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# iTouch: Understanding the Role of Emotions in the Design and Reading of Digital Books

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in English

by

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June 2017

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## ABSTRACT

iTouch: Understanding the Role of Emotions in the Design and Reading of Digital Books

by

Elizabeth Shayne

In this dissertation, I discuss how digital books function as new kinds of reading experiences and I explore how a renewed understanding of the reader's emotional connection to the book can help develop more successful and compelling works of digital literature. I argue that the digital book, a category that encompasses both digitized editions of paper texts and complex book-applications, must be understood as a medium distinct from its paper predecessor not simply in terms of how it conveys information, but in how it engages its readers emotional responses. Digital books have their own affordances, design constraints, and material substrates that mark them as distinct from, albeit inextricably tied to, the codex. I show how those affordances, design choices, and materials impact the reader's emotional connection to the book in a way that differs substantially from the print novel. In doing so, I highlight the kinds of emotional connections that digital books excel in creating and argue for a future of digital books that focuses on expanding the playful interactivity and emphasis on readerly agency that is the hallmark of successful digital books.

My research focuses on the digital book as an object in use, one that engenders an emotional response through its form as well as through its content. Each chapter examines a different facet of the digital book, ranging from its paper antecedents to its interactive game-play. In each chapter, I use one focal text to discuss the ways in which that text has been iterated across multiple forms to delineate the role that medium, interface, and design play in

the text's relationship with the reader. My first chapter begins long before the digital book with a history of the Babylonian Talmud that explains how the technologies of writing, print, and reproduction influenced the layout of the book. I show how the layout in turn dictates the way that readers read, respond to, and relate to it as a source of knowledge and as a ritual object. My second chapter takes up the Talmud again and looks at its transformation into multiple digital editions in order to address how the same text can evolve differently in the process of becoming a new book in a new medium. I discuss the implications of these different iterations and how they reflect different ideas of the digital book's effect on readers. In my third chapter, I switch to fiction and discuss Mary Shelley's *Frankenstein* as an example of a text that uses traditional formal elements to engage the reader's emotions. I then read the screen-based adaptations of Frankenstein to show how digital books can engage readerly emotions through interactive choices within the narrative, rather that through narrative transport, the approach favored by the novel. In my final chapter, I look at how digital editions present manuscript facsimiles and I assess how successful they are at generating affective connections between the reader and the texts. Even reproductions are influenced by the interface that presents them and the reader's ability to feel and learn from the facsimile relies on the ability of the interface to invite the reader to engage with and relate to the digital object. Each chapter draws on the discoveries of the previous ones, and by the end of the fourth chapter, I present a blueprint of the successful digital book that depends on the book's willingness to grant agency to its readers and the reader's ability to manipulate the book in order to be moved in turn.

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When then CEO of Apple, Steve Jobs, first introduced the iPad in 2010, he described the tablet as “magical and revolutionary.” Longtime listeners to Jobs will recognize the term “revolutionary” from 2007, when he used the exact same language to describe the first iPhone. Jobs tells the rapt audience that the iPhone is “something wonderful for your hand,” while the Mac in 1984 is “an experience that those of us who were there will never forget”. Though he also discusses what these computers can do, Jobs always opens with the device as a creator of emotional experiences. Like a computer virus, Jobs’ vision infects the rest of the field. Five years after his death, the language used throughout the industry continues to reflect a view of the products that is not simply focused on user experience, but focused on the emotional resonance between person and hardware. Though Tim Cook, Apple’s new CEO, appears to favor phenomenal over magical, there is one specific story that repeats with every new product: “You are going to love it.”

