptake of this is Penguin's Kindle version, which has been directly transferred from the print version, leaving line dashes in place when none is necessary for words that lie outside of the usual problems. These are marks that remind the reader that they are engaging with a text produced before mass digitisation and it is easy to keep these traces of print culture in later editions simply because they appear to be correct. Davis' editions most impressive achievement is the ability to sequence reading in various ways as the currently called node stays on top until it is replaced with the previous, thus one has their own pathway through the text. The materiality of the technology radically alters our experience.

Designing a Read-Write *Pale Fire*

The study of *Pale Fire* as an exemplar has revealed the ways in which Nabokov has critiqued the agents of the book trade and his concern for his reception, but it has also demonstrated that

despite the great deal of attention that has been paid to Nabokov's novel as hypertext, we still lack the resources to effectively deploy this knowledge to a digital edition. Since Nabokov's text is designed as a receptional hypertext rather than a compositional hypertext—since the links are often unidirectional and can be subverted by the formatting of the document itself—we need to consider how the rereading of the novel can be transformed into a rewriting of its form effectively. We should keep in mind that Nabokov effectively did the same thing when writing the novel, as he thoroughly revised the hypertextual structure of the text from manuscript to published text. Perhaps surprisingly, the manuscript features more links than the final version, but the composition of the two are different. The manuscript has fewer cross-references to other notes and a far greater amount of index entries. This is unsurprising given the inside-out revision process and that Nabokov may not have realised some connections until he rewrote and reconsidered sections when the whole text was complete. Between the manuscript and publication, Nabokov made Kinbote a more egotistical linker as he removed some additional references to the commentary and index entries and instead created a more intricate network within the notes. Thus, we can see Nabokov rewrote the text through his rereading in a way that influenced our reception of the novel.

It is impossible to create a receptional hypertext without rewriting the original, but we need the tools to do so. Nabokov had the index cards and the processes of composition to come up with a more Kinbotean form of connections. The study of pre-existing digital versions of *Pale Fire* offers the following features as desiderata: (1) keep the explicit visible links to those that are marked in the novel since anything more ruins the balance of the novel, unless such options can be opted-out of; (2) the materiality of the page is important in the construction of the narrative, either keep it in a flexible manner or ensure that various elements can be juxtaposed; (3) allow the reader to see the path they have taken, if possible, ensure such data is available to researchers in a generalised manner to understand readers with varying levels of knowledge of *Pale Fire* read the text rather than just those who have been reading the novel for several decades; and (4) offer the ability to create readings and playthroughs of the novel to share as a corrective to the use of compositional hypertexts. This technology may not have been available for those who designed earlier editions, but is certainly technologically accessible now.

The design issues of the text require more careful examination from a hypertext perspective. Most of these potential problems revolve around the utility of unidirectional and bidirectional links to take advantage of the explicit links in the network. There are two more advanced issues to consider in the design of such a text that allows the reader to be more fully involved in the text, while not interrupting the design of the original in ways that the addition of bidirectional links from the poem to the commentary. First, the resonances between the poem and commentary can be amplified through transclusion and stretchtext stemming from a built-in

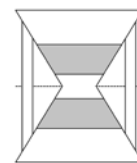
mechanism in *Pale Fire*'s textual apparatus. Second, the most important feature of *Pale Fire*'s hypertext is the use of implicit links that the reader must discover through rereading to recombine Nabokov's work, rather than simply immediately understanding everything in its context. Through designing a prototype edition of *Pale Fire* through these principles, the textual resonances can be amplified without distorting the narrative coherence for a first time reader while allowing re-readers to highlight and expand the traversals their readings of the novel are reliant upon. Transclusion would not stray too far away from the original makeup of the text. For each line of the poetry glossed or commented upon by Kinbote, the reference is noted not only by a line number but also a snippet of text from the corresponding section of the poem. In a hypertext system, the reader could click on that link to see the expanded version of the poem related to that specific snippet to see the context of Shade's poem in relation to Kinbote's ramblings. This does not mean the reader can see the links within the poem but rather can get an expanded view of the poem in context of the note.

The central concern of a rigorous read-write hypertext edition of *Pale Fire* must be the balance between implicit and explicit connections within the novel. As Nabokov was a proponent of rereading and discovering through active reading, it makes no sense to ensure that the first time reader will understand every mystery within the text, particularly since they will not be able to understand the context in which these discoveries will be found. Of course, Nabokov has intricately designed networks within the novel which aid the reader's understanding, but what is missing is the semantics often. Kinbote will instruct the reader to find another note but will not explicitly state what the reader should find there, other than perhaps foregrounding his encounters with Gradus and the linear stories he weaves through the commentary. The first part of the interpretive hypertext the reader must build therefore is the semantics of the connections and looking at what aspects of the text Kinbote does not link into, which surprisingly enough are those nodes that offer plain information rather than progress Kinbote's plot. Any sufficiently sophisticated interpretation of the novel will have to go beyond the network offered and create its own pathways through serendipitous discovery and juxtaposition of various elements. One of the most obvious ways in which this might be expanded that would also allow the interested reader to juxtapose the poem and the commentary would be to include the option of viewing two parts of the novel side-by-side in a spatial hypertext. This would allow the reader to navigate the text while leaving the traces on the other side. This could facilitate the creation of new connections while not disrupting the balance of the text. Furthermore, with the ability to annotate the text and move sections side by side, the reader gains a lot more out of the novel than a version that has HTML links that do not fully indicate every connection on a single page.

The case study of the read-write history of *Pale Fire* has revealed how the Literary Web can be used as a practical model for the analysis of literature. This can take several forms, such as looking for traces of the Literary Web within the novel, most prominently in the structure of *Pale Fire* as well as the presence and disdain of agents of the book trade. Moreover, the Literary Web can be used as the basis for bibliographical and book historical research to focus on the particular layers of the Literary Web and how they affect the rest of the model. The example of *Pale Fire* was chosen in order to focus on digital appropriations of a complex physical hypertext. These appropriations try to generate their hypertextuality through some inherent artefact within the text, particularly the links already available through Kinbote's commentary rather than exploring the implicit networks and the ways in which their own readings and rereadings add an ancillary network to the text. The platform is important, as well as the textual transmission history in order for the reader to fully appreciate the textures of the text. The technology of the original and the fork must be carefully considered in unison in order to create a resource that does not simply create hypertext from an authorial perspective while restricting the reader's options. The final chapter will revisit the distinction between compositional and receptional hypertext and how the two can be reconciled and expand into future forms of hypertext design.

Chapter 5: The Archive And The Circus

The preceding chapter has demonstrated how the Literary Web model can be used as a combination of traditional literary criticism and book historical methodologies to analyse a single text through multiple manifestations. The final chapter returns to hypertext as the central issue of the thesis. Hypertext emerges from two layers in the Literary Web Model: the processes of composition and reception. From the survey of hypertext scholarship in the literature review, it is clear that the majority of extant literary hypertext projects were envisioned and ideologically encoded by discourse around the reader's freedom by offering them multiple, pre-set pathways through the text. As with the digital editions of *Pale Fire* discussed in the last chapter, compositional hypertext is often more restrictive than the codex as it forces the reader down certain pathways. The three major projects associated with digital hypertext's incunabular stage—Vannaver Bush's Memex, Ted Nelson's Xanadu, and Douglas Engelbart's Online System—all have archival functions at their heart. These ideologies and systems favour the conditions of compositional hypertext. As Terrence Harpold succinctly states, "hypertext is [...] a practice of composition: hypertexts comprise other textual objects."⁶⁵⁸ This does not necessarily have to be the case, as there are hypertexts that allow for creative impulses, akin to the circus. The chapter argues that a richer understanding of what connects (and disconnects) these two forms will aid our understanding of hypertext through exploration of speculative hypertext designs, which question the essence of both compositional and receptional hypertext. Furthermore, through reading the social aspects of a platform that is primarily archival, Amazon's Kindle, the thesis will pose how this activity is already becoming a normal part of many readers' everyday practice and how the possibilities for hypertext are growing as readers are given greater access to digitised print materials as well as the increasing volume of born-digital material.



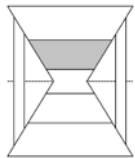
This chapter introduces a more nuanced approach to analysing the main two sites of hypertext emerging from the Literary Web hourglass. This is predicated on the ability to distinguish between compositional and receptional hypertext. The previous chapters have offered a framework for understanding that the work-in-progress and exploratory hypertext is essentially different from those unexpected uses and connections that spill outside of systems. Although there is some overlap in the two major concepts, the chapter poses the playful idea of the *hypertext circus*, a site of receptional hypertext that can spill out into multiple zones, and the *digital archive*, which exists primarily to document a pre-made taxonomy with little provisions for re-use. Of course, many digital archives are more fluid than this binary, but the essential thrust of

⁶⁵⁸ Terrence Harpold, *Ex-Foliations: Reading Machines and the Upgrade Path* (Minneapolis: University of Minnesota Press, 2009), 15.

the chapter is that of keeping data locked down within a single framework, often for a single purpose, and the sharing of data and re-use of such sources in order to create receptionally interesting hypertexts.

The Archive

The archive is a comforting metaphor for hypertext systems as it suggests a body of text that can be reconfigured by the user, as the archive does not exist in a stable state. In both physical



and digital archives, the user is allowed to organise data in a variety of ways on a temporary basis: in a physical archive through leafing through materials and through the use of search facilities in a digital environment. Conversely, it also facilitates fixity at the point that the archive is a historical entity; archives can be

closed entities and may not accumulate new data. New acquisitions for an archive are likely to be curated by a closed team rather than open for unsolicited submissions. Further to this, the archive might also exist in a closed archive, restricting access to those who have permission. As Harpold argues, hypertext requires text, but this does not necessarily restrict the ability of the reader to construct receptional hypertext. The archives normally do not include the text in their published forms, but rather the documentation and processes that surround them. Any published artefacts are usually specimens unavailable elsewhere. Bush, Nelson and Engelbart knew from their early visions of hypertext that the archive needed tools to augment, add trails or facilitate transclusion rather than overwhelm the reader with an unconnected archive. The goal of such projects was the meta-document containing all documents envisioned by Borges. Large digitisation archives such as Google Books demonstrate how these tools are required, as “Digitization does not lead in any simple or straightforward way to the democratization of knowledge.”⁶⁵⁹ It is important to consider the deeply archival nature of these projects, as they often make specific ideological choices in the content they choose to digitise. “Google Books is the perfect Joyce machine because it is completely catholic in its choices. It seems to be just as omnivorous as Joyce himself was in his reading, making no distinctions between the seriously scholarly and the pleasantly trivial.”⁶⁶⁰ These digitisation projects can be viewed in terms of proximate hypertextuality. Curation functions as a form of macro-level connection as it indicates similarity between disparate sources. Google Books is different because the only distinction is that the content on Google Books has to resemble the rather general description of a “book” including serials, pamphlets, grey literature and a range of other digitised materials rather than any thematic connection. Although the archive can be remixed and recombined in innovative ways and through inter-archival connections, it requires additional tools in order to

⁶⁵⁹ Folsom, “Database as Genre,” 390.

⁶⁶⁰ Geert Lernout, “Joyce World-Wide Intertext,” *James Joyce Quarterly* 47, no. 2 (2010): 247.

allow the texts to be transformed receptionally. The reader's agency is reduced to exploring the material in ways the curator would prefer.

The juxtaposition between the digital archive and the hypertext circus requires careful exposition of the ontology of the digital archive itself. Archives are primarily concerned with storage rather than access. The items within the physical archive have been arranged by some pre-determined order, usually files, folders and boxes. The user can rearrange these items to a certain degree and alter the reading experience for the following reader. The digital archive, meanwhile, has a greater level of fixity, as the enterprising user cannot alter the underlying logic. Moreover, the physical archive allows for the presence of uncategorised objects of material importance such as dust and paperclips that are left out of the strict taxonomy imposed upon the categorisation of documents in the digital archive. When Mark Sample describes Don DeLillo's archive as "an old-fashioned archive," one that "*cannot be conquered by digital means*,"⁶⁶¹ we can see how the unruly nature of the physical archive cannot be satisfactorily replicated in the digital realm. The taxonomising and careful databasing of digital archives is a way of "conquering" the vastly complex materiality of the archive into rigorous structural forms. Archives which are "interconnected, and globally extensible" offer the opportunity to replicate the messy sprawl of the physical archive, where users can reconfigure the materials in previously unexpected ways.⁶⁶² A noteworthy shift has taken place with the digital archive on the Internet however, as Ernst states, the "system of technological protocols" running the Internet turn everything into the archive and shape the ways in which we access the world's knowledge.⁶⁶³ Ted Nelson was pushing for similar forms of innovation with his Xanadu system 50 years ago.

Xanadu and the Invention of Lying

The first generation of hypertext systems primarily concentrated on archival preservation. Ted Nelson's Xanadu offers an exemplar of the archival impulse in early hypertext design. Given Nelson's predilection for attacking the Web as a dumbed down version of his initial design and even suggesting that his collaboration with IBM and Brown University for the Hypertext Editing System was the moment that it all went wrong for hypertext, it is unsurprising that Nelson's hypertext ideology still revolves around these archival principles.⁶⁶⁴ Transclusion, which Nelson defines as "the same content knowably in more than one place," is one of Nelson's forms that has not received widespread use, and certainly the one with which Nelson would like

⁶⁶¹ Mark Sample, "Unseen and Unremarked On: Don DeLillo and the Failure of the Digital Humanities," in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis and London: University of Minnesota Press, 2012), 195. Emphasis mine.

⁶⁶² Anne Burdick et al., *Digital Humanities* (Cambridge: MIT Press, 2012), 45.

⁶⁶³ Wolfgang Ernst, *Digital Memory and the Archive*, ed. Jussi Parikka (Minneapolis: University of Minnesota Press, 2013), 85.

⁶⁶⁴ Nelson, in personal correspondence with Barnet, noted that he was "very sorry I didn't leave the first day" of the HES project. Belinda Barnet, *Memory Machines: The Evolution of Hypertext [Kindle Edition]* (London: Anthem Press, 2013), loc. 3753.

to challenge the hegemony of the link.⁶⁶⁵ In Nelson's view, the one-way link does not offer enough information or context to remain the dominant form of hypertext. The link has remained the most popular hypertext device since it is convenient to implement. Rather than pointing to pre-existing content, transclusion instead embeds the content into the new context, "so the material is not copied from the original; it remains in the documentary space of the original and is brought anew from the original to each reader."⁶⁶⁶ This is a fundamentally archival activity, as it does not facilitate *transformation* or other forms of hypertext that have flourished in the years since Nelson described his initial vision for the new computational world. Harpold argues that "Nelson's conception of the docuverse as an unbounded exteriority decentered Bush's archive but did not surrender its clanking, clattering machinery."⁶⁶⁷ Nelson's seductive rhetoric often demonstrates the need for something new or attacks pre-existing structures, but the solutions are often too grand and overarching to extend beyond the purely archival in practice.⁶⁶⁸ Nelson's discussion about transclusion proposed an archival ethos for hypertext that became a template for companies such as Facebook and Netflix. The websites function as archives, whereby users may explore the silos of data internally but cannot reuse them externally, apart from limited means sanctioned by the original sites. In *The Future of the Internet*, Jonathan Zittrain poses these information silos against the generative nature of early computing.⁶⁶⁹ For hypertext, this can be seen in the lack of extensibility in the way in which we can reuse data that is vital to create receptional hypertexts, since as William Gibson famously wrote in "Burning Chrome," "the street finds its own uses for things."⁶⁷⁰

The type of hypertext that Nelson supports is based on the materiality of the archive and the way in which the original context must not be disturbed. Nelson's ideology focuses on the need for conservation rather than recontextualisation. Transclusion emphasises affirming the history of the text and ready-made connections rather than the generation of new knowledge. Nelson has argued, for example, "Anthologies, wikis and mashups are essentially identical [... as the]

⁶⁶⁵ Theodor Holm Nelson, Robert Adamson Smith, and Marlene Mallicoat, "Back to the Future: Hypertext the Way It Used to Be," in *Proceedings of the Eighteenth Conference on Hypertext and Hypermedia* (New York: ACM, 2007), 227.

⁶⁶⁶ Theodor Holm Nelson, "Opening Hypertext: A Memoir," in *Literacy Online: The Promise (and Peril) of Reading and Writing with Computers* (Pittsburgh and London: University of Pittsburgh Press, 1992), 55.

⁶⁶⁷ Harpold, *Ex-Foliations*, 11.

⁶⁶⁸ "No system of paper-- book or programmed text-- can adapt very far to the interests or needs of a particular reader or student" in Theodor Holm Nelson, "Complex Information Processing: A File Structure for the Complex, the Changing and the Indeterminate," in *Proceedings of the 1965 20th National Conference* (New York: ACM, 1965), 96; "Hierarchy is wrong and insufficiently general. Vital forms of information structure cannot be properly represented by hierarchy - such structures as parallelism, cross-connection, interpenetration and polypresence (on item in many places)" in Theodor Holm Nelson, "Structure, Tradition and Possibility," in *Proceedings of the Fourteenth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2003), 1; "Transliterary structure is meant to be the fullest generalization of documents, intended to represent all possible documents structures, and to deal with the vicissitudes of change, versioning and copyright" Nelson, Smith, and Mallicoat, "Back to the Future," 228.