And people do. According to Martin Lindstrom, iPhone owners quite literally love their phones and, when placed in an fMRI machine, iPhone users brains’ will light up as if they have seen a loved one. The iPhone, and the iPad to a lesser degree, are metonymic objects that stand in for the larger categories of smartphone and tablet. Apple products are—and, not coincidentally, are marketed as—lifestyle choices that one invests in because they are attractive rather than merely convenient. If the device is attractive, then we are drawn to it, and wish to possess it. The language of romantic love and of smart phone acquisition mirror one another, and perhaps Apple’s willingness to leverage that connection provides some explanation for why it is the wealthiest company in the world. Apple devices have been paradigmatic of the computer objects with which their owners are invited to form a bond, but

they merely one example of that category. To love the iPhone is, for some, specifically to love the iPhone and nothing else, but Lindstrom's conclusions suggest that it is not the exact phone that is beloved, but the larger category of devices through which we encounter the world and which are marketed to us as not merely objects, but as objects of our affections.

Love for an object is no strange state for a person to find herself in, as any avowed bibliophile would attest. To love a book may be to love the smell of paper, the feel of the worn spine, and the familiarity of the cover. More often, though, love is reserved for the texts that books contain.[1] Readers love the narratives they find in their favorite fictions, but books stretch beyond the confines of fiction and love describes just as accurately the desire to sit surrounded by nonfiction in a library or to reverentially read one's holy writ.

Yet the division between codex and text—and between the iPhone and its functions, one of which is to be a book—is both fuzzy and permeable. The place of interaction, the interface, defines and delimits the scope of the experience and sets the rules concerning what both the object and the user can do to and for one another. If books are merely the delivery vehicles for their texts, then the interface should make no difference. Hardback, mass-market paperback, ebook, enhanced digital edition: all should work equally well in conveying the text and its emotional valence to the reader. Such assumptions are not borne out; the interface may appear to pass beneath the reader's notice, but it affects her nonetheless. A common critique of the e-reader is that it does not "feel" like a book and that the reader prefers paper. The objection is not framed as a logical dismissal of an inferior version, but as an affective

[1] I try to be consistent in my use of text to refer to the semiotic content, codex to refer to the material object that lives on a shelf, and book to refer to the packaged whole independent of physical or digital container, although the line between text and codex is, as I note further down, fuzzy and so my usage may sometimes seem so as well.

bond with one medium that cannot be extended into another. This objection to the formal and material properties of a specific textual instance has significant ramifications for the text's ability to do its job, so to speak. Anne Mangen and Don Kuiken found that digital books do not hold up against their paper counterparts and readers both take in less meaning and experience less affect when they read a PDF on an iPad screen than when they read the same text printed on paper.[2] The iPad, like the codex, is not merely the interface to the text, but an integral part of the experience of reading that dictates what we know as well as what we feel. We love our devices and our books, but not, it seems, our devices as books.

According to Mangen and Kuiken, the problems with the iPad were twofold. First, even participants who were used to reading on an iPad found it awkward and comparatively difficult to keep their place on the page. This dislocation, Mangen and Kuiken hypothesize, distracted the readers and interfered with retention. Moreover, when reading narrative non-fiction, the participants felt less sympathy for the characters. And though the degree of sympathy felt was not statistically different between the digital and print versions of the fictional narratives that participants were given, they reported feeling less "transport," the experience of being swept up and away by a narrative, and thus lower levels of empathy. Mangen and Kuiken hypothesize a link between the two: the awkwardness and dislocation that led to less comprehension might also disrupt emotional identification. That is, there is something about the nature of the platform that interrupts the reader's ability to feel for and feel with the characters in it.

[2] See Mangen and Kuiken's 2014 article, "Lost in an iPad: Narrative engagement on paper and tablet" for more details. PDFs, an acronym that stands for Portable Document Format, is the most paper-like of all the digital books and provides the closest comparable experience to reading paper.

With this distinction between sympathy and empathy, Mangen and Kuiken gesture towards the complexity of discussing feeling and books. The emotional register of literary experience is multilayered; David Miall and Don Kuiken distinguish between the pleasure we take in reading and the affective response we have to the narrative and characters. I might, for example, both love Mary Shelley's *Frankenstein* and dislike (Victor) Frankenstein. Moreover, I might have a special affinity for my copy of *Frankenstein* with my annotations from having read and taught Shelley's work. All of these layers are part of the felt experience of reading a book and they inform our capacity to be affected by the book. Miall and Kuiken are two of many who are working in this emerging field that examines what happens to make us hallucinate vividly for several hours while staring at a succession of inked marks on dead trees.[3] Our society's knowledge of how the human brain works, though far from either complete or comprehensive, has advanced enough that we can discuss why we read.

Scholars frame this question in two ways, depending on where their interests and specialities lie. Some like Miall and Kuiken, as well as Norman Holland and Paul Armstrong, ask what it is about the organization of the brain that makes reading an enjoyable, affective experience. Others, like Richard Gerrig, Patrick Colm Hogan, and Kay Young focus instead on what it is about narrative and specific narratives that cause human readers to experience affect. Reading these two approaches together, we see the partnership between the book and the brain that, working together, creates the affective experience of reading. The readerly mind must be receptive to the text, but the text in turn must respond to the reader. Gerrig describes this experience through the dual metaphor of "being transported by the narrative

[3] I believe I took this joke from Randall Munroe's webcomic xkcd, but the mind is a strange curator and I am honestly not sure.

through performing the narrative" (6). We are moved by the book as we, in turn, move ourselves through the book.

In these analyses, with the exception of Mangen and Kuiken's study that I mentioned earlier, the focus is on the text and not the codex. The printed book stands as the exemplary book even as the page technology and binding apparatus that constitute it are deemed immaterial. Based on Mangen and Kuiken's research, we would be right to take the printed book as *the* book when the digital copy fails in its project of evoking emotion. If, however, we treat the digital book not as a poor and pixelated copy of the real book, but as both a different medium and a different genre in its own right, then we can ask anew the questions of how the digital book builds emotional relationships between its readers and itself[4]. As a new media object (as well as an object of new media), the digital book deserves to be read through its own paradigm that attends to its material and formal predecessors and that acknowledges the ways in which its capacity to make meaning and evoke feeling is different than that of the book. The digital book is platform dependent, both written and encoded, constrained by the digital interface, nearly always hypertextual, and often interactive.[5] And

[4] I use the term digital book instead of ebook, although the latter is a subset of the former, to indicate that digital books occur in multiple forms and are not just limited to digital versions of print books that are put into software containers to be read either on dedicated e-readers or in an application on a computer. A digital book may be a webpage, an application, a .epub file, or even a series of print pages that can only be read using an augmented reality application on a mobile device. Part of the problem with digital books is thinking of them as only ebooks, rather than the wide range of ways that one can read a work on a screen.

[5] While many ebooks, especially digitized books, are not hypertextual like the works of hypertext-based, branching-path narratives I discuss in Chapter 3, they still incorporate simple links between the number indicating the endnote and the endnote itself or between the chapter title in the table of contents and the start of the chapter itself. Though more often part of the metatextual resources rather than the text itself, the links still constitute an aspect of the reading experience. As for the slippery term "interactivity," Espen Aarseth's canonical work, *Cybertexts,* explains the problems with the terminology quite well. When I use it, I use

while the constitutive elements of the digital book can often be found in other forms of new media and even in some less paradigmatic printed books, such as artists books and reference books, it is the recombination of those antecedents into the digital book that makes it new and, crucially, in need of its own reading.

It is in the intersection of these multiple concerns, as they meet on the interface of the digital book, where I begin my work to understand how, quite literally, digital books make us feel. To understand the mechanisms of the digital book is to read its interface up from the material platform it was built for to the logic of the capacitive touch screen the reader uses to turn the page. My work, however, expands on how the form and design of the object makes meaning in order to show how those formal and design elements are involved in crafting emotional experiences and building a relationship between the digital book and its reader. That is, I move beyond how the digital book works as such to how it works on us. My goal is not simply to show how layout, design, and interface influence the reader's emotional relationship with the book in both its digital and print forms, but to explain how such knowledge can help us write and produce digital books that take proper advantage of what the medium can do. Rather than second-rate books, I argue for reading and writing digital books as their own medium that is grounded in the affective capacity of the interface.