⁶⁶⁹ Jonathan Zittrain, *The Future of the Internet* (London: Penguin, 2009).

⁶⁷⁰ William Gibson, "Burning Chrome," in *Burning Chrome* (London: Voyager, 1995), 215.

xanalogical structure connects each portion with its original source.”⁶⁷¹ This statement fetishises the archive as these structures are only identical in the fact that they link to some historical document. The structure of the *new* content is equally important for the hypertext structure and it is through the process of decontextualising (from the source material) and recontextualising (through the juxtaposition with new content either through proximity or integration) that the hypertextual structure gains its meaning. If we re-examine the three structures that Nelson posits as identical, we can see how they begin to differ. Anthologies and mash-ups work through their recontextualisation within a wider text. Anthologies maintain the structure of the original in a truncated form, while mash-ups may feature the original text more extensively but interwoven into a new context and almost unrecognisable at times. Unfortunately, Nelson’s description of a wiki is inadequate to offer a full break-down of the reconstruction, but nonetheless, when wikis use transclusion, it is often for creating a template rather than extensive reuse of the same text.

Transclusion itself can only be applied to a minority of situations where such a mechanism might be useful. A direct one-to-one correlation between original and new context does not represent the majority of structures that could be viewed as hypertext. In book historical terms, transclusion supports the approach of traditional bibliography instead of acknowledging the natural mutation of a text in its recontextualisation. On the level of allusion, reference, parody, pastiche and the many other terms that encompass the range of transformations a text can undergo, transclusion is far too narrow, as the information must appear exactly the same. Such a system would ignore the intricacies of Nabokov’s inversion of Tolstoy’s opening to *Anna Karenina*, the title of which Nabokov recontextualises as *Anna Karenin*. Nabokov warps Tolstoy’s “Happy families are all alike, every unhappy family is unhappy in its own way” into “All happy families are more or less dissimilar; all unhappy ones are more or less alike,”⁶⁷² although he uses quotation marks to denote direct reported speech. This parodic inversion denoted by reference to direct quotation would not be possible within Nelson’s system of transclusion as a direct quotation would immediately be discovered to be false or the link would not be created. Since *Ada* continues with a very unhappy family, in a unique manner, the reader is likely to understand that this ironic inversion is once more inverted by the narrative of Nabokov’s novel. Essentially, what transclusion removes is the creativity of lying or manipulating a quote. Although this may make sense in many cases, such as factual reporting; as a literary device, or for forgeries or forking, an immediate reference to the authentic text would destroy the illusion. Such an approach to textuality lacks nuance as it assumes that everything reported should be true and stable.

⁶⁷¹ Theodor Holm Nelson, *Possiplex* (Hackettstown: Mindful Press, 2010), 352.

⁶⁷² Leo Tolstoy, *Anna Karenina*, trans. Richard Peaver (London: Penguin, 2003), 3; Vladimir Nabokov, “Ada,” in *Nabokov: Novels 1969-1974* (New York: Library of America, 1996), 3.

The Hypertext Circus

If archival hypertexts depend on the stability of the text, receptional hypertexts can be much more playful and emphasise the discovery of serendipitous connections. The playful nature of these sites is vital, as receptional hypertext must not simply restrict itself to recreating the conditions of archival hypertext through the use of the same tools. Before proposing the hypertext circus, it is worth initially considering the convergences between the semiotics and history of the circus with the type of hypertext activity that emerges from the hypertext circus. Most importantly, returning to a definition in chapter one, there is an underlying anarchy and sense of chaos in the portrayal of receptional hypertext and the circus. As Helen Stoddart states, “circus is, above all, a vehicle for the demonstration and taunting of danger and this remains its most telling and defining feature.”⁶⁷³ Both the circus and playful forms of hypertext favour non-conformance and quirky new performances.⁶⁷⁴ Furthermore, receptional hypertext contains an overwhelming amount of variety, similar to the simultaneous spectacle of the circus that took place over several different rings.⁶⁷⁵ While discourse about openness and inclusivity in the digital humanities has concentrated on the metaphor of the big top, the circus also spilled out “into separate but adjoining tents with the ‘big top’ being used for the main show, an adjacent smaller menagerie tent (for the exotic animals and ‘freak show’) and side show tents.”⁶⁷⁶ The language of the circus provides the new type of playful hypertext proposed by this thesis with a rich history and offers an analogy that offers a mixture of the playful and the extraordinary.

As per the Literary Web model, if the archive exists at the level of publication with the widest audience, the hypertext circus functions most effectively at the level of a single user’s creation. Ted Nelson supports this kind of playful form of hypertext and facilitating these connections through a call for “*thinkertoys*” which “would be necessary for holding hypertext.”⁶⁷⁷ Nelson does not explicitly state what the neologism means, but the combination of play and careful thought is important for good hypertext design. The pre-ordained structures that are essential to maintain the stability of compositional hypertexts do not allow for the playful environments in which receptional hypertext can flourish. As reception is a heterogeneous entity, there is less need for explicit structures as each reader will encounter and understand the text in their own way. A typology of deixis in hypertext will demonstrate how receptional hypertext can appear and break free from the pitfalls of compositional hypertext.

⁶⁷³ Helen Stoddart, *Rings of Desire: Circus History and Representation* (Manchester and New York: Manchester University Press, 2000), 4.

⁶⁷⁴ *Ibid.*, 89.

⁶⁷⁵ *Ibid.*, 42.

⁶⁷⁶ *Ibid.*, 22.

⁶⁷⁷ Nelson, “Opening Hypertext,” 48.

Deixis is the semantic concept that relates to relationship between objects through “‘pointing’ via language.”⁶⁷⁸ The ‘pointing’ referred to in deixis can be the ‘that’ in a sentence as well as abstract descriptions of place, time and state of being. A pointing mechanism connects at least two parts of text, and thus deixis fits within the framework of hypertextuality and is often the point of departure from which the link works in the language of ‘click here’ or ‘follow this link.’ The link between hypertext and deixis has previously been discussed in scholarship by several critics. Ingrid de Saint-Georges has analysed the deictic markers of personal homepages and discovered that webpages are full of spatial, temporal and personal deictic markers that entice the reader to traverse the webpage in totality.⁶⁷⁹ Dan Loehr develops a richer framework through which to describe the special kind of deixis that hypertext evokes:

Just as ordinary deictics can not be fully evaluated without leaving the utterance and looking to the outside world, neither can hypertext be fully evaluated without leaving the text and looking at its context [...] to see what is being pointed at. We might call this hypertext deixis *hyperdeixis* [...] referring to the fact that hypertext “points”, just as natural language expressions such as *I, here* and *now* point⁶⁸⁰

Loehr demonstrated that within a corpus of both commercial and personal websites, noun phrases were by far the most popular form of linking deictic marker. In terms of literary hypertext, Ensslin and Bell have previously discussed the ways in which personal pronouns, in particular “you” are used ambiguously within *Storyspace* fictions to play with the use of deixis within the fictional worlds.⁶⁸¹

The current theory will build upon these pre-existing theories by looking more closely at how the action of hypertext manipulation and the spatial elements of the transformation occur. The traditional form of link-and-node hypertext is predicated upon a form of proximal deictic markers, as it references something close-by, the destination of the link, but then hurls the reader to a distant location. The vocabulary of deixis allows for a more complex typology of hypertext that can be delineated between explicit and implicit types of hypertext, that is, the core distinction between compositional and receptional hypertext. Hypertext systems primarily evoke spatial deixis, as the manipulable gesture occurs in one place and may refer to another location. This framework moves beyond George Landow’s poetics of departure and arrival which privileges the link-and-node model.⁶⁸² Moreover, use of deixis allows us to analyse small-scale, local hypertext. One of the innovations of the current theory of deixis in hypertext is the

⁶⁷⁸ George Yule, *Pragmatics* (Oxford: Oxford University Press, 1996), 9.

⁶⁷⁹ I. de Saint-Georges, “Click Here If You Want to Know Who I Am. Deixis in Personal Homepages,” in *Proceedings of the Thirty-First Hawaii International Conference on System Sciences, 1998*, vol. 2 (Kohala Coast, HI: IEEE, 1998), 68–77.

⁶⁸⁰ Dan Loehr, “Hypertext and Deixis,” in *Referring Phenomena in a Multimedia Context and Their Computational Treatment* (Stroudsburg: Association for Computational Linguistics, 1997), 29.

⁶⁸¹ Alice Bell and Astrid Ensslin, “‘I Know What It Was. You Know What It Was’: Second-Person Narration in Hypertext Fiction,” *Narrative* 19, no. 3 (2011): 320.

⁶⁸² George Landow, “The Rhetoric of Hypermedia: Some Rules for Authors,” in *Hypermedia and Literary Studies*, ed. Paul Delany and George Landow (Cambridge: MIT Press, 1991), 81–103.

inclusion of bidirectional deixis. If bidirectional linking exists, then there must be cases in which it is appropriate to point back in either a proximal or distal sense. Therefore, the deixis of hypertext can be assessed in a bipartite manner, looking first at the initial text and then the post-gestural content. Table 5 illustrates the different forms of deixis in hypertext, which have been categorised in terms of where the gesture refers to before and after manipulation. The complex vocabulary of hypertext requires a dual approach to deixis as the act of textual manipulation has a spatial referent to a potential before action, and a trail to a previous state post-manipulation. The explicit differentiation between implicit and explicit hypertext as well as the two-way deixis is important for the development of the receptional hypertext that makes up the bottom half of the Literary Web model as the more distal forms of hypertext can remain out of the original context and user's ideas, so there is the incentive to be creative.

Pre-manipulation	Post-manipulation	Implicit/explicit	Example
Proximal	Proximal	Explicit	Mouse-over
Proximal	Distal	Explicit	link-and-node
Distal	Proximal	Implicit	search bar
Distal	Distal	Implicit	spatial hypertext

Table 5 Hypertext systems defined by deictic properties

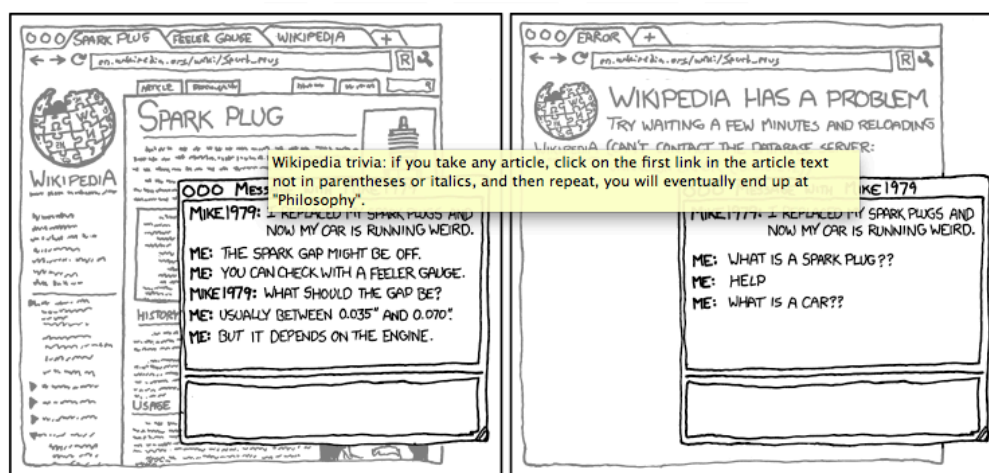


Figure 19 Mouse-over hypertext⁶⁸³

The mouse-over represents the smallest manipulable gesture, as everything stays in close proximity, and the action required to facilitate the transformation is often incidental. In figure 19, the mouse-over represents a proximal-to-proximal transaction as the manipulable gesture is embedded within the object itself and the resulting manipulation is within the same zone. One does not have to make the logical leap between the two states as the mouse-over will often be descriptive of the content from which it emerges. The link-and-node model of hypertext, as the most familiar form of hypertext, is clear in its deictic intentions, often through the traditional language deployed on the web of ‘click here’ with an implicit suggest that this will take the user

⁶⁸³ Randall Munroe, “Extended Mind,” *Xkcd*, 2011, <http://xkcd.com/903/>.

“there”—often indicated by a mouse-over. The reader is transported from one text to another text. Both forms are explicit, as one expects the deictic relationship between the two and the links are prebuilt into the system, even if they are generated on the fly, as is the case in some hypertext systems.⁶⁸⁴ The behaviour is routine and suggests that the user immediately understands the relationship between the two forms without puzzling it out too much, unless the connections have been obfuscated for the sake of comedy or literary value, as is often the case in literary hypertexts. Michael Joyce’s *Twelve Blue*, Joyce’s first web-based hypertext fiction, continues the patterns of *afternoon* through use of deixis to orientate the reader through non-specific links.⁶⁸⁵ The node {Long time after one} contains a single link embedded within the prose, “So young...’ she sighs. As if the seasons were whose fault?” (sl2_10). Clicking on this link leads to a node titled {cornflowers} (sl8_12) indicating the reader has been transported to a different reading path, but the connection is not immediately obvious from the departing node. A closer examination of the departing link (sl2_10) reveals an unmarked “she,” who is only identified on arrival into {cornflowers} (sl8_12), which opens “Samantha had this crazy thought that wasn’t anything really...” It is only from clicking the link that the reader understands who the “she” refers to, reversing the traditional conventions of hypertext.

Distal deixis manipulative gestures function as implicit categories and work from the premise that the initial manipulation is removed from the location itself. It is often the case that distal deixis does not explicitly point back to the original source. The distal-to-proximal relationship is a strange orientation that can be best explained through a close reading of search engines. As Halasz argued at the first ACM Hypertext conference, a search is an incomplete link.⁶⁸⁶ The interface of modern search engines creates a distance between the initial search interface and the results, or in most browsers, the search occurs entirely outside of the website in the interface of the browser itself. The query returns the search bar and results in the same frame but a different space from the original. The links that appear as part of the search results function in a similar way to the example from Joyce’s *Twelve Blue*, as the relevance may be obscure as the websites may have gamed the system in order to achieve a high rank, although this time, the relevance may not be obvious to the user after clicking. Although the results may be pointing back to the original search term, this is distal to the original terms.

It is fitting that the distal-to-distal model works in tandem with spatial hypertext, the most difficult and esoteric form of hypertext. This is partially because it does not easily yield the

⁶⁸⁴ The field of adaptive hypertext has developed in response to these needs.

⁶⁸⁵ Michael Joyce, “Twelve Blue,” in *Electronic Literature Collection 1*, ed. N. Katherine Hayles et al. (Maryland: Electronic Literature Organization, 2006), http://collection.eliterature.org/1/works/joyce__twelve_blue.html. References to nodes will be given in text by reference to name of the HTML file.

⁶⁸⁶ Frank G Halasz, “Reflections on NoteCards: Seven Issues for the next Generation of Hypermedia Systems,” in *Proceedings of the ACM Conference on Hypertext* (New York: ACM, 1987), 345–365.

relationship between different components and elements and how they directly connect or clash with each other. Mark Bernstein's codification of spatial hypertext demonstrates some of the concerns of the distal-to-distal relationships that define the semiotics of spatial hypertext.⁶⁸⁷ Bernstein's taxonomy includes three main categories that primarily develop the semantics of hypertext structure through visual elements. Although Bernstein's spatial elements have been developed as a spatial vocabulary, and may therefore not contain meaning outside of his own hypertexts, the broad patterns are useful for understanding the semantics of hypertext. The relational patterns extend the semantics of the connection between nodes on a micro-level as being complementary, subordinate, contradictory, a transclusion or transformational. Likewise, the collections patterns offer descriptions of various hierarchies and taxonomies with the ability to demonstrate that there are gaps or juxtapositions embedded within this container. The final set of patterns, the emergent, represent *ad hoc* connections that may be incomplete or not rigidly organised into a single hierarchy but still be connected in a looser manner. The kind of receptional hypertext discussed in this chapter often fits these forms of emergent structures. The connections between the various elements in Bernstein's schema require distinguishing concepts from each other spatially. The framework allows users to think about bidirectional linking and how the two elements relate to each other in greater detail. Moreover, the manipulative gesture is in the unification of elements to form strong semantic bonds in order to generate meaning. No connection exists on the local level as the user must tease out these connections or refer to an external primer such as Bernstein's in order to fully understand the meaning behind the connections. Elements need to be sufficiently distinct to be visually understandable but also not too esoteric that there is no unity between the separate elements.