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interactivity to mean an object that alters its output in response to deliberate input from the user. By this definition, a hypertext fiction that offers only three possible branching paths would still be interactive as the reader's ability to decide which path to take is the relevant detail. Note, of course, that interactive is by no means the same as interesting. I would argue that printed texts like the "Choose Your Own Adventure" series of children's books or Jason Shiga's graphic branching path novel *Meanwhile* should also qualify as the output of the page depends on the reader's choice. Like all attempts at drawing lines, I am unwilling to commit to hard and fast boundaries, but at least this definition does not force me to claim that Shiga's exact same text, for example, is interactive when read as an iPad application, but not as a printed book.

To examine the digital book without reading it through the lens of the traditional fictional text is not to read it *sui generis*, but to situate it first within two distinct critical frameworks that are far more attentive to the material and formal properties of their objects of study: the bibliographic analysis of the codex and the media specific analysis of new media. The former encompasses both the historical understanding of the book object and the contemporary use of the codex to create literature that could only exist as a bound object of paper and ink. The latter treats the digital in the digital book, recognizing that new media objects are always contingent on the platforms on which they function and, moreover, can only be understood properly when one accounts for their hardware, code, interface, and design. One could even argue that the former is a version of the latter, applying the logic of medium to the printed book in a way that reveals its own dependence on the platform. In that respect, this project was inspired by Lisa Gitelman's work in *Always Already New*, which discusses the technologies of the late 19th and late 20th centuries in conversation with one another. Gitelman draws attention to media historiography and the process by which media move from new and interesting to old and commonplace. To reverse the process is both to imagine a history for new objects and to re-new the experience of older ones, like the printed book. Gitelman's work complicates the dichotomy that comes so naturally when speaking in terms of new and old, print and digital, interactive and non-interactive. Through her work, I find it easy to imagine an archeology of the digital book that draws on the technical affordances of the codex without creating an evolutionary hierarchy of media.

While the role of the codex in shaping the history of knowledge has been well documented by scholars such as Elizabeth Eisenstein and Roger Chartier, my project draws most notably on Bonnie Mak's book *How the Page Matters.* Mak relocates the site of critical

attention from the codex to the *pagina*, recognizing the page of the book as a site of meaning-making and explains how font choices, page layout, and organization are metatextual elements that themselves make claims about the text. As Mak explains, "[the] page transmits ideas, of course, but more significantly influences meaning by its distinct embodiment of those ideas" (5). Mak excavates the history of the page as an interface and, in doing so, provides an alternate account of how books make meaning. I use her analysis as groundwork for my own claims, shifting the conversation to examine how the matter of the page matters to the reader's emotional experience.

In a sense, Mak's book is a form of media specific analysis that takes place in older media. N. Katherine Hayles coined the term Media Specific Analysis, or MSA, in her book *Writing Machines*, where she argues that "the physical form the of the literary artifact always affects what the words (and other semiotic components) mean" (25). Textual analysis, especially of new media objects, should account for the specific platform and code and infrastructure that defines and delimits the conditions of its reading. To put it another way, even when one is reading the object as a text rather than as a new media object, the specificity of the media object—hence media *specific* analysis—especially as compared to literary objects in other media like print, must remain part of the reading. This is what, for example, Noah Wardrip-Fruin does with procedurally generated digital texts in *Expressive Processing* and it comprises a significant portion of Johanna Drucker's critique of the ebook as well.

In "The Virtual Codex: From Page Space to e-Space," Drucker grounds her scathing criticism of the ebook in its failure to attend to the specificity of its own medium. She faults the ebook for trying to replicate shallow elements of the codex without engaging with the

affordances those design features are meant to provide. “Thus in thinking of a book, whether literal or virtual, we should paraphrase Heinz von Foerster, one of the founding figures of cognitive science, and ask ‘how’ a book ‘does’ its particular actions rather than ‘what’ a book ‘is’” (Drucker 7). For Drucker, the paradigm for ebook design relies on discovering new and platform appropriate ways to perform the book. What she calls the phenomenal book is another way of articulating the problem of the digital book: the harder it tries to be just like print, the worse it does at being a book.

My work, though inspired most directly by Mak’s reading of the page, differs distinctly from all the above examples in my focus on feeling rather than meaning. While the two are necessarily entwined—feeling itself is also a form of meaning and meaning also relies on feeling to convey semiotic content—there remains an important distinction between readings that focus on what the semiotic content of the interface is and readings that assess how the affective register of the interface operates and influences the reader. As affect studies and, more broadly, the study of literature and the mind grows as a subset of literary studies, I see it as imperative that we take this understanding of MSA and the role that form and platform play in conveying meaning and apply that to how we read the affective capacity of the digital book.

Earlier, I discussed a comparatively narrow slice of the field of psychology in literature, what one might term, as Paul Armstrong did in the title of his book, *“*how literature plays with the brain.” This field, as is the way of intersecting specialities, exists in a Venn diagram with other concerns, but for my purposes, it interacts with affect studies in a particularly fruitful fashion. Affect is itself a loaded term, one used alongside emotions and feelings either interchangeably or to mean distinct aspects of experiencing emotions. Based

on the writer in question and what he or she seeks to understand, affect can mean anything from the moment before the feeling is even felt (Brian Massumi drawing on Gilles Deleuze) to a discrete set of seven experiences that differ in how they influence our cognition (Sylvan Tomkins). In this project, unless explicitly stated otherwise, I follow neuroscientist Antonio Damasio's lead in distinguishing between feeling and emotion, but not between emotion and affect. "I have proposed that the term feeling should be reserved for the private, mental experience of an emotion, while the term emotion should be used to designate the collection of responses, many of which are publicly observable" (Feeling 29). Damasio's work is in line with other neuroscientists on whom I rely, such as Jaak Panksepp, who distinguishes between affect and our experiences of those affects. Damasio would call that feeling or, in some cases, the feeling of feeling. While individual writers may use affect or emotion exclusively, I find that—as a non-scientist writing at the intersection of specific terminology and colloquial usage—I do not differentiate between affect and emotion, but use feeling more specifically for the conscious, reflective experience of an emotion.

What constitutes emotions, and feelings, and how they grow out of the encounter between a person and a text, remains an unsettled field. Though research into why we experience emotions secondhand—whether by seeing or hearing or reading—proceeds apace, the eventual conclusions are not strictly relevant to my project. I am less concerned with what happens inside my mind to deepen my interest in a book than what it is about the book that catches my attention. My approach, understandably, draws on the research done by psychologists, but more closely mirrors the scholarship done in the field of literary studies that identifies how specific emotions and feelings are written (or, in the case of the works I study, also encoded) into the books themselves. Like Sianne Ngai's reading of *Ugly Feelings*,

I look at affect as something that emerges out of the encounter between the person and the text. Affect studies is a substantial field that is deeply concerned with the ways in which affect, as labor and as experience, has historically been devalued in opposition to rational thought and how such devaluation is both specious and dangerous. My work is within that tradition, focusing specifically on how affective experiences while reading are built by the book and how crucial those experiences are to what we think uncritically of as reading. But my work is also entrenched in the digital humanities, a field that intersects with a different view of how humans and their machines emote together.

While the psychology of emotions provides the scaffolding for my project, my approach is equally inspired by the theories of user-engagement and emotion put forward in Human Computer Interface studies, often abbreviated as HCI. Though a much more prescriptivist approach to understanding the experiential relationship between the media reader and the media object, HCI has many parallels to the studies of reading I mentioned earlier. This prescriptivism should not come as a surprise; HCI is primarily formulated for creators and designers and, as such, much of the literature is written to tell software designers, for example, how to optimize their applications for user engagement. In doing so, HCI explicates the specific ways that media objects influence not merely meaning, but positive (or negative) affects in their users. Despite this tendency to write for designers, there are some practitioners who straddle literary criticism and HCI. Brenda Laurel, most notably, argues for thinking about our media devices through Aristotle's poetics as a way of understanding the larger parallels not merely in how semiotic content is made, but in how

users/readers are engaged.[6] Laurel asks what literature has to say to HCI (quite a lot, as it happens), but in doing so, she implies that the reverse is also true. HCI has quite a lot to say to literature.