The latter two forms of hypertext in table 5, the search bar and spatial hypertext, emphasise implicit connections and are therefore amenable to building forms of the hypertext circus as they offer the user near complete control of the connections, but there is a wealth of indeterminacy inherent potentially behind these decisions. These connections are often more ephemeral and fleeting, as search results are often inconsistent, and spatial hypertext functions primarily on the level of the individual who understands the personalised vocabulary they have constructed. A practical example of this would be the phenomenon of 'subtweeting' on Twitter, whereby a user purposefully avoids @-tagging a person they knows is on Twitter in order to make a snide remark about that person. This reaches its pinnacle when the hashtag "#subtweet" is included to demonstrate awareness of the writer to the dissonance in connectivity. Often subtweets include explicit, yet opaque, deictic markers to ensure that the audience is aware of an unspecified addressee, while only in a distal manner, as with *Twelve Blue*, since the reader needs

⁶⁸⁷ Mark Bernstein, "Can We Talk about Spatial Hypertext," in *Proceedings of the 22nd ACM Conference on Hypertext and Hypermedia* (New York: ACM, 2011), 103–112.

more information to ascertain the addressee. There is a gap between compositional and receptional hypertext that needs to be filled in order to facilitate a wider shift from the archive to the circus. One of the ways in which this transition could occur is through the use of an infrastructure such as Git, a Code Versioning System (CVS), which works as a distributed version of Track Changes on steroids. Git allows users to not only revert code back easily if required, but also “fork” code as we have discussed in a previous chapter. Git is an example of a “Third-generation [system ... which are] files-oriented and distributed: instead of a single repository, there are multiple repositories which communicate changes between each other as peers, removing the need for a single, centrally managed repository.”⁶⁸⁸ This is where the infrastructure is particularly valuable for hypertext, as it is distributed, but also because it is files-oriented rather than previous paradigms of file-oriented, which allows for richer interconnections at the meso-level of connection.⁶⁸⁹ It is important to allow certain connections to be reused rather than just a single file completely out of context. Systems such as Git allow for both transclusion and transformation, as the user can reuse content while linking back to their original content. This is an important receptional link if the re-use is meant to be explicit at least. DSpace allows for a more ephemeral version of this reconfiguration to occur as it “maintains the integrity of a master copy of every file, [so the user] can do what [they] please with the derivative to [their] local desktop - hack at it, tweak it, break it” and once they have finished, there is no permanent adjustments to the original.⁶⁹⁰ This allows the playful hypertext to flourish while maintaining and expanding the permanence of the archive.

One way in which this framework can be integrated is through use of pre-existing elements of receptional hypertext. Marginalia represent one of the most useful lenses through which to view receptional hypertext, and one that has been particularly difficult to replicate within the hypertext scholarship.⁶⁹¹ Marginalia represent receptional hypertext *par excellence*, as although the evidence is visible for anyone who uses the text, the ephemeral semantics can often be undecipherable to the original annotator when revisited in that it only reveals a particular moment. Marginalia offer a form of implicit *unstructured* hypertext in a similar manner to the distal-to-distal model of spatial hypertext. The genre therefore offers a useful framework for the development of the hypertext circus in systems, once a scalable form of marginalia has been designed, as users decide what to share and what its context and connection to the corpus might

⁶⁸⁸ Reid Priedhorsky and Loren Terveen, “Wiki Grows up: Arbitrary Data Models, Access Control, and beyond,” in *Proceedings of the 7th International Symposium on Wikis and Open Collaboration* (New York: ACM, 2011), 65.

⁶⁸⁹ Ibid.

⁶⁹⁰ Kirschenbaum, *Mechanisms*, 208.

⁶⁹¹ Jamie Blustein, David Rowe, and Ann-Barbara Graff, “Making Sense in the Margins: A Field Study of Annotation,” in *International Conference on Theory and Practice of Digital Libraries (TPDL) 2011* (Berlin, 2011); Michael Groden, “Problems of Annotation in a Digital Ulysses,” in *Joycemia: James Joyce, Hypermedia and Textual Genetics*, ed. Louis Armand (Prague: Charles University, 2004), 116–132; Catherine C. Marshall, “Toward an Ecology of Hypertext Annotation,” in *Proceedings of the Ninth ACM Conference on Hypertext and Hypermedia* (New York: ACM, 1998), 40–49.

be. In a similar manner to spatial hypertext, returning readers might even find it difficult to reconcile how these connections worked. Attempts to standardise and correct it have been difficult as readers (and non-readers) have idiosyncratic ways of marking up texts.⁶⁹² There is a deep crossover and potential for the future design through considering marginalia as a form of spatial hypertext, one of the forms of hypertext that is highly personalised and generally considered to be a receptional entity rather than an archival system. Marginalia have many of the desired properties of a spatial hypertext system, such as the aforementioned personalisation, but also the ways in which it can be used to connote spatial elements. A couple of examples will help to illustrate the ways in which marginalia exemplifies spatial hypertext in a playful way and the ways in which the polyvocality of the hypertext circus emerge through the interaction of author, page and reader.

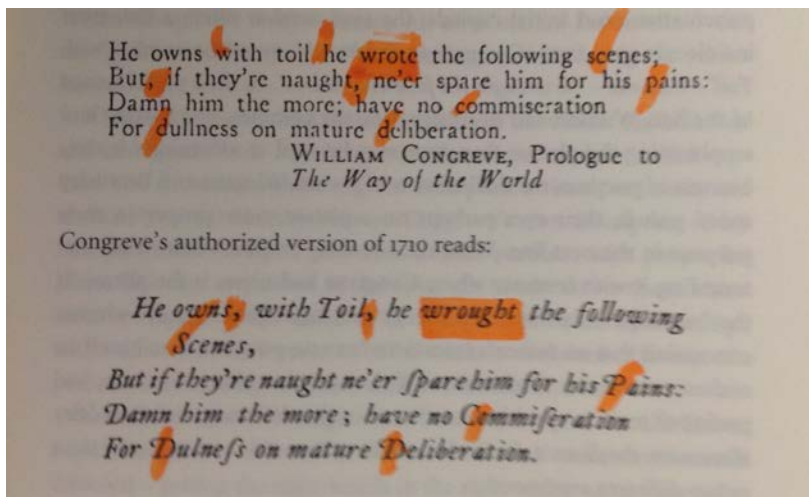


Figure 20 Highlights of Don McKenzie's *Bibliography and the Sociology of Texts*⁶⁹³

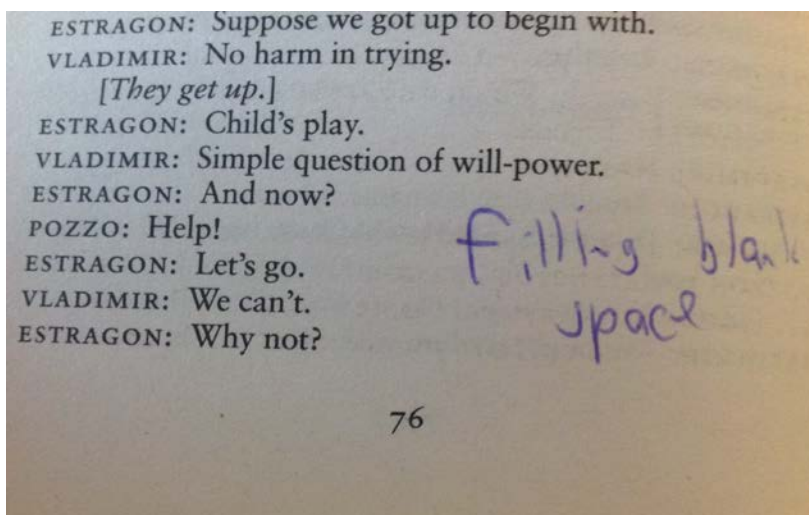


Figure 21 Marginalia in Samuel Beckett's *Waiting for Godot*

⁶⁹² C.f. Sherman, *Used Books*, 16–17.

⁶⁹³ McKenzie, *Bibliography and the Sociology of Texts*.

The manipulable gesture has been permanently inscribed in the material itself as the reader has marked the page that transforms the page for any readers who follow. These markings on the page are in different contexts and for separate purposes but reveal the ways in which spatial juxtaposition can be achieved without the use of explicit links. In the case of figure 20, the reader is attempting to map out the variants between two editions of Congreve's texts. The highlights work as a visual collation of the differences between the two editions but this is a highly personalised vocabulary through which the meaning is teased out since the physical artefact only reveals that a particular section has been marked out as interesting but not why. Likewise, figure 21 does not fit into a link-and-node model, but must be reconciled by using the bibliographical properties of the page. Unlike marginalia that might elucidate the archival aspects of the text, such as a gloss of a historical or literary reference, this instead offers evidence of readership. Clearly bored of reading the text, and probably of having to work within this linking structure as well, the reader has written a comment that resists traditional manners of reading the text. The connection is not necessarily to the particular page, but rather the document as a whole. Since *Waiting for Godot* muses on boredom and procrastination, such a comment might reflect upon the structures Beckett has created to facilitate such feelings. Marginalia, and ways of facilitating it digitally, thus provide a framework for receptional hypertext. This can lead to micro-hypertext experiments that distinguish from the more archival varieties.

Ancillary structures such as marginalia have migrated online in the form of wikis and forums dedicated to discussion of a particular novel or author. The PynchonWiki, which has received the greatest deal of prior scholarly attention as an annotations database, offers a useful case study for this activity on the meso-scale of the author's collected works.⁶⁹⁴ The resource offers annotations in wiki format for all of Pynchon's novels including *Bleeding Edge*, which at the time of writing a draft of this chapter, 22 November 2013, remained the lengthiest explication of a novel only published two months earlier.⁶⁹⁵ This novel is particularly interesting to explore from the boundaries of new media and social networks as the novel itself represents Pynchon's mediation on the dot-com boom at the turn of the twenty-first century and the associated ideology of the computer remaining a "neutral" entity.⁶⁹⁶ Not only has this wiki produced an errata list for the first publication, but a great deal of data on how a vocal subset of early readers have interpreted the text, as well as what they have found interesting. Previous

⁶⁹⁴ Tim Ware, "Thomas Pynchon Wiki - A Literary / Literature Wiki," 2006, <http://pynchonwiki.com/>; Simon Rowberry, "Reassessing the Gravity's Rainbow Pynchon Wiki: A New Research Paradigm?," *Orbit: Writing Around Pynchon* 1, no. 1 (2012), doi:10.7766/orbit.v1.i.1.24; Erik Ketzan, "Literary Wikis: Crowd-Sourcing the Analysis and Annotation of Pynchon, Eco and Others," in *Digital Humanities 2012* (University of Hamburg, 2012); Ralph Schroeder and Matthijs Den Besten, "LITERARY SLEUTHS ONLINE: E-Research Collaboration on the Pynchon Wiki," *Information, Communication & Society* 11, no. 2 (2008): 167–187.

⁶⁹⁵ Thomas Pynchon, *Bleeding Edge* (London: Jonathan Cape, 2013).

⁶⁹⁶ *Ibid.*, 89.

PynchonWiki efforts have spent a lot of effort speculating about the meaning behind Pynchon's choice for the title, this is not of great interest for these contemporary readers as the only commentary indicates:

Simply put, the 'bleeding edge' is *beyond* the 'cutting edge'... So at (or beyond) the limit of what's accepted as the norm that it, um, hurts.

I recall the term often bandied about during the period immediately preceding the DotCom Crash.⁶⁹⁷

Although this succinct explanation describes one of the meanings of 'bleeding edge,' it also denotes the part of the printed page that extends beyond the part which will be cut or folded. The bulk of the information in the wiki is structured through page-by-page commentary and associated materials. At the time of writing, the annotation project was relatively immature, and represented the interests of a coterie of early readers of Pynchon's novels and how the early contemporary reaction to this text developed over time and formed networks.⁶⁹⁸ This network offers unique evidence compared to a more established wiki, as it shows the processes behind the early reception of a novel. The first of these networks is one of the most traditional, the formation of an index with reference to the most popular concepts and characters in the novel.

The macro-structure of the wiki in its formative stages are telling of the priorities of its early users. Registered users have the ability to dedicate a page to a single character or concept that is worthy of extensive study, but none have been created so far, outside of pages inherited from previous wikis, such as an orphaned page, only available from an index of all active pages on the wiki, on "Sauncho Smilax," a character from *Inherent Vice*, a palimpsest element of the wiki inherited from the copied structure from the earlier novel. Many of the other dedicated pages repeat content from previous wikis, such as the dedication, despite the lack of this paratext, as this can be compared to other Pynchon novels that have dedications.⁶⁹⁹ This demonstrates a lack of close reading, but rather establishing comparative elements with previous novels that have received more extensive explication. The content outside of the page-by-page annotations only offer quick and superficial comparative analysis of Pynchon's *oeuvre*. This lack of critical attention is also visible within the page-by-page annotations. The juxtaposition of two notes (both incidentally for page nine) reveal which parts of the text annotators find interesting:

leading edge

Rhymes with 'Bleeding Edge.'

LexisNexis, HotBot, AltaVista

Early search engines, before Google became popular.

⁶⁹⁷ "Bleeding Edge Title," *Thomas Pynchon Wiki* | *Bleeding Edge*, 2013, http://bleedingedge.pynchonwiki.com/wiki/index.php?title=Bleeding_Edge_Title.

⁶⁹⁸ The history feature of the particular wiki offers an interesting insight into the development of this annotation wiki, as one can see a palimpsest of the wiki for Pynchon's previous novel, *Inherent Vice* in the earliest history of the pages.

⁶⁹⁹ "Chapter 1", *Thomas Pynchon Wiki* | *Bleeding Edge*, 2013, http://bleedingedge.pynchonwiki.com/wiki/index.php?title=Chapter_1.

The only connection between these two annotations is their proximity, but this is a weak connection. It is therefore what is missing that is more interesting. In this case, there are references to “post-postmodern,” “neo-Brechtian subversion of the diegesis,” “NCAA playoffs,” “unreadable legacy software,” and perhaps “if you can keep a trade secret, don’t rule out the Yellow Pages—” that have not appeared earlier in the novel and would potentially require explication at this point in the novel.⁷⁰⁰ This selection demonstrates the mixture of popular culture, technical argot and high art discourse the reader expects from Pynchon. A couple of these references, such as the “NCAA [National Collegiate Athletic Association] playoffs” and “Yellow Pages” require only minor glosses to provide context, but the others require careful explication and to be tied back to the novel as a whole. “Unreadable legacy software,” is one of the consequences of the Dot-Com boom and requires explication as refers back to the obsolescence of older forms of computation, reflecting the historical distancing within the novel. Nonetheless, the words on the page that have interested contemporary readers so far are a phrase that is a minimal pair rhyme with the title, and a list of search engines or databases. Perhaps the problem here compared to other Pynchon novels is the lack of historical distance between the readers and the narrative timeframe. The reader who wishes to explicate a reference only needs to search for the popular culture reference on Wikipedia to find a more than comprehensive history. The *Bleeding Edge* wiki thus presents a unique opportunity among the PynchonWikis to look at what the users want to gloss rather than the obvious historical references that require annotations, although with the right level of distancing, it is unclear how the wiki will be updated to serve the needs of those who did not live through the age. The primary connection on the page is not between the proximal annotations, but rather been the extracts from the text in bold and their glosses. These function closer to the brief marginal scrawl one might expect from a reader rather than a scholarly exposition, as is the case in both these circumstances. There is no substantial analysis of how “leading edge” is interesting in this context, its connection to the title “Bleeding Edge” or the fact that it is a pun. The comment about search engines is plain wrong, as LexisNexis is a specialised legal database—that is, not a search engine, but also a content provider—that has remained strong in a niche market, despite the contemporary dominance of Google. The PynchonWiki is not officially authorised by the author—although Tim Ware, the founder of the website, has received advanced galley proofs of Pynchon’s recent novels in order to release his glosses in-line with the novel’s publication date—but other authors have experimented with integrating social media into the novel and offering readers direct access to a forum created specifically for speculation on the novel.

⁷⁰⁰ Pynchon, *Bleeding Edge*, 9.

Mark Danielewski's *House of Leaves* represents an earlier experiment with including social media in novel's covers, as Danielewski included a link to a forum to discuss the novel.⁷⁰¹ Danielewski has always been active on social networks, with a previously active MySpace account, and more recently a Facebook and Twitter presence used as part of promoting his fiction.⁷⁰² Danielewski also actively uses the Web to create his densely allusive novels to create a mutual feedback loop.⁷⁰³ The forums dedicated to interpretation of his novels have been the contribution with the greatest longevity as users have obsessively pored over every detail of Danielewski's *oeuvre*.⁷⁰⁴ In her survey of the forums, Bronwen Thomas notes that users tended to be fairly territorial and predominantly stick to annotating one work and that their primary motivation was for the dual purposes of validating their interpretation while also demonstrating their superior knowledge.⁷⁰⁵ The forum thus exists for more egotistical reasons than the PynchonWiki that have led to interpretations being more substantial as they are more likely to face criticism from fellow users. Danielewski's forum has continued to grow and expand to include speculation around his ambitious forthcoming serialised novel, *The Familiar*.⁷⁰⁶ This forum contains pure speculation about an unreleased novel rather than explication of a pre-existing text, with topics such as "So I asked for more information on The Familiar at T50YS reading..." and "The other meaning of 'Familiar.'" Danielewski has extended this community in recent years by including tweets that contain co-ordinates in order to create buzz for the new novel.⁷⁰⁷ These social forms of hypertext encourage the form of distal hypertext that exemplifies marginalia, but outside of the texts, where the margins are infinitely large. The forum, more than a wiki format, also facilitates conversations and question answering, rather than readers annotating parts of the text that may interest only themselves. Although these new forms of reception enable the reader to engage with literature in new ways, they are separate from the text themselves and therefore have a proximal-distal relationship.