Human Computer Interface studies returns us to the interface as the site for these interactions and for my intervention. Reading the digital book is an interdisciplinary endeavor and so I draw together these multiple different fields in order to bring each in conversation with the other. The interface, as the physical place of this meeting, might be better thought of as the site of interaction. Throughout this investigation of mine, I return to the question of interactivity as not so much a defining feature of the digital book, but as one of its most productive features. Interactivity—the object's capacity to alter its output in response to deliberate input from the reader—has interesting implications for how books create experiences and influence their readers. The ease with which digital books lend themselves to become interactive stands in stark contrast to the resistance we have to the paradigmatic printed book as interactive rather than a transportive, linear novel that sweeps the reader up and inflicts affect upon her. I aim to show that, while the digital book is not at all suited to the linear novel, it has its own affective abilities that are rooted in its interactivity and, moreover, in its paper antecedents that developed an enitrely different codex than the

[6] Like Laurel, I dislike the term "user" to refer to the person who uses a multi-purpose media device (8). As she observes, reader, viewer, and player are all more useful terms within the context of the device that is performing a specific function, rather than user, which both lacks specificity in terms of what the device does and suggests that the link between the person and the object only goes one way. To use the device suggests that it does not use me in turn. She prefers the term "interactor," which has the benefit of implying a more equal power relationship between the person and the computer (although it does sometimes fail to convey the powerlessness felt in the face of the machine). I find Laurel's choice clunky and difficult to read, especially given that user is more or less the term of art by now. And so I use user, albeit grudgingly.

novel.

Each of the four chapters of this dissertation illuminates a different aspect of the digital book's relationship with evoking emotions and the ways in which its interface and mediation can either enhance or hinder the book's affective capacities. Though the chapters are grouped together by topic—the first two and last two each discuss the same collection of texts—I would ask my readers to also recognize the chiastic structure wherein the first and final chapters are focused on the role of the codex and its influence, while the middle two emphasize the digital book's break from the codex and the ways in which it must operate differently. My first two chapters address a canonical Jewish text, the Babylonian Talmud, that is closely tied to its form and that is being remediated into multiple kinds of digital editions. My second two chapters focus on a canonical secular text, *Frankenstein*, that also engendered multiple versions of itself into the digital realm. For this project, I specifically chose to work with books that began life on paper and made the jump to digital in order to take up this question of how codex and digital book can manipulate the same text or narrative in different ways. Taken as a whole, these examples showcase the distinct concerns that go into developing different kinds of digital books and the multiple ways to build emotions into the interface that makes a book worth reading.

In the first chapter, I look at the pre-digital book. I discuss the codices that exemplify the integration between form, platform, and content and I look at how non-linear, reader-chosen reading can create a printed book that shares some of the interactive, affective characteristics of what the digital book can be. Inspired by the idea of media archeology, I perform my own archeology of the Babylonian Talmud as a case study in the complex factors that can be excavated from a text with a long lifespan and multiple different layouts.

The history of the Talmud, from its earliest incarnation as an orally transmitted legal code to its definitive printed version in the 19th century, constitutes a pre-digital examination of the powers of form and interface. I trace the effect of medium on the book and examine the particular effects that technologies of print and reproduction have not only on the form of the Talmud, but on the relationship between the formal organization of the page and the reader's devotional stance towards the text. The layout of the printed page of the Talmud—the *daf*—invites a specific, though by no means singular, kind of affective experience where the reader invests in the interface and experiences delight in the process of solving the page's puzzles, what Jaak Panksepp calls SEEKing. The Talmud is a complex network of texts and metatexts and the process of reading it is necessarily interactive as the reader parses the page's directions and chooses which of the many rabbit holes to wander down in search of understanding. This delight is a critical part of the Talmudic experience and the development of the page from written on parchment to printed to stereotyped was both influenced by it and influenced it in turn. The Talmudic page reminds us that the interface has always played a role in our feeling for our texts and that, especially when looking past the novel, there is a long history of affective interfaces in reading that not only influence the development of digital interface, but change in turn when they are compared to digital books.