Raphael Slepón's *Finnegans Wake Extensible Elucidation Treasury (FWEET)* offers another future direction for receptional hypertext, although one that is moderated and curated by a single user.⁷⁰⁸ Slepón has created a database of over 80,000 annotations to James Joyce's *Finnegans Wake* that create a framework for connections within the novel through themes, languages, editorial elements and other organisational principles inside and outside of the game. Slepón's project takes other major annotation projects of Joyce's tome as its palimpsest, most notably

⁷⁰¹ Danielewski, *House of Leaves*.

⁷⁰² Bronwen Thomas, "Trickster Authors and Tricky Readers on the MZD Forums," in *Mark Z. Danielewski*, ed. Joe Bray and Alison Gibbons (Manchester: Manchester University Press, 2011), 86.

⁷⁰³ Pressman, *Digital Modernism*, 171.

⁷⁰⁴ Thomas, "Trickster Authors," 88.

⁷⁰⁵ *Ibid.*, 90; 92–93.

⁷⁰⁶ "The Familiar," 2013, forums.markzdanielewski.com/forum/the-familiar/the-familiar-aa.

⁷⁰⁷ Mark Z Danielewski, "@markdanielewski," *Twitter*, 2014, <https://twitter.com/markdanielewski>.

⁷⁰⁸ Raphael Slepón, "Finnegans Wake Extensible Elucidation Treasury," 2005, <http://fweet.org/>.

Roland McHugh's *Annotations to the Wake*, a fascinating spatial hypertext which overlays annotations of *Finnegans Wake* onto a blank page, creating a distal-proximal link to the original. The reader requires the right text and the ability to make the connection to understand the importance of a particular gloss. Without those editions, it is near impossible to understand the edition. Even with a corresponding definition, the spatial mapping becomes highly difficult as figures 22-23 demonstrate. Each line may have up to two lines of annotations and the size of the two books may differ as in the current example.⁷⁰⁹ Moreover, once the reader has mapped out the reference, they then have to refer to a further key in order to decrypt the information. This makes it very difficult to read the annotations without a spatial understanding of the relationships between two levels, despite the evident level of erudition in McHugh's book. The references mapped out in both McHugh's guide and Slepon's database describe the network of Joyce's composition, and while McHugh's work is difficult to reuse even within the context of consulting a print copy of *Finnegans Wake*, Slepon's remediation creates a database through which to reconfigure Joyce's enigmatic novel. *Finnegans Wake* offers a perfect platform for future hypertext design, as it a densely connected multi-dimensional print text with almost unlimited scope for interpretation. The annotations extend the limits of Joyce's text and would be useful seedlings for other projects about canonical texts if the data were to be shared in an appropriate format. Through tracing a narrative through a database, *FWEET* enables the reader to reconceptualise and remix the text into what they understand it to be. *Finnegans Wake* exists as a tabula rasa for this activity and allows us to understand how the future of hypertext may proceed. *FWEET* exists on an ancillary level so that it does not disrupt the text but rather creates an alternate reading experience that allows the reader to see the ways in which the manipulable elements of the text can be reconfigured. *FWEET* offers a possibility for a database of compositional hypertext and with the right forms of search, a wealth of data that could be reused in other contexts.

⁷⁰⁹ Joyce, *Finnegans Wake*, 105; Roland McHugh, *Annotations to Finnegans Wake* (London: Routledge & Kegan Paul, 1980), 105.

*Myrtles of Venice Played to Bloccus's Line, To Plenge Me High
 He Waives Chiltern on Friends, Oremunds Queue Visits Amen
 Mart, E'en Tho' I Granny a-be He would Fain Me Cuddle, Twenty
 of Chambers, Weighty Ten Beds and a Wan Ceteroom, I Led the
 Life, Through the Boxer Coxer Rising in the House with the Golden
 Stairs, The Following Fork, He's my O'Jerusalem and I'm his
 Po, The Best in the West, By the Stream of Zemzem under Zig-
 zag Hill, The Man That Made His Mother in the Marlborry
 Train. Try Our Taal on a Taub, The Log of Anny to the Base
 All, Nopper Tipped a Nappiwenk to his Notylytl Dantsigirls, Prszys
 Orel Orel the King of Orlbrdsz, Intimier Minnelisp of an Extor-
 reor Monolothe, Drink to Him, My Juckey and Dhoulr Bemine
 Thy Winnowing Sheet, I Ask You to Believe I was his Mistress,
 He Can Explain, From Victrolia Nuancee to Allbart Noahnsy,
 Da's a Daisy so Guimea your Handsel too, What Barbaras Done
 to a Barrel Organ Before the Rank, Tank and Bonnbtail, Huskvy*

Figure 22 Detail of Page 105 of *Finnegans Wake*

Merchant of Venice s Anacreon in Heaven: 'When the myrtle of Venus joins with Bacchus' vine'
 s Wife, Children & Friends: 'Pledge me high'
 Stewardship of the Chiltern Hundreds is conferred Ormond Quay, D L oremus: let us pray
 on member of Parliament wishing to resign his seat G Mund: mouth F queue: tail
 Grania Finn MacCool Hundred of Manhood (030.08)
 Eighty ten (F quatrevingt dix) = 90; 20 + 90 + 1 = 111
 L ceterum: the rest
 John Maddison Morton: *Cox & Box* (play about John Box & James Cox)
 Boxer Rising of 1900: last Chinese peasant rising
 House of the Golden Stairs: brothel in Shanghai
 Zemzem: well at Mecca
 Cz zem: earth
 After his father's death, Confucius born in dry cave called 'The Hollow Mulberry Tree'
 Confucius and his mother moved to Zigzag Hill (Chufu)
 Du taal: language G taub: deaf logarithm to base L
 Swift: *Tale of a Tub* G Taube: pigeon analogy
 Napper Tandy, Po napiwek: tip tipped the wink Po motyl: butterfly Po przy: near
 United Irishman naughty little dancing girls Danzig Po przeszyć: to pierce
 PS orel: eagle Persse O'Reilly interior monologue
 s 'The Wren, the Wren, The king of all birds' Po olbrzym: giant G Minne: (courtly) love
 Moore: s Drink to Her Who Long [Heigh Ho! My Jackey]
 L extorreor: be parched
 Moore: s If Thou'lt Be Mine, the Treasures of Air [The Winnowing Sheet]
 HCE Victoria Nyanza & Albert Nyanza: I ni h-anssa: not hard (formula for Noah
 the 2 western reservoirs of the Nile answering riddles) G Ahn: ancestor
 s 'Daisy, Daisy, give me your answer do' handsel: first specimen of something
 R da: yes

Figure 23 Detail of Page 105 of *Annotations to Finnegans Wake*

Speculative Hypertext

Compositional hypertext can be transformed into the hypertext circus through the use of playful elements that challenge the archival elements. We cannot remove the archival elements entirely, since text is required to be transformed into hypertext. The goal is to instead allow the archive to be reconfigured in unexpected ways, or to thematise the matter of composition in a playful manner. These small-scale prototypes that offer new possibilities for hypertext can be described as *speculative hypertext* in a way that they do not demonstrate anything new about hypertext innately, but rather the artistic potential of the medium. This fits into the wider conversation of critics such as Johanna Drucker who suggests the much wider movement of speculative computing. Drucker, along with Jerome McGann and Bethany Nowviskie, developed the model of speculative computing as a critique and response to the dominant strand of faith in the objectivity of computational analysis in digital literary studies. Speculative computing instead posits the subjectivity of the computer and uses these tools in order to probe what we do not know to begin with rather than to confirm intuitions or hypotheses.⁷¹⁰ The project exposes subjectivity behind all aspects of the digital and offered examples of how to integrate speculative computing into digital humanities work. Instead of using computers as a brute force tool towards revealing the underlying truth hidden in a text but unavailable to usual close reading, speculative computing instead “push[es] back on the cultural authority by which computational methods instrumentalize their effects across many disciplines.”⁷¹¹ Essentially, the speculative computing movement draws attention to our blindness in understanding the inner workings of computational methods. Speculative hypertext mirrors these aims through replacing the objective explicit link with the subjective, unexpected implicit connection. Compositional hypertext design can also be used in order to critique the lack of agency within these systems, while thematising hypertext as a method of critique. The next section of the chapter will explore a few recent efforts of speculative hypertext from both others’ projects and some of my own creative work.

Recent digital critical editions have moved away from a purely archival mode to incorporating some further elements that allow users to reconfigure the archive for their own uses. The Shelley-Godwin archive, for instance, moves towards what its creators deem “participatory editions,” or a mode of scholarly editing that invites active interaction with the archive rather than observing the compositional processes.⁷¹² The Shelley-Godwin Archive achieves this aim

⁷¹⁰ Johanna Drucker, *Speclab: Digital Aesthetics and Projects in Speculative Computing* (Chicago: The University of Chicago Press, 2009), 5.

⁷¹¹ Ibid.

⁷¹² Elizabeth Denglinger and Neil Fraistat, “The Shelley-Godwin Archive,” 2013, <http://shelleygodwinarchive.org/>; The theory behind such a critical edition has been discussed by Fraistat and Stephen Jones in Neil Fraistat and Steven

by use of what they term Shared Canvas, “by allowing visitors to create connections to secondary scholarship, social media, or even scenes in movies, projects built on Shared Canvas attempt to break down the walls that have traditionally enclosed digital archives and editions.”⁷¹³ This free movement between scholarly sources may be the future for digital critical editions and reveals the ways in which the archival form can be expanded in more playful manners. In general, however, more work must be done in this area. Wolfgang Ernst has suggested one of the ways in which we can reconceptualise archives that would facilitate a move towards more reception-oriented archives: “with the aid of agents and filters, the object-oriented archive thus takes shape cumulatively, entailing a shift from read-only paradigms to a generative, participative form of archival reading.”⁷¹⁴ Object-oriented design, one of the core tenets of a successful hypertext project, understands the power of the object through its reuse in different contexts and allows the users to shape and change the way the object is used rather than being stuck in archaic structures that dictate how the reception of a system may be used. The more reusable content is, or the easier it is to recontextualise it, the more useful it will be for the participatory archive. The protocological nature of the Internet is the fulcrum of its decentralised nature as disparate servers. The decentralisation of the archive and the ability to *internetwork* between different archives, just as the internet facilitates the trivial crossing of networks, allows the archive to be reconfigured in ways that hypertext will naturally emerge.

Jonathan Safran Foer’s *Tree of Codes* offers a form of speculative hypertext in print. *Tree of Codes* works on the principle of proximal-proximal relationships, as pages have been heavily altered to reveal cut-outs of text pages below. A brief glimpse at the copyright page reveals the complexity of the production of the text:

Die-cut pages design by Sara De Bondt studio [...]
 Printed by die Keure in Belgium
 Die-cut by Cachet in The Netherlands
 Hand-finishing by Beschutte Werkplaats Ryhove in Belgium....

Publisher’s note: In order to write *Tree of Codes*, the author took an English language edition of Bruno Schulz’s *The Street of Crocodiles* and cut into its pages, carving a new story.⁷¹⁵

Foer’s ambitious project emerges out of previous experiments in artists’ books and alters the original text of Schulz’s *The Street of Crocodiles* into a new book through sculpting new indeterminate meaning into his new project. Although similar artists’ books have been published in small bespoke print runs, Foer and his publisher, Visual Editions, have undertaken an extensive process to convert the artisan procedure to a mass produced object. The lengthy

E. Jones, “Editing Environments: The Architecture of Electronic Texts,” *Literary and Linguistic Computing* 24, no. 1 (2009): 9–18.

⁷¹³ Denglinger and Fraistat, “The Shelley-Godwin Archive.”

⁷¹⁴ Ernst, *Digital Memory and the Archive*, 81–82.

⁷¹⁵ Jonathan Safran Foer, *Tree of Codes* (London: Visual Editions, 2010), [v].

colophon reveals the processes of composition involved four different agencies including work on hand finishing the text to ensure that the final text and its mechanism both functioned correctly. Not only does this mean that the book requires a physical form in order to see the three-dimensional aspects of the text, but it also requires agents who move away from the digital age.

The hypertextuality of this text does not conform to a link-and-node model, but rather connected to the proximal spatiality of the text in three-dimensions. Although not all the text is coherent, the cross-section of pages requires us to read *through* pages rather than off them. A single phrase, such as “do I understand” is repeated as a koan in different contexts:

as if anymore searching for do I understand
as if anymore searching for do I understand
as if anymore searching for do I understand
as one of us anymore fall at now do I understand
as one of us anymore fall at now do I understand
the impression when fall at now do I understand
the impression, when fall at now do I understand
the impression, when fall at now do I understand
the impression, when looking at now do I understand
the impression, when looking at now do I understand.
it off world to lose some Only now do I understand.
the world to lose some Only now do I understand the all sides⁷¹⁶

The motif of “now do I understand” does not exist in its original context in Schulz’s text, but rather is revised into four completely new contexts, although most of them do not parse without a large degree of poetic licence. Every new page reveals new depths of the phrase “now do I understand” in its new context. The incursions on Schulz’s text in Foer’s remix are completely transformative as a remix as “Schulz’s translated text contains 37,483 words, Foer’s 3,815, so about nine out of every ten words have been eliminated. The erasures are not random; comparison of word frequency in the two texts reveals patterns Foer used to decide which words to erase.”⁷¹⁷ Foer has carefully picked motifs throughout the text although there is a charge that he has “Disneyfied” the text through removing some of its more problematic themes, creating a text of a more wholesome character.⁷¹⁸

Texts that employ their bodies to create narrative complexity must be read not for their words alone but also for the physical involvements readers undertake to access their materialities – including smells, tactile sensations, muscular manipulations, kinaesthetic perceptions, and proprioceptive feedback. That is what reading requires in the age of the aesthetic of bookishness.⁷¹⁹

⁷¹⁶ Ibid., 30–41.

⁷¹⁷ N. Katherine Hayles, “Combining Close and Distant Reading: Jonathan Safran Foer’s *Tree of Codes* and the Aesthetic of Bookishness,” *PMLA* 128, no. 1 (2013): 227.

⁷¹⁸ Ibid., 228.

⁷¹⁹ Ibid., 231.

Although not all books have been cut-up in this extreme fashion, we can use the model to understand how we can read through print texts in order to read multiple dimensions in text. Furthermore, Foer's text alerts readers to the need to continue to explore print as a way of understanding multiple dimensions and models of hypertextuality in print.

Tully Hansen's "Writing." is a further experiment in the ways in which compositional rhetoric can shape a receptional experience as Hansen uses small proximal-to-proximal hypertext to reflect his composition process.⁷²⁰ Hansen's project functions as an exemplar of compositional hypertext as it is a self-reflexive work on the nature of composition and writing (and reading) on the Internet. "Writing." opens in a minimalist fashion, with the title highlighted in grey and a line acknowledging Hansen as the author with a link to his homepage. Any text highlighted in grey is clickable and manipulates the text in a fractal manner, either expanding or changing the pre-existing highlighted content.⁷²¹ The text does not expand in a linear manner, but rather extends the text in multiple direction, embellishing pre-existing clauses and adding new paragraphs in-between existing structures. This might be seen as part of the traditional stretchtext paradigm as the manipulation gesture performed by clicking the highlighted texts embellishes the pre-existing text. Hansen's action is more complex, however, as he challenges the stability of the recorded text through re-clicking. The only option at the beginning of "Writing." is the title itself, which transforms over four clicks into a quotation from Donald Barthelme (figure 24). This leads to a further digression through a discussion about the pronunciation of Barthelme's surname using Wikipedia. The reader has the option to skip this digression by clicking on the "there" below the Barthelme quotation.

Writing.

by [Tully Hansen](#)

Writing is the most interesting thing one can do.

by [Tully Hansen](#)

Writing is the most difficult thing one can do.

by [Tully Hansen](#)

Writing is the most interesting and difficult thing one can do.

by [Tully Hansen](#)

⁷²⁰ Hansen, "Writing."

⁷²¹ Hargood et al., "Exploring Strange Hypertexts."

"Writing is the most interesting and difficult thing one can do." – Donald Barthelme.

by Tully Hansen

"Writing is the most interesting and difficult thing one can do." – Donald Barthelme.

There.

by Tully Hansen

Figure 24 The manipulation gesture in Tully Hansen's *Writing*⁷²²

Hansen proceduralises the process of composition and inscribes this within his compositional hypertext. As Hansen rightly notes in his composition, he is in control and that the “we” is “rhetorical: the writer can only imagine what you [...] the reader, are thinking” but we are deeply embedded within his thought process. Although the resulting text is linear, the hypertext enacts the procedure of revision and is constantly changing. This hypertext can be frustrating as the user’s agency is reduced to watching information added, but not necessarily in the expected order and the reader is always unsure what clicking the highlighted text will achieve. “Writing.” has been preceded by similar gambits⁷²³ but what is unique about “Writing” is its procedural rhetoric, that is, the way in which it enacts the point it wishes to make, in this case enacting the frustration and on-going process of rewriting.⁷²⁴ The reader is invited to follow Hansen’s thought process through enacting the process of revision in their constantly changing text. The structure of the final text, once all pathways have been explored (obviously losing a plethora of meaning through including the punch lines but not the joke, something the keen reader must deduce entirely from the source code or extratextual mapping), is deeply parenthetical, revealing once more the non-linearity and embedded structure of the underlying text. This is not an exploratory hypertext but rather a procedural and speculative one that muses on the act of composition, an ideological loaded aspect of hypertext development. In terms of the Literary Web hourglass, Hansen’s *Writing* enacts the processes of the work-in-progress and captures the state of flux such a work can remain in during the early stages of its composition.

Hansen’s project explores the manipulation of text through repeated clicking in multiple ways, most explicitly by referring to the flipbook aesthetic in creating an emoticon that winks and reverts to smiling through several clicks, literalising what is implicit from the form of the initial emoticon. There are also prose structures that reflect the method of composition and progression that does not follow a strict linear order as the reader is overwhelmed with a

⁷²² Hansen, “Writing.”

⁷²³ Most notably “Telescopic Text,” which Hansen acknowledges as the foundations of his work. Joe Davis, “Telescopic Text,” 2008, <http://www.telescopictext.com/>.

⁷²⁴ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge: MIT Press, 2010), ix.

plethora of embedded parenthetical expressions such as “(you can tell I’m a would-be programmer (resigned to prose) by my penchant for parentheses (my boner for brackets (my taste for braces))))). ;-) (I think she likes you!).” This grotesque of parenthetical conventions is only effective within the framework of processing the text as hypertext rather than the static final representation as it mirrors the processes of Hansen’s composition. Hansen also experiments with traditional uses of the link on a website as clicking on an URL to *The Atlantic* website instead changes the text on display rather than the expected action of directing the user to the website. The reader’s expectations are challenged and thrown back into the process of writing rather than being engaged with the usual distractions of an interlinked web.

A further example of speculative hypertext as a transformative aspect of an argument is Whitney Trettien’s *Digital Humanities Quarterly* article, “A Deep History of Electronic Textuality: The Case of *English Reprints Jhon Milton Areopagitica*.”⁷²⁵ The work itself does not contain extensive explicit links, but returns to the earlier hypertext recognisable by readers of Joyce’s *afternoon*, in the form of *hypertext* that yields through subtle reactions to mouse-overs. This is an unintentional effect for the reader as they do not need to explicitly click on a link, as long as the mouse hovers over the area, the text will change. Trettien’s mouse overs do not move the reader to another location but rather change the text under the mouse. This is a form of carpentry, as the use of mouse-over changes throughout the text to again reveal the machinic agency of the composition process as Trettien juxtaposes her writing processes with the results of an OCR scan of a printed draft of her essay. These corruptions through mouse-over, an unintended consequence of highlighting text or simply scrolling past it can convert “*English Reprints Jhon Milton Areopagitica* is a Frankenstein of mediated materialities, stitched together by software and revitalized from skeleton metadata back to bookish existence.” into “*English Reprints Jhon Milton Areopagitica* is a Frankenstein of mediated ma~~~edtgetb~!u softwgc~And~it~lized_from skel~!9~tadata ba~k tgJ>ookish existence.”⁷²⁶ In a way that mirrors the strategies deployed by Hansen, Trettien undermines our reading process through returning to the traces of an earlier stage in the composition process. Alan Galey’s “Prototype for Visualizing Variants” also uses a minimal gesture for textual transformation.⁷²⁷ Galey has decided that one way in which we can understand the variants between different versions of books, particularly Shakespeare’s plays, is through subtle animated transformations between the variants that happen automatically but reveal the multiple dimensions of the original text. Figure 25 shows the transition between “too too sullied flesh” and “too too sallied fresh,” but this would be noted by only a careful reader who is willing to linger on a word, the transformation can happen subtlety and across reading experiences. This hypertext experiment functions on a local level, but with important results for

⁷²⁵ Trettien, “A Deep History of Electronic Textuality.”

⁷²⁶ Ibid., para. 1.

⁷²⁷ Alan Galey, “Visualizing Variation,” 2012, <http://individual.utoronto.ca/alangaley/visualizingvariation/>.

the individual reading experience. These are compositional elements, as the reader does not have any agency in the decision to change the text but rather demonstrate the speculative nature of future hypertext that can incorporate similar elements.

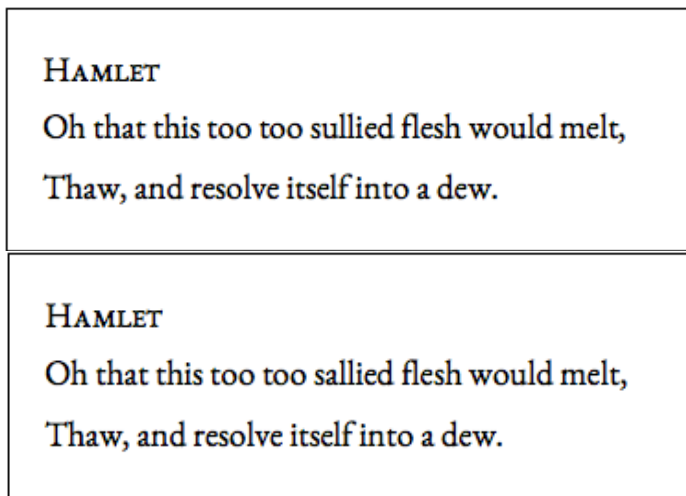


Figure 25 The animated display of textual variants in Alan Galey's *Visualizing Variants*

Speculative hypertext also has the ability to critique the processes of composition beyond authorship. Mark Sample's "Disembargo" offers a critique of embargo guidelines pertaining to Open Access publication of a PhD student's finished dissertation through speculative design.⁷²⁸ The project "dramatizes the silence of an embargo" through publishing Sample's doctoral dissertation, "Radicalizing Consumption in the Fiction of Don DeLillo and Toni Morrison," at the pace of one character (including punctuation and spaces) every ten minutes.⁷²⁹ The whole dissertation should be published by 2020, six years after the start of the performance, although Sample was required to restart the process half a year into the first run due to a change in the terms of condition, "necessitating taking down and restarting the app."⁷³⁰ As with the aforementioned examples of speculative compositional hypertexts, "Disembargo" does not allow the reader agency over the progress of the text but rather reflects the external forces that shape the potential Open Access publication of a thesis that has potentially been proposed by an external academic organisation. This frustration is only compounded by the juxtaposition between Sample's choice of a Creative Commons license to allow reuse of the published fragment of his thesis and the careful construction of an environment in which it is near impossible to extract the source code or text in ways that would traditionally work because of the affordances of Hypertext Markup Language (HTML) and Hypertext Transfer Protocol (HTTP), the two building blocks of the Web. Therefore, although the project clearly exhibits the

⁷²⁸ Mark Sample, "Disembargo: An Open Diss, One Letter at a Time," 2014, <http://disembargo.aws.af.cm/>.

⁷²⁹ Ibid.

⁷³⁰ Mark Sample, "(Actually, Disembargo's hosting service redid its Terms of Service, necessitating taking down and restarting the app.)" @samplereality, February 21, 2014. <https://twitter.com/samplereality/status/436873216867713025>.

playful qualities connected to the hypertext circus, the glacial pace of the computational mechanism underlying the publication and the closed access source code and text reveal the need for the open form of the hypertext circus.

A further form of speculative hypertext fits into a paradigm usually associated with the darker sides of the Web: spam. Finn Brunton describes *litspam* as “cut-up literary texts statistically reassembled to take advantage of flaws in the design and deployment of Bayesian filters.”⁷³¹ The automated aesthetic of *litspam* has found a natural home on Twitter, but in a way in which creative people have managed to design automatons, referred to as “twitterbots,” that produce frequent miniature compositions that can contain aesthetic value. Twitter is the ideal site for linguistic experimentation as it resonates with the procedural elements of language (that is, the possibilities of language in the confines of 140 characters with the added features of @-mentions and hashtags). The limitation of 140 characters has led to creative projects without resort to automated elements, such as a tweet through of the entirety of Pynchon’s *Gravity’s Rainbow*, a project very similar to Simon Morris’s *Getting Inside Jack Kerouac’s Head*.⁷³² Bronwen Thomas argues that Twitter facilitates two types of storytelling: short bursts that fit within the constraints of a single tweet and long form projects such as @epicretold, which tweets the entirety of *The Mahabharata*, a Sanskrit epic, in 140 character chunks.⁷³³ Thomas’s examples are all human controlled conceptual projects that are carefully curated, but in the last few years, Twitterbots have become more prominent. These automated experiments move beyond reception as reading to a form of deformance whereby the author of the algorithm is unlikely to have read the source material. There are wide range of creative Twitterbots that mash-up and remix literary texts, as opposed to those whose main objective is the propagation of spam and other malicious purposes. An auteur Twitterbot movement has mobilised since the turn of 2010, which reached its pinnacle with an article in *The New Yorker* offering an overview of recent activity in bot creation.⁷³⁴ These bots test the infrastructure of the medium and the possibility of linking up different web-based platforms through the use of interconnected Application Programming Interfaces (APIs). Zach Whalen posits that the core ontology of a twitterbot resides in its API rather than any other aspect of its textual production.⁷³⁵ The aesthetic value of these bots varies greatly, as the automatic generation process does not always create perfect examples. Many of these bots work as punchline bots too, as they often cease to be interesting once the user understands the mechanisms behind them. One of the more interesting

⁷³¹ Finn Brunton, *Spam: A Shadow History of the Internet* (Cambridge: MIT Press, 2013), 143.

⁷³² @Total_Pynchon, “Gravity’s Rainbow”; Simon Morris, “Getting inside Jack Kerouac’s Head,” 2008-2009, <http://gettinginsidejackkerouacshhead.blogspot.co.uk/>.

⁷³³ Thomas, “140 Characters.”

⁷³⁴ Rob Dubbin, “The Rise of Twitter Bots,” *The New Yorker*, November 15, 2013, <http://www.newyorker.com/online/blogs/elements/2013/11/the-rise-of-twitter-bots.html>.

⁷³⁵ Zach Whalen, “_ebooks, Typography, and Twitter Art,” in *Lit Misbehaving: Responding to New and Changing Modes of Creative Production* (presented at the MLA Convention, Chicago, 2014).

twitterbots that extends the limits of the procedural elements is “Power Vocab Tweet,” a burlesque of word-of-the-day twitter accounts that offer a simple definition of a randomly chosen word.⁷³⁶ Parrish has used the medium of Twitter as a form of lexical exploration and part of his work on what he terms “speculative lexicography.” The central influence was from “the novel *Native Tongue* by Suzette Haden Elgin” under the thesis that “the manner in which a language ‘chunks’ the universe of human perception into words reflects and reinforces structures of power; therefore, to break the world up into words differently is a means of counteracting the status quo.”⁷³⁷ The twitterbot functions through creating portmanteaus—although these may be pre-existing words—through a simple algorithm that amalgamates random combinations of English prefixes and suffixes, which is then supplemented by Markov-generated definitions from the definitions database of Wordnet, a linguistic database that can be queried.⁷³⁸ These two generative procedures combine to create texts that even Parrish cannot trace back to their origins such as “canonintional, adj. of or for the common people as constituting a fundamental political and economic group.”⁷³⁹ The word and particle have both been generated from a different source to the potentially cobbled together definition. Occasionally this can manifest in dada definitions that are very similar to their actual definitions such as “bash, v. commit in order to silence them” or “ugly, adj. not fulfilling the same grammatical role of any of various natural brown earth pigments.”⁷⁴⁰ It is the very fact that it is difficult to reconstitute the original material from the final output that renders @PowerVocabTweet a complex example of distal-to-distal hypertext.

Within this framework, I have created a Twitterbot that plays with the elements of speculative hypertext around Vladimir Nabokov. Official eBook versions of Nabokov’s novels were only available late 2010, but before then, in order to fulfil the demand in the market, many unofficial versions of the text were shared online. The project used Markov chains; a method of creating statistically likely natural language sentences outlined in Chapter Two, to create “Vladimir Nabotov,” @vvnabokov, an exploration of the transformation Nabokov’s texts undergo through the Twitter platform. In order to critique the zombie digital textuality of uncorrected OCR and other distorted glyphs that enter the process of digitisation and copying to plain text files, “Nabotov” kept all these errors in to final output in order to highlight the illegibility of

⁷³⁶ @PowerVocabTweet, “Power Vocab Tweet,” *Twitter*, 2013, <https://twitter.com/PowerVocabTweet>.

⁷³⁷ Adam Parrish, “Introducing... POWER VOCAB TWEET,” *Decontextualize*, April 18, 2013, <http://www.decontextualize.com/2013/04/introducing-power-vocab-tweet/>.

⁷³⁸ Ibid.

⁷³⁹ Power Vocab Tweet, “canonintional, adj. of or for the common people as constituting a fundamental political and economic group.” @PowerVocabTweet, February 2, 2013, <https://twitter.com/PowerVocabTweet/status/429992612939173888>.

⁷⁴⁰ Power Vocab Tweet, “bash, v. commit in order to silence them.” @PowerVocabTweet, February 3, 2014, <https://twitter.com/PowerVocabTweet/status/430505992728887296>. Power Vocab Tweet, “ugly, adj. not fulfilling the same grammatical role of any of various natural brown earth pigments.” @PowerVocabTweet, February 14, 2014, <https://twitter.com/PowerVocabTweet/status/434552656536018944>.

many of the actions that are built upon undercorrected texts. For example, “CrÃ³mlin on my bald spot; we touch in silhouette”⁷⁴¹ shows how the original source file has been compiled in an incorrect manner when the text is stripped out of it. When it is not error strewn to the point of illegibility, the output of the textual generator creates new sentences that appear to be Nabokovian such as “Yet I trust that my heart. You merely broke their engagement. Timofey wandered alone toward the hall.”⁷⁴² Pnin himself is referenced as “Timofey,” so the name bears associations with its creator, but otherwise, this could stand alone as a short story, albeit with little aesthetic value. @vvnabokov thus calls back to Nabokov’s originals while creating new contexts through the processes of reception. These connections would never be formed by traditional compositional hypertext method and although there is a large amount of trial-and-error, the outputs teach us something new, however small, about Nabokov’s works. In this small-scale experiment in speculative hypertext we can see the distal-to-distal nature of the hypertext circus on Twitter. The social network’s platform and API have allowed micro-speculative hypertexts to flourish on two different levels: (1) a random tweet that contains a juxtaposition of content that although unrecognisable, creates a chuckle; and (2) the tweets that feature recognise original material recontextualised. The level of receptional understanding for a number of these tweets is secondary to the appreciation of how they appear in juxtaposition with other elements of a user’s timeline. In all, the constant recontextualisation of the Twitter environment distils a unique hypertext environment for each individual user.

Copyright

One of the major barriers to open receptional hypertext is copyright which favours the archive over the hypertext circus. The first copyright act, The Statute of Anne, formulated in 1709, “gives three main motivations for the legislation. First [...] to outlaw the pirate trade in books. Second, by preventing piracy to remedy a practice seen as being to the ‘very great detriment’ of authors, leading ‘too often to the ruin of them and their families’. Third, ‘for the encouragement of learned men to compose and write useful books.’”⁷⁴³ Copyright was not initially proposed to stifle creativity as it offered artists a way in which to build upon prior art without reprimand from the law, but with extensions such as the Sonny Bono copyright act, which pushed copyright law another step closer to perpetual extensions in the United States, copyright has become increasingly power wielded by agents and publishers rather than authors and readers. This has stunted the utility of forking the Literary Web as more restrictions are placed on creative and digital academic work. The Digital Millennium Copyright Act (DMCA), the first

⁷⁴¹ Vladimir Nabokov, “CrÃ³mlin on my bald spot; we touch in silhouette.” @VVNabokov, October 20, 2013, <https://twitter.com/VVNabokov/status/391993502865039362>.

⁷⁴² Vladimir Nabokov, “Yet I Trust That My Heart. You Merely Broke Their Engagement. Timofey Wandered Alone toward the Hall.” @VVNabokov, October 22, 2013, <https://twitter.com/VVNabokov/status/392763574571270144>.

⁷⁴³ Gillian Davies, *Copyright and the Public Interest* (London: Sweet & Maxwell, 2002), 4.

internationally applicable legislation tackling the issues of digital copyright, is a hybrid form and while it offers some safe harbour provisions, equally it does not fully understand the utility of the digital, and the workings of the copy on the web.⁷⁴⁴ One of the main casualties of brute forcing print-based legislation into digital environments has been the blurring of much fair use provisions, as it has become harder to reuse material for legitimate creative work without being sued for breach of copyright.

This is a major problem, but there have been several different, often innovative ways in which the barriers of copyright have been pushed that offer the Literary Web methods with which to flourish. As Hilderbrand argues, “copyright actually insists on aesthetics and recognizes the importance of tangibility or interfaces: the law *does* not protect ideas, only *expressions* in *fixed forms*.”⁷⁴⁵ Copyright law only protects the image or words as they appear in the original, so paraphrase and description are fair game. This was central to the formation of copyright as it allowed for creative expression to expand upon prior art. Robert Spoo has noted that the tendency of the Joyce Estate to vigorously protect ideas and content of Joyce’s texts through copyright means has led Joyce scholars to develop what he terms Design-arounds. “Design-arounds help a manufacturer stay on the legal side of protected ‘prior art.’ But a scholar’s use of ultra-safe substitutions for literary art is a different matter. Timid, bloodless paraphrase, unrelieved by forthright detail or fair-use quotation, does not inject a functional equivalent into the intellectual marketplace.”⁷⁴⁶ The DMCA has exacerbated issues of fair use through greatly restricting its jurisdiction in digital media. Hilderbrand and Bielstein’s work on the DMCA and trying not to ask for permission offer two pervasive models for how to deal with this crisis.⁷⁴⁷ Many of the examples cited above, particularly sites such as Twitter, offer platforms in which fair use can be evoked if challenged and push the limits of receptional hypertext. The safe-harbour provision of the DMCA states that hosts are not personally responsible for copyrighted material on their sites, which is only required to be removed once someone has requested a takedown. Twitter provides one of the safe harbour sites on the web, as users can create their hypertext experiments with a DMCA takedown resulting in the account being suspended but no more severe action. Until recently, this had protected Twitterbots, but @555μHZ, an account that tweeted stills with captions from *Top Gun* every 30 minutes was issued with a takedown notice, resulting in the account’s suspension.⁷⁴⁸ This is one of the first cases of a Twitterbot’s

⁷⁴⁴ Hilderbrand, *Inherent Vice*, 103, 242.

⁷⁴⁵ *Ibid.*, 82.

⁷⁴⁶ Robert Spoo, “Copyright and ‘Design-Around’ Scholarship,” *James Joyce Quarterly* 44, no. 3 (Spring 2007): 578.

⁷⁴⁷ Hilderbrand, *Inherent Vice*; Susan M. Bielstein, *Permissions: A Survival Guide, Blunt Talk about Art as Intellectual Property* (Chicago: University of Chicago Press, 2006).

⁷⁴⁸ The name “555μHZ,” or one cycles per 1,800 seconds (microhertz) comes from the “framerate” – i.e. the speed at which the pictures refresh to create the illusion of action in a movie – of the Twitterbot’s post rate of one tweet every thirty minutes. See Max Read, “@555μHz Is Dead, Long Live @555μHz.” *Weird Internet*, February 26, 2014. <http://weirdinternet.gawker.com/555-hz-is-dead-long-live-555-hz-1525099909?rev=1393365482>.

demise at the hand of the DMCA, although the performance was pictorial rather than textual which may have drawn more attention towards it. One of the other large archives currently active, eBooks for reading such as Amazon Kindle, offer the largest grey area for the base material for many of these activities, and the last section of the chapter will assess how the Kindle is working as a networked eBook that facilitates much of the activity discussed above.

eBooks as Basis of the Circus

We can trace the contemporary eBook to Project Gutenberg, a digitisation project started in the early years of ARPANET, the forefather of the Internet. Michael Hart, the founder, started digitising material in the public domain before the infrastructure was there to support him, sensing that it would become easier over time. Since ARPANET was predominantly for education and military purposes, Project Gutenberg functioned as an “unofficial but tolerated activity” on the network in “an effort to make historically significant documents available over the network. Hart, who was not an ARPA researcher but who had acquired an account at the University of Illinois, began by posting the Declaration of Independence on his site’s computer in December of 1971.”⁷⁴⁹ Over 40 years later, Project Gutenberg has found a new home on the Web and offers over 42,000 books, focusing primarily on “classic texts that had passed out of copyright; these were the earliest electronic books generally available.”⁷⁵⁰ Project Gutenberg’s philosophy has been to release a large quantity of texts rather than assured their quality, thus forming a precursor for Google Books rather than an exemplar for scholarly editions to follow. Gooding *et al* have distinguished between mass digitisation as an indiscriminate form, whereby the quality of the actual text is secondary to the volume and catholic scope of the digitisation, while large scale digitisation is more careful in its curation and editing of the finished product.⁷⁵¹ Within this framework, Alan Galey suggests “it was difficult to imagine an explosion of public interest in the reading of amateur-edited texts from Project Gutenberg on devices with negligible processing power and graphical range.”⁷⁵² Despite the lack of scholarly rigour behind the editions, Project Gutenberg has pioneered in the crowdsourcing of proofreading and copyediting. Since Project Gutenberg was formed in the early years of computing, it is unsurprising that the project is mainly textual with limited formatting for those who require it.

Johanna Drucker has expressed interest in the formal ontology of early eBooks, suggesting that eBooks are modelled upon the concept of improving the existing book rather than coming up

⁷⁴⁹ Janet Abbate, *Inventing the Internet* (Cambridge: MIT Press, 2000), 86.

⁷⁵⁰ Kilgour, *Evolution of the Book*, 153.

⁷⁵¹ Paul Gooding, Melissa Terras, and Claire Warwick, “The Myth of the New: Mass Digitization, Distant Reading, and the Future of the Book,” *Literary and Linguistic Computing* 28, no. 4 (2013): 629–639.

⁷⁵² Galey, “Enkindling Reciter,” 217.

with their own framework.⁷⁵³ Drucker concludes that for the long-term success of eBooks, they need to shift for “simulating the way a book *looks*” to “extending the ways a book *works*.”⁷⁵⁴ Drucker reveals the underlying tensions in the first couple of generations of dedicated eReaders and sustained expansion into eBook territory. Due to the discord with physical books, eBooks have frequently been created to closely simulate eBooks to the loss of creating interesting new entities within the framework created for them. For example, many popular eBook formats exist as HTML and CSS enabled, but it is unclear how these are used outside of fairly simplistic formatting issues. The obsession with the looks of the book has not extended to the actual content, as they are often poor replicas due to the lack of time afforded to ensuring eBooks match the same quality as their printed counterparts. As the marketplace matures, these texts could potentially outpace their print counterparts due to the ability to update errors and formatting issues.

The original unmediated Project Gutenberg documents reveal the tensions inherent in the non-facsimile digitisation of text. Through plain text, the original documents are decontextualised of any of their original markers, such as page numbers and are only positioned on a single axis scale of how many paragraphs they are away from the beginning of that particular structure. The two- and three-dimensional qualities of the original text (their physicality through the codex and the way in which pages are structured) are lost and not replicated in metadata. Without the provenance information provided by the original context or metadata, this document remains archival, as it is not immediately accessible for reuse in other contexts. There is also often a disconnection between the Project Gutenberg and the original text which was digitised, as the provenance history is not clearly displayed. Take the problematic example of *Ulysses*, a text entrenched with copyright issues.⁷⁵⁵ The bibliographical record simply states, “This eBook is based on the pre-1923 print editions. C.f. Wikipedia”⁷⁵⁶ If the reader follows the Wikipedia link, it contains sufficient information to demonstrate this stemmatisation is insufficient, as *Ulysses* pre-1923 transmission history is already complex.⁷⁵⁷ Not only was the text substantially revised in between the serialised publication and the first two editions, both of which meet the criteria of pre-1923 publications, but the entire issue of the text in *Ulysses* is problematised.⁷⁵⁸ The drawback with this sort of eBook is that any semblance of a frontispiece or colophon is removed and it becomes difficult to take this sort of a book seriously.

⁷⁵³ Drucker, *SpecLab*, 166.

⁷⁵⁴ Ibid.

⁷⁵⁵ Spoo, *Without Copyrights*, chap. 4–6.

⁷⁵⁶ James Joyce, *Ulysses*, 2003, <http://www.gutenberg.org/eBooks/4300>.

⁷⁵⁷ “Ulysses (novel),” *Wikipedia, the Free Encyclopedia*, July 24, 2013, [https://en.wikipedia.org/w/index.php?title=Ulysses_\(novel\)&oldid=562253307](https://en.wikipedia.org/w/index.php?title=Ulysses_(novel)&oldid=562253307).

⁷⁵⁸ Arnold, *Scandal of Ulysses*.

The Voyager Company was one of the most prominent publishers of “hypermedia-enhanced or ‘expanded’ books (as the Voyager Company calls its electronically footnoted reproductions of printed texts).”⁷⁵⁹ These enhanced books were built upon *HyperCard*, the platform discussed in chapter one. This bootstrapped many of the features of the platform onto enhanced features that represented the more recent work of DVD extras and iPad App-book crossovers, whereby one can see the manuscript of the text and extras which are presented in a hypertext format.⁷⁶⁰ This bootstrapping has been criticised, since “Voyager’s use of technology, though a skilful demonstration of a conservation economy of multimedia, by no means provides any far-reaching lessons in innovative applications of technology.”⁷⁶¹ Furthermore, unlike the work of Project Gutenberg, which can be seen both online and through remediation of many of the free books available for download on the Kindle and a plethora of other platforms, the limitation of utilising the vogue platform is that many of the titles remain both out-of-print and inaccessible to those wanting to engage with them now.

The Kindle as Networked eBook

When we think of the eBook marketplace in the early 2010s, it is difficult to think too far without evoking one of the market leaders, Amazon’s Kindle. This platform has become the eReader *par excellence* due to a mixture of an extensive userbase, a great range of digitised books and a strong line of hardware related to the Kindle and software available for computers and mobile devices alike. The arrival of the Kindle signalled Amazon’s full assault on the eBook market after an initial foray into eBooks in 1997 with discussions with Nuvomedia over the Rocketbook that ended up not leading to a deal.⁷⁶² The first murmurs of an Amazon eReader emerged in 2004 when Lab126 was integrated into the Amazon brand and the first generation launched exclusively to the United States in November 2007.⁷⁶³ Amazon had spent several years developing a Trojan Horse in the Search Inside the Book feature to ensure they had the content available to launch with the quantity of eBooks required for publication⁷⁶⁴ A second major coup came from a deal with mobile data carriers to enable the Kindle to have a painless and free 3G connection to allow worldwide minimal friction for near constant access to new eBooks.⁷⁶⁵ While the device was originally strong enough as just an eReader, the prototype like quality of the first generation was matched by a hodge-podge of additional features meant to make it more competitive with the incoming iPad and other tablet, although these “were quarantined in

⁷⁵⁹ Coover, “Hyperfiction.”

⁷⁶⁰ McCracken, “Expanding Genette’s Epitext/Peritext Model.”

⁷⁶¹ Glazier, *Digital Poetics*, 136.

⁷⁶² Brad Stone, *The Everything Store: Jeff Bezos and the Age of Amazon* (London: Bantam, 2013), 225.

⁷⁶³ Richard Brandt, *One Click: Jeff Bezos and the Rise of Amazon.com* (London: Portfolio Penguin, 2011), 136 & 139.

⁷⁶⁴ Stone, *Everything Store*, 249–250.

⁷⁶⁵ *Ibid.*, 236.

an unusual ‘experimental’ section of the device.”⁷⁶⁶ The Kindle as a piece of hardware thus has somewhat of an identity crisis, but the eBook is still core to its development as “Amazon has made profitable plainness of design”⁷⁶⁷ and “the Kindle [... lends itself] particularly well to formless content because the new format does not change the content.”⁷⁶⁸ The Kindle’s complex materiality is the perfect case study to assess the transformational nature of the contemporary eBook.

The use of e-paper, a screen that resembles paper through use of imprinting the content under the screen rather than constantly flickering in and out of existence, and the ability to read high quality texts on both tablets and phones has transformed our relationship between computing devices and literature, but there are other formats that have not been as successful as Amazon’s proprietary format for one particular reason: big data. Amazon has a large user base and many ways in which these users can interact with the text and other users.⁷⁶⁹ The Kindle model exemplifies the shift from the archive to the hypertext circus, as users remediate and recontextualise the contents they purchase from the archival Kindle Store in both authorised (the social networks embedded within the Kindle software) and unauthorised (jail-broken fiction and fan fiction) zones. Furthermore, there is a difference here that they do not acknowledge, that internally, this highlighted text and popular annotations just adds to the swaths of information Amazon have been collecting about bibliophiles since 1994. This has not always been the plan of Amazon, as the early ethos of the company posited professionals and not the users would provide the most valuable reviews. This includes the lists, reviews, and other data submitted willingly by customers, as well as typical transactions and all sorts of algorithmic interactions. With all this data and a platform with a large customer base accustomed to purchasing literature online, it was easy to introduce a new platform to consume upon that existed within the current infrastructure. Amazon have amalgamated many of the aspects of the publishing business as they only require the content of the book to be provided, but offer the finished text to the end user from this information.⁷⁷⁰ This amalgamation includes many of the sites of reception. Figure 26 shows the ways in which a reader can interact with texts within the Kindle App. Some of the activities are authorised and occur entirely within the space of the App (highlighted in green), others are still authorised but send the reader out of the space of the official App (highlighted in amber), and red indicates unauthorised activity that can be reintegrated into the App itself. This network is the only value Amazon brings to these texts as their software enables readers to insert their own PDFs or eBooks and it is a trivial act to

⁷⁶⁶ Ibid., 253.

⁷⁶⁷ Wu, “Kindling, Disappearing, Reading,” para. 8.

⁷⁶⁸ McCracken, “Expanding Genette’s Epitext/Peritext Model,” 109.

⁷⁶⁹ Amazon Inc. “Robots.txt”, *Kindle*, 2013, <https://kindle.amazon.com/robots.txt>

⁷⁷⁰ C.f. Zittrain, *Future of the Internet*.

remove the copyright protection and spread the text. The Kindle platform has instead developed a complex network around the text that threatens to overwhelm the rest of the text, through these extra features that offer “added value” for the reader as they explore the primary text.

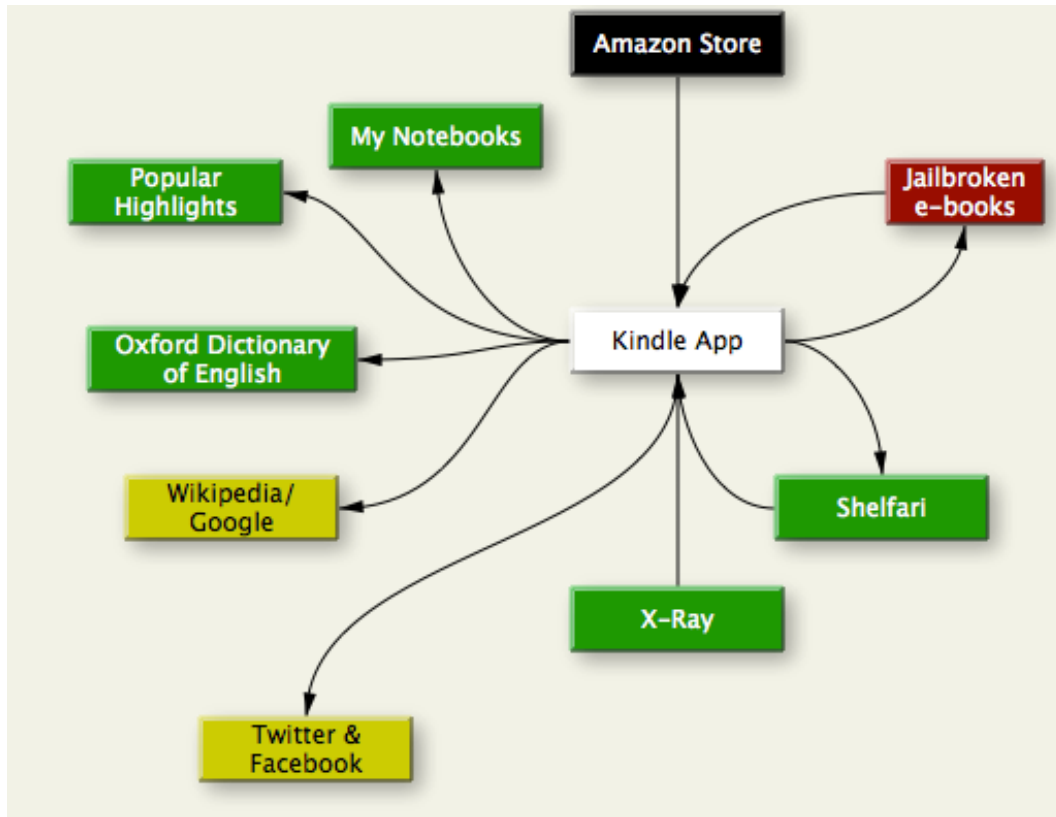


Figure 26 The Kindle Network

The arrival of the Kindle marked the moment that the demand for a large quantity, albeit not high *quality*, digital editions of print texts, rose rapidly and an economy stabilised around these market forces due to the pre-existing infrastructure of the major players. This is in stark contrast to the rise of the MP3 and digital video. Both of these formats were facilitated by the rise of new forms of sharing content rather than a device that led to greater demand: Napster for the former and YouTube and Bit Torrent for the latter. The new forms of transmission that these paradigms allowed has been of interest of a large number of new media critics over recent years, but the supply and demand for these media had a secondary consequence through the widespread dissemination of previously undigitised works.⁷⁷¹ Previous popular forms of media,

⁷⁷¹ C.f. Hilderbrand, *Inherent Vice*; Jonathan Sterne, *MP3: The Meaning of a Format* (Durham: Duke University Press, 2012); Robin Mansell and W. Edward Steinmueller, “Copyright Infringement Online: The Case of the Digital Economy Act Judicial Review in the United Kingdom,” *New Media & Society* 15, no. 8 (2013): 1312–1328; Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: The University of Chicago Press, 2009); Måns Svensson and Stefan Larsson, “Intellectual Property Law Compliance in Europe: Illegal File Sharing and the Role of Social Norms,” *New Media & Society* 14, no. 7 (2012): 1147–1163; Spoo, *Without Copyrights*; Siva Vaidhyathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How It Threatens Creativity* (New York and London: New York University Press, 2001).

such as the CD and VHS were referenced in terms of their continuous potential, but as soon as they were digitised, they became discrete units to be meddled with. Bit Torrent amplified this further by suggesting that the files could be downloaded in any order rather than a strict linear order one might be expected to read a book in. Remixes and mash-ups became more obvious for a larger user base as the tools were there as well as the right conditions to understand that the text was malleable and hypertextual in these ways. The large scale digitisation of texts for *reading* in contrast to data as was the main aim of Google Books, has led to a similar understanding with literature, particularly combined with the ease of jail-breaking eBooks and taking the words out, allowing creative access to texts without the laborious process of scanning and OCRing the text. Since ePubs are effectively HTML in a fancy wrapping, readers can now access and remix the raw material with much greater ease than previously possible.⁷⁷² Although the evidence of this file sharing requires a definitive history, it is clear from a brief search on Google and popular torrent sites that potential readers can find a wealth of content related to books available for free, much of which has been purchased and then cleaned for reuse elsewhere. Although these texts are not perfectly edited, they offer readers a way of creating receptional hypertexts based upon the original texts. The Kindle is a platform of textual generativity for receptional hypertext as users play with the social networks connected to the book as well as reuse the eBooks in different contexts as a fairly clean text for further textual amendments and transformations.

The type of activity that marginalia and the ability to write around the text affords moves hypertext towards receptional forms as readers are left to control their own connections rather than explore pre-existing ones. The annotations interact with the text at the level of their own interpretation of the text and in traditional hybrid of print text and manuscript commentary, the marginalia appear to be subservient to the main content, which can be understood within the framework of the Literary Web as the lack of the ability to begin moving up the hourglass model. Although the active annotator cannot change the original text outside of the copy they have, they can influence future readings of the text in implicit and explicit ways. Consider, for example, the non-textual addition of highlighted texts immediately draws the reader's eye towards these words, making them seem more important on a textual level than was essentially intended by the author. This is in stark contrast to the Kindle platform's intrusive form of annotations (which admittedly can be turned off) that are appropriated into the main text by use of subtle underlining but exist on the same level (figure 27). Partially these processes are coincident since it takes a lot less work to share a popular highlight than to highlight a new part of the text to share.

⁷⁷² John Maxwell quoted in Galey, "Enkindling Reciter," 232.

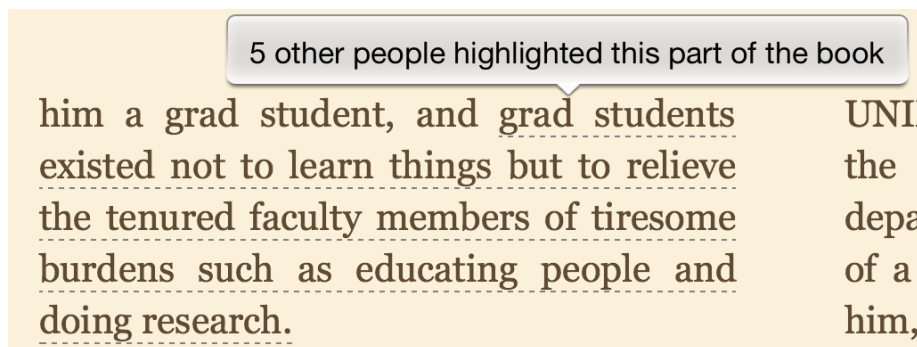


Figure 27 Social annotations in Neal Stephenson's *Cryptonomicon*⁷⁷³

It is unlikely that a lot of material that is annotated will be passed on to another user unless the author is deemed important and their computers are purchased such as Salman Rushdie's desktop, which has been preserved and emulated by Emory Library to ensure that important metadata will be available for future researchers, such as what games and MP3s Rushdie was using while composing his novels.⁷⁷⁴ Annotation functions in a different way in the digital age, where it is consciously shared and added to the group consciousness, such as with Kindle's additional features. Jackson further states that "The one thing [marginalia] hardly ever do is trespass into the text itself to write heads or commentary between the lines: that space is reserved for a special kind of reader's aid, the interlinear gloss or word by word translation."⁷⁷⁵ Most digital annotation platforms enact this distancing in a more extreme sense as the annotations appear in a completely different environment, such as the wikis and forums discussed above as well as in separate window in the Kindle App. The intrusion is as little as an underlined piece of text that does not greatly affect the reading experience. The public nature of highlighting and annotating on the Kindle is a far cry from the mostly private transactions of print-based marginalia. These public traces give the researcher an understanding of a particular moment of the reader's annotation:

Further complicating this three- or four-way transaction (text, reader, target audience, unknown future reader) is the variability of the reader's mood and approach. It takes time to read a book. Circumstances change. Levels of engagement and concentration change. The reading may be rereading, and marginalia may be written on different occasions for different purposes⁷⁷⁶

The initial four-way transaction is positioned differently as the annotator may be conscious of the wider audience of the book, since their annotations will be integrated into the entire edition rather than a single copy. The target audience and unknown future reader expands to include

⁷⁷³ Neal Stephenson, *Cryptonomicon [Kindle Edition]* (London: Random House, 2012), 78.

⁷⁷⁴ Matthew G. Kirschenbaum et al., *Approaches to Managing and Collecting Born-Digital Literary Materials for Scholarly Use*, White Paper to the NEH Office of Digital Humanities Level 1 Digital Humanities Start-Up Grant (University of Maryland, May 2009), 16, http://mith.umd.edu/wp-content/uploads/whitepaper_HD-50346.Kirschenbaum.WP.pdf.

⁷⁷⁵ Jackson, *Marginalia*, 28.

⁷⁷⁶ *Ibid.*, 96–97.


anyone who has purchased the book, and the unknown future audience is anyone who wishes to look at Kindle highlighting data.


Without a systematic analysis of the Kindle platform beyond the scope of this chapter, it is impossible to fully appreciate the ephemeral networks users engage on when using the Kindle. It is possible, however, that once an eBook has been purchased through the Kindle Store, that this would then become a surrogate for a self-scanned and OCR'd edition of the text, as it is much quicker to strip the text from the Kindle. The place in which we can see the receptional hypertext most, in a completely different context, is the most popular highlights and notes features of the Kindle. The Most Popular Highlights features, which is opt-in for users as both part of the Kindle experience as well as to author, reveals any segments of the novel that have been deemed interesting by at least three readers. This has created a corpus of over one million unique annotations, making it the largest dataset of evidence of reception in book historical research. As we have seen, marginalia are akin to spatial hypertext in the fact that it refers back to something distant and often with a large disconnection for a chunk of the audience as it is based upon the personal vocabulary of the user. This is inescapably true when looking at the popular highlights as it is very difficult to ascertain the reason why tens of thousands of readers decided to highlight a particular passage of *The Hunger Games*. These create a bond between disparate aspects of the novel in a similar way to the Victorian anthologies, so that the readers know what to read, but the experience in its entirety is disorientating and does not contain much useful information. The top three highlights (figure 28) represent some of the more typical uses of the highlighting feature. From these examples, we can see that highlighting is associated with pithy aphorism (it should not be overlooked that these are Tweet length quotations), parts of the book that everyone knows, or longer passages, but all of the above are chosen as the readers are deemed to like them. Obviously, this is the behaviour of an unquantifiable subsection of the readership, and there may be elements of following what others have done. Some of the more interesting examples that are not so clearly linked emerge further down the list of popular highlights. Oddities such as “THE HISTORY OF ALI BABA, AND OF THE FORTY ROBBERS KILLED BY ONE SLAVE” a story title from *Fairy Tales Every Child Should Know* has been highlighted by 1900 people.⁷⁷⁷ Users idiosyncratic highlight *sharing* also reveals patterns such as highlighting 24-29 for a single month in the *1901-2101 Kindle Calendar and Day Planner* (51 highlights) and a string of characters from *Simple Word Find Volume 3* (101 highlights), a compendium of word search puzzles, possibly since these readers are hoping to share the

⁷⁷⁷ Amazon Inc. “Fairy Tales Every Child Should Know.” *Kindle [Popular Highlights]*, 2014. <https://kindle.amazon.com/work/B000AVTVTK/B000JMLNHI>; Amazon Inc. “Simple Word Find: Volume 3.” *Kindle [Popular Highlights]*, 2014. <https://kindle.amazon.com/work/B006ZOD3S6/B004FGMVIO>.

answers with one another.⁷⁷⁸ Although these might be useful for individuals, sharing these highlights does not increase others' enjoyment of the original texts. A proportion of this activity will have been unintentional, as it is easy to mistakenly highlight a passage and then find it difficult to remove it. My early history of reading on the Kindle reveals such traces, as my eBook equivalent of a Commonplace Book includes an accidental highlight and annotation that are pure nonsense without the context of the learning user (figure 29). Although such traces could be erased, these marks inscribe the ways in which we are learning about eBooks and my formative experience with my first eReader. Similarly, the bizarre popular highlights may have started accidentally, and once it is highlighted for all to see, it simply takes a single mispress to continue sharing the offending item.

Most Highlighted Passages of All Time [What's this?](#)

1.  **Catching Fire (The Second Book of the Hunger Games)**
by Suzanne Collins
Highlighted by 17784 Kindle users
[See this book on Amazon.com](#)

2.  **Pride and Prejudice**
by Jane Austen
Highlighted by 9260 Kindle users
[See this book on Amazon.com](#)


3.  **The Hunger Games**
by Suzanne Collins
Highlighted by 9031 Kindle users
[See this book on Amazon.com](#)

Figure 28 Top 3 most popular Kindle highlights (as of 29 November 2013)

Pride and Prejudice by Jane Austen
 You have 1 highlighted passage
 You have 1 note
 Last annotated on August 3, 2011

at the next ball." "Oh!" said Lydia stoutly, "I am not afraid; for though I AM the [Read more at location 56](#) • [Delete this highlight](#)
[Add a note](#)

stoutly, "I am not afraid; for though I AM the youngest, [Read more at location 57](#)

Note: hyuj [Edit](#)

Figure 29 My own accidental annotations and highlights

⁷⁷⁸ Amazon Inc. "1900-2101 Kindle Calendar and Day Planner (Holidays and Notes)." *Kindle [Popular Highlights]*, 2014. <https://kindle.amazon.com/work/B006ZVILIS/B004C4465A>

The evidence offered by the Kindle platform can also highlight internal patterns. Taking two of the case studies from earlier in the thesis, Vladimir Nabokov's *Pale Fire* and Lawrence Sterne's *Tristram Shandy*, we can see how these texts are beginning to be remediated by the platform of the Kindle, before users potentially take them off the Kindle platform and transform them more extensively in their own ways. So far, readers have not highlighted much of *Pale Fire* with the most popular highlight being "To this statement my dear poet would probably not have subscribed, but, for better or worse, it is the commentator who has the last word" (F, 29; loc. 214) with only 12 highlights. The majority of the highlights come from the Foreword, with only a single reference to the poem—"Life is a message scribbled in the dark. Anonymous" (ll.939-940, loc. 422)—so this approach does not reveal too much of interest about the text, but the special page dedicated for public annotations and notes offers a few interesting leads.⁷⁷⁹ Here we have evidence of the receptional hypertexts forming around the Kindle that can be remediated. Some of these highlights demonstrate the difficulty readers have with the text, as one user has glossed "No. Yes. And what does sempiternal mean?" (l.373, loc. 545) with "what de [sic] it mean?" despite the fact that highlighting the difficult word pulls up an *Oxford Dictionary of English* definition as "eternal and unchanging; everlasting." This kind of highlight is not for public use but rather to jog the memory of the reader to look up the definition of the word later on, even if this can be instant, but this offers the reader a chance to understand what aspects of the text have been found difficult. The same user repeats the trick by correctly glossing "my name Was mentioned twice, as usual just behind (One oozy footstep) Frost" (ll.425-426, loc. 593) with "Robert Frost?" which is confirmed by clicking on the link included in the Kindle edition to Kinbote's commentary: "The reference is, of course, to Robert Frost (b. 1874)." (C.425-426) This user presents evidence of the ways in which readers tease out the same connections as Kinbote does through their reading, thus enacting the implicit processes Nabokov is facilitating through his indeterminate composition. This is noted by another highlight that states "The whole thing strikes me as too labored and long, especially since the synchronization device has been already worked to death by Flaubert and Joyce. Otherwise the pattern is exquisite." (C.403-403, loc. 2672) is "Kind of hilarious" because of the metadiscursive elements of *Pale Fire*. A final quirk apparent on the page is the gloss to "pada ata lane pad not ogo old wart alan ther tale feur far rant lant tal told" (C.347, loc. 2566) with the reminder to transcribe, thus entering into one of Nabokov's main puzzles.

If the available annotations of *Pale Fire* represent internal reminders and comments, it is unsurprising that the data surrounding the free version of *Tristram Shandy* should contain a

⁷⁷⁹ Amazon Inc., "Pale Fire" *Kindle [Popular Highlights]*, 2014.
<https://kindle.amazon.com/work/B000B10HJV/I480543136>

wealth of social comments.⁷⁸⁰ The structure of these annotations often indicate the looseness of annotation found in spatial hypertext, as a sentence has been highlighted to include the comment “Why did it take so long to get around to reading this book?,” the macro- and micro-levels merge in order for the reader to reveal their feelings about the book. Other comments include “Bibliomancy discredited, but this is where *Tristram Shandy* fell open in my hands.” and “This book is hard to get through, but every so often you get a real gem.” Other annotations demonstrate agreement with the narrator or a slight gloss on the text, but generally these comments are on a similar small scale as their print precursors and contemporaries. The audience and the ability for this data to spread mean the Kindle can scale as a facilitator of receptional hypertext. Amazon has not yet launched a Kindle API, making it difficult to accurately mine the data and reuse it in other contexts. This data is immensely valuable, along with the plethora of receptional data available now—in the form of tweets, blogs and other ephemeral digital traces—that the receptional hypertexts being formed are far more complex than the infrastructures of early compositional hypertexts, as well as far more diffuse and spatial. As the Kindle platform continues to develop, Amazon places an increasing importance on the networks that now engulf the eBook. The natural conclusion of this is a more playful and reception-based outlook on eBooks, as readers are offered a space in which to play with text.

As we have seen from a survey of contemporary activity in experimental speculative hypertexts and the evolution of Amazon’s Kindle infrastructure, the early 2010s may well define a period of transition from the primarily archival functions of hypertext to something more playful. Environments such as Twitter and the many social media integrations on the Kindle allow for low-stakes experiments in receptional hypertext. If this data is allowed to be reused and recontextualised in new ways, moving away from transclusion and other archival impulses of early hypertext systems, hypertext will become something more fluid and useful for the public rather than something that favours the conditions of the composition. These sites of experimentation demonstrate that hypertext, through the model of the Literary Web, and careful delineation between compositional and receptional hypertext, has a place within twenty-first century digital literary culture. The future of eBooks, a format often disparaged by critics of born-digital literature, will shape the direction of receptional hypertext as companies such as Amazon attempt to create infrastructures that move beyond the content, that is far too easily pirated and re-shared.

⁷⁸⁰ Amazon Inc., “The Life and Opinions of *Tristram Shandy, Gentleman*” *Kindle [Popular Highlights]*, 2014. <https://kindle.amazon.com/work/B000AIUPXO/B000JML094>

Conclusion

Although hypertext has been largely ignored over the last decade in digital humanities circles, this thesis has focused on material and receptional forms of hypertext and aims to reinvigorate the field as an important part of contemporary scholarship. Not only does receptional hypertext facilitate greater freedom, but it breaks away from many of the conventions that have held back earlier hypertext systems. It is hoped that through the media archaeology undertaken through this thesis, receptional hypertext will be considered an important part of digital humanities work. While this work has not explicitly engaged with methods through which to facilitate this new type of hypertext, the final chapter discussed some projects that are already working towards this goal. It is no coincidence that two of the sites with the most potential for the future of digital literature (and by extension, physical literature) are primarily textual, in the form of eBooks and Twitter. While eBooks have received a great deal of attention as a format of literary textuality, albeit distorted from what many scholars would like, Twitter deserves more attention as a literary platform. Returning to the scales of the Literary Web model, we can see how both of these are successful entities of the micro- and macro-scales of connectivity. The scales of connectivity reflect current discourse about the differences between close and distant reading.⁷⁸¹ The underlying tension of these debates assesses the role of whether a computer can “read,” although this thesis was not large enough to contain a lengthy discussion on the merits of machine reading, the term “reception” covers such debates without falling into this tricky debate. As the previous chapter has demonstrated through the case study of Twitterbots, new forms of reception where potentially no human has read the underlying material, and never will, are flourishing and represent an important pillar of the Literary Web.

Such experiments are unlikely to come from within the rigid structures of the academy, who consider hypertext to be a closed book. The type of hypertext gains momentum through individuals who push the boundaries of what hypertext might become will slowly shape the importance of the form. Anna Anthropy has noted that a similar shift is occurring in games making, where a group who Anthropy calls Zinesters are creating works using a Do-It-Yourself aesthetic to challenge the so-called “triple-A” or blockbuster games that have become pervasive in the industry.⁷⁸² Part of the problem with the first generation of hypertext scholarship was that the boundaries for access were high with proprietary software and a lack of connectivity, but in recent years many, but not all, of these boundaries have been reduced and a wider audience can become involved in the creation of hypertext. *Twine*, as mentioned in Chapter

⁷⁸¹ Matthew L. Jockers, *Macroanalysis: Digital Methods & Literary History* (Urbana, Chicago and Springfield: University of Illinois Press, 2013).

⁷⁸² Anna Anthropy, *Rise of the Videogame Zinesters: How Freaks, Normals, Amateurs, Artists, Dreamers, Dropouts, Queers, Housewives, and People Like You Are Taking Back An Art Form* (New York: Seven Stories Press, 2012).

Two, is an example of the way in which users can create hypertext experiments with low stakes. The two case studies from the previous chapter, eBooks and Twitter provide two sites in which the hypertext circus is becoming pervasive and a part of the banal rather than something only open to the avant-garde, which was the greatest failing of the first generation of hypertext scholarship. This shift can only happen because of the programmatic efforts of many to digitise a wealth of physical materials, as well as an increased movement towards born-digital object creation. The importance is not embedded within the archive but in the way instead it is reusable or can at least be utilised in unexpected ways. Most of this material is locked down under copyright, but users are testing the limits of these provisions through the mainstream platforms discussed in Chapter Five. If this reaches critical mass, then there may be a movement towards more open archives.

The thesis has focused on a few interdisciplinary areas, and has drawn conclusions in four major areas: (1) the need for a new model of hypertext; (2) a new theory of synthesis between physical and digital literature; (3) the importance of understanding hypertext through the processes of composition and reception as demonstrated through the hourglass model of the Literary Web; and (4) the most fruitful exchanges of literary receptional hypertext are likely to be receptional experiments of the hypertext circus. The conclusion will now summarise the main findings from each of these dominant areas.

Hypertext

This project has undertaken a revision of hypertext theory to update many of the tenets that have been left unconsidered since the first wave of hypertext scholarship, as well as to account for recent developments in hypertext design and implementations. The first chapter revealed the need for this by exposing the inadequacy of current hypertext theory for the current state of affairs. This systematic failure exists in the creation of a false divide between physical and digital literature, which has a greater level of convergence. This is important for inspiration as physical literature offers some of the best ways in order to facilitate receptional hypertext through marginalia and the physical manipulation of the page, which is often available for the author of a digital text, but not so often for the readers. This new form of hypertext is highly subjective unlike the universal links of previous generations of hypertext design. In turn, this reveals the subjectivity underlying compositional hypertext as a similar process was undertaken in the formation of the networks.

Unlike previous models of hypertext, we need to think beyond the link-and-node model and beyond the laboratory towards real use cases of hypertext on its most popular venue, the Web. Saemmer's manipulable gesture offers the opportunity to include traditional forms of hypertext, but also account for some of the more innovative and banal types that have previously been

ignored in the literature. The new model offers a more robust framework for discussing hypertext with references to deixis, which allows us to describe hypertext phenomena as small as a mouse-over gesture to the scale of a collage, search engine result or database full of annotations. Deixis is used in order to discuss the spatial markers of the pre- and post-manipulation content. While proximal markers offer an explicit link between the two states, distal markers may require reconstruction. It is hoped that this framework is extensible to larger forms of hypertext and will be developed into a toolkit for conceptualising a wider range of hypertext.

Physical-Digital Convergence

The model of physical-digital hybrids discussed in Chapter Two and the three dimensional taxonomy of convergence in material, structural and executable elements offers a framework for future analysis of literary works and an ability to assess some projects as not only a single manifestation but of both. The materiality of digital literature was evident at the Electronic Literature Organisation's exhibition at MLA 2014, as three of the almost priceless machines Dene Grigar had shipped over to view three older works of digital literature in their original form were broken and often very physically smashed up once they had been shipped over. The future of digital literature depends on two main factors: (1) the way to preserve them as physical artefacts or some other ways to ensure their documentation and survival; and (2) their integration into wider traditions of the humanities and literature. There are several initiatives to preserve or document these incunabular texts, but more work on standards and ensuring consistency is still required. Moreover, it is of vital importance to disseminate useful information akin to the Short Title Catalogue as to where researchers are able to interact with these works in their original form. Without such a database, those who wish to engage with the original computational environment may not know where to start. The second point, to remove the digital part of the terminology, has been the primary goal of the chapter. These works fit into wider traditions although it must be stressed that this mostly has not been literature but improvisation, performance and so forth. Through integrating these and understanding them within their contexts, we move away from a single form of digital literature to duplicity of digital literatures that are appreciated within their context rather than a homogenous juxtaposition of things that have been created on a computer. Through this normalisation, more useful discussions will begin to take place.

Augmented media, still in its incunabular stages, offers a useful way forward in terms of allowing for compositional and receptional hypertexts to emerge. If we return to Josh's proposal for a physical-digital hybrid edition of *Pale Fire*, we can begin to see how such a convergence could be useful. A clean layout with the readable text of Nabokov's novel, with little in the way of compositional markers, would allow the reader to make their own connections, but with an

augmented device that would scan the page and add layers of annotations or the information for which the user wishes to see on top, or even create their own version within the confines of the extra program to share. Such a version of the text uses the interface and affordances of both media to their full potential while not inhibiting the others. The technology is there and beginning to become more sophisticated, and with this come new opportunities for transmedial hypertext experimentation that is focused on the reader. Such augmentation removes the unnecessary distraction of links to popular highlights and the sort, although future eBook software may offer similar affordances within their interface. The balance of transmedia projects lies in their ability to create distinctive components of the physical and digital aspects of their work, and ensuring that both are used in a way that enhances the work rather than including elements purely for interfacial obfuscation.

The Literary Web

The hourglass model of Chapter Three presents the thesis's primary contribution to the literature and is built upon the agnostic view of the digital-physical divide. Although it takes many elements of previous models of the book trade, its focus on the text and where hypertext emerges brings new insights into the utility of the platform and our understanding of composition and reception. The model is applicable to a range of texts if assessed in a book history way as it offers a way of understanding the ways in which the text is transformed through the multiple agents of the book trade in order to become the final product through the metaphor of filtering. Unlike previous models of the book trade, there is a balance between aspects of composition and reception and forking allows for the reader to become an important part of the afterlife of the text. The model also offers a method for criticism of a single text that focuses on the processes of composition and reception such as *Pale Fire*. This is useful as a new methodology that integrates the processes behind the book into its own narrative. The central innovation of the Literary Web model is to re-assemble previous models of the book trade into a model that can discuss both the text and aspects of its composition and reception while not ignoring the fact that a book's lifespan is altered by the presence of a variety of agents of composition and reception. This framework can be developed upon in multiple ways including for the close analysis of a single text, a guiding principle for discussing the holistic nature of the text's composition and reception, and as we have seen in the final chapter, a methodology for revising hypertext in line with new developments.

The Hypertext Circus

The final chapter of the thesis moved beyond the Literary Web model to speculate on the significance of including hypertext within the receptional aspects of a textual communication model. The hypertext circus posits the importance of subjectivity within hypertext scholarship

and not being entirely sure at what the outcome of a particular experiment will be but understanding that it is useful anyway. Many works of hypertext circus are primarily critiques of compositional practice and the ways in which they hinder our progress. One of the main barriers to extensive work in the hypertext circus is copyright and restrictive access to archives, but there is movement in certain areas towards more open and extensible archives. The two sites most clearly encouraging this shift are Twitter and the Kindle, the former because of the ways in which they have opened up their platform and allowed users to experiment with reusing pre-existing content and bringing in content from elsewhere; the latter because in their efforts to ensure that users will come to the platform and buy books, they have offered a wealth of sharing tools and the ability to easily pirate texts and change them into something new. These micro-experiments, both of which involve fairly everyday technology, will spread into other fields of hypertext and reinvigorate the field of study in the early twenty-first century, particularly as users create new innovative platforms on the top of them. It is vital that this activity is maintained in highly visible places and primarily in a textual environment as this greatly reduces the barriers for access and allows for a range of innovative activities to be created by a range of people for a potentially large audience. The hypertext circus is therefore not an idea sitting at the cutting-edge of scholarly research, but something that is becoming a part of everyday digital life.

Future Work

The thesis's new contributions to the body of knowledge open up new frontiers for discussion of hypertext and the digital literature. The hypertext circus, Literary Web and digital-physical binary offer a new critical vocabulary for analysis of the complex environment of digital literary studies in the early twenty-first century. These terms have a variety of uses for future criticism as tools to re-consider both canonical texts and those at the margins that can now be included as examples of the hypertext circus. Although the discussion of physical literature as a concrete meta-genre to contrast with hypothetical digital literature was primarily used to construct an argument about the importance of a "material turn" for hypertext scholarship, the category deserves further explication as a form of literature that has been relatively marginal in comparison to more established printed texts. The Literary Web also provides a rich framework to discuss book historical aspects of a literary text's composition and reception, while simultaneously offering a framework for literary criticism. While only *Pale Fire* received detailed explication through the model, it could equally be applied to many texts from a range of historical periods.

Through re-considering tenets previously considered central to these fields, the current project hopes to invigorate new debates and more useful definitions of these terms from a material perspective. This work has largely been theoretical with brief case studies of texts that imbibe

the core attributes understudy. A casualty of this approach has been the lack of space for several detailed case studies, other than the analysis of *Pale Fire*, which would demonstrate the versatility of the models built in the thesis. Most readily, the future of the eBook and Twitter as platforms for generative hypertext is worthy of substantial and critical study with attention paid to extended case studies. Although in many cases these two platforms have been left out of the realm of “digital literature” aside from a few extraordinary cases, they offer some of the most fertile grounds for exploring the future of a form in a way that moves away from the avant-garde and into the more banal, as hypertext had done 10 years earlier, and the book centuries before that. It is only through this shift to the banal that serious investigation into these subjects can begin.

Appendix A: PF Editions

Year	Publisher	Notes	Source	*/†
1962	“The Late Mr. Shade” in <i>Harper’s</i> May 1962	Reproduction of the foreword		
1962	New York: G. P. Putnam’s	1 st edn. Hardback		* †
1962	London: Weidenfeld and Nicolson	Review copy with “Extract from Mary McCarthy’s review laid in” ⁷⁸³	M	* †
1962	London: Weidenfeld and Nicolson	1 st British edition	M2	
1964	Taipei: Tzong Shan Publishing Co.	Pirate copy	M	
1964	London: Corgi	[1 st ?] British Paperback		* †
1965	<i>Feu pale</i> . Trans. Raymond Girard & Maurice-Edgar Coindreau. Paris: Gallimard.	1 st French translation	M	
1965	<i>Fuoco pallido</i> . Trans. Bruno Oddera. Milano: Arnoldo Mondadori	1 st Italian translation	M	
1966	Washington: National Library Service for the Blind and Physically Handicapped (BRA 8436)	Handcopied braille. From G. P. Putnam’s (1962)	M	
1968	<i>Fables Feuer</i> . Trans. Uwe Frieze. Reinbek bei Hamburg: Rowohlt.	1 st German translation	M	
1968	<i>Fables Feuer: ein gedicht in vier Gesängen. Marginalia</i> . ⁷⁸⁴ Trans. Uwe Frieze. Reinbek bei Hamburg: Rowohlt	1 st standalone version of the poem [with translation]	M	
1969?	Ted Nelson	Demonstration for HES		†
1972	<i>Bleek Vuur</i> . Trans. Peter Verstegen. Amsterdam: Athenaeum-Polak & Van Gennep	1 st Dutch translation	M	
1973	London: Penguin	1 st Penguin—based on Putnam’s, 1962		
1977	<i>Pálido Fuego</i> . Trans Aurora Bernardez. Buenos Aires: Sudamericana	1 st Spanish translation	M	
1983	<i>бледный огонь [Blednyi ogon’]</i> . Trans. Vera Nabokova. Ann Arbor: Ardis	1 st Russian translation	M	*
1984	<i>Anai bonoo</i> . Trans. Fujikawa Yoshiyuki. Tokyo: Chukuma Shobo	1 st Japanese translation	M	
1987	Narrator: Maurice Shroder. Washington DC. NLS (RC25448)	Cassette re-recording of DBPH, n.d	NL	
1989	New York: Vintage	1 st edition with Nabokov’s corrections		* †
1991	London: Penguin	6 th printing—includes McCarthy’s “Bolt from the Blue”		* † (9 th)
1992	London: Everyman’s Library	Introduction by Richard Rorty		
1994	The Arion Press	Artist’s Book		†
1994	Jimmy Guterman	<i>Storyspace</i> - fragment		
1996	Library of America <i>Novels 1955-1962</i>	Edited edition by Brian Boyd with corrections from Vintage, 1991 and further corrections		* †
1998	Koichi Nakamura	Unknown—pedagogic		
1999	S. Kazinin	Web		* †
2004	BBC Radio 3	Radio Drama		* †
2006	Matthew Roth	<i>Pale Fire</i> concordance		* †
c2007	Tiddly Wiki	Web		* †
c2008	Shannon Chamberlain	Web		* †
c2008	Tundra Squid	Web		* †
2009	G. S. Lipon	Web		* †
2010	Audible	Audiobook		* †

⁷⁸³ “E35” in Michael Juliar, *Vladimir Nabokov: A Descriptive Bibliography* (New York and London: Garland, 1986), 624.

⁷⁸⁴ “Pale Fire: a poem in four Cantos.” Juliar states this edition “includes the poem “Pale Fire” in English and the facing German translation; an abridged version of chap.9 of “Nabokov: His Life in Art” by Andrew Field; and an essay by Uwe Friesel. See “D35” in *ibid.*, 588.

Year	Publisher	Notes	Source	*/ †
2010	Pale Tour	Google Earth		
2010	<i>бледный огонь</i> [<i>Blednyi ogon'</i>]. Trans. Unknown. Saint-Petersburg: Azbuka-klassika		N67	
2010	<i>Fables feuer: Roman</i> . Trans. Uwe Friesel and Dieter Zimmer. Reinbek bei Hamburg: Rowohlt	Updated German translation	N67	
2010	<i>Bledy Oben</i> . Trans. Otakar Kormen and Jana Kantarova-Balkova. Bratislava: Slovart	Slovakian	M2	
2011	Gingko Press	Artist's Book		* †
2011	Washington: National Library Service for the Blind and Physically Handicapped (BR18456)	Updated braille text with introduction from Richard Rorty. Based on New York: Knopf, 1992	NL	
2011	<i>Blady Ogien</i> . Trans. Stanislaw Baranczak and Michal Klobukowski. Warsaw: Warszawskie Wydawnictwo Literackie Muza	Polish translation	N69	
2011	<i>Bledi Ogenj</i> . Trans. Branko Gradisnik and Jelka Kernev-Strajn. Ljubljana: Mladinska Knjiga	Slovenian	N69	
2011	<i>Bledy Oben</i> . Trans. Pavel Dominick and Jiri Pelan. V Praze: Paseka	Czech		
2012	New York: Vintage	US Kindle Edition		
2012	London: Penguin (Apple)	UK eBooks Edition		
2012	London: Penguin (Amazon)	UK Kindle Edition (No index)		* †
2012	London: Penguin	Reset hardback		* †
2013	<i>Solgun Ateş</i> . Trans. Yiğit Yavuz. Istanbul: Baskı Kasım	Turkish		
n.d.	Narrator: Frederick Rolf. Washington, D.C.: DBPH (TB3242)	Phonograph recording. From Putnam, 1962.	M/	
n.d.	Philadelphia: Philadelphia Press for the Blind	Press-braille. From Putnam's	M	
Notes				
M – Michael Juliar's Descriptive Bibliography (1986)		NL - National Library Service for the Blind and Physically Handicapped Catalogue		
M2 – Juliar's revised digital bibliography		* - edition personally examined/owned		
N – Annual Bibliography in <i>The Nabokovian</i> followed by issue number		† - edition for analysis		

Table 6 Transmission History of *Pale Fire*⁷⁸⁵

⁷⁸⁵ Sources: translations from "D35" *ibid.*, 587–8; prepublications from "E35" in *ibid.*, 624; braille/recorded texts: "F35" Juliar, *Vladimir Nabokov: A Descriptive Bibliography* supplemented by information from; "NLS: Quick Search of the Online Catalog," accessed June 23, 2013, <http://www.loc.gov/cgi-bin/zgate.nls?srchagain+10703000+/prod/www/data/nls/catalog/index.html>; piracies from "J35" Juliar, *Vladimir Nabokov: A Descriptive Bibliography*; Further information on editions of *Pale Fire* came from Juliar, "A35: *Pale Fire*"; and the running yearly bibliographies in Stephen Jan Parker, ed., *The Nabokovian*, 1978.

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NABOKV-L mailing list. <https://listserv.ucsb.edu/lsv-cgi-bin/wa?A0=NABOKV-L>.
Penguin Archives. DM2083. Bristol University Library, Special Collections.
Project Gutenberg. <http://www.gutenberg.org>.
rec.arts.books. <https://groups.google.com/forum/#!forum/rec.arts.books>.
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