In the second chapter, I look at how the digital book must grow out of and break with its paper precursors. I examine those interface elements of the paper version that inform, inspire, and constrain the digital versions of the text. I move from the past to the future and use the strengths and weaknesses of individual digital editions to explore this process of remediation and the way that different media require different approaches to engender emotional responses and allow the book to work. In this shift from the history of the printed

Talmud to its future as a digital book, the intricate mesh of affect and technology means that the Talmudic page has become not merely an essential feature of the Talmud, but sacred in its own right. Publishers working to digitize the Talmud must choose between including the layout—preserving the sacred form—or constructing a new layout better suited to reproducing the experience of studying the Talmud as a digital book—preserving the sacred affect. I look at two diametrically opposed examples of the digital Talmud, one which favors form and one which favors affect. I use the former to explicate digital interfaces and understand both what is so seductive about preserving the simulacrum of print and the kinds of obstacles such preservation inevitably throws in the path of the book. I then turn to the more innovative interfaces and discuss kinds of emotions they can generate in their readers. In the process of this research, I engage in the kind of playful exploration offered by such digital editions, taking the data and creating my own interfaces that provide the SEEKing experience so crucial to the study of Talmud. I find that interfaces that work to preserve the delight in discovery and invite real and meaningful reader interaction—though they range far from the appearance of the original text and do have their downsides, especially for students who learned to study Talmud using print—are better at being digital editions of the books. In reinventing the form of the Talmud, the digital editions carry on its legacy of innovative learning.

In my third chapter, I expand on the digital book's break with its predecessors. I take up the question of fictional narratives and how the emotions and feelings we associate with fictional experiences change when the book in question is digital. Digital narratives are rife with multiple kinds of affect and, in this chapter, I take on the problem of empathy and narrative raised earlier in this introduction. I examine multiple versions of *Frankenstein* to

discuss how their forms and interfaces intersect with their narratives. I use Shelley's original novel to discuss how the text uses language and the frame narrative to control the reader's emotional experience: like the Talmud, *Frankenstein* is designed to evoke affect through how it mediates its content. I contend that, unlike the transportive experience of reading a printed novel, the digital book relies on the reader's interactive agency to create alternative forms of emotional engagement. Unlike the transportive quality of the novel, which relies on the reader's powerlessness in the face of the narrative, the successful versions of the fictional digital book work by returning agency to the reader through interactivity. I look at hypertext versions of the Frankenstein narrative and examine how their formal design, blocks of code, and interface invite emotional reactions from the reader. I explain both how they are successful and why, when they fail to evoke responses, failure occurs. Drawing on critical discourse about hypertext literature and interactive digital games, I explore how the choices inherent in the interactive medium are integral to the success of the digital book as an affective book.

In my final chapter, I discuss the relationship between the digital book and the process of digitization. After spending three chapters on the importance of recognizing the digital and the interactive as their own medium and genre respectively, I turn to the problem of presenting non-digital information in digital form. Given the importance of digitization and creating accessible, digital collections, I explore how digitized books still benefit from being presented in a way that is attuned to the capabilities of the interface. I look at how the interface elements and design principles that influenced fictional and devotional experiences also apply to digital books meant to educate or inform. I examine how digital books handle digitized and archival material and how they present that material in a way that is not simply

informative, but engaging. I take this opportunity to perform a close read of the New York Public Library's *Frankenstein: The Afterlife of Shelley's Circle* digital book as an early book on the iPad that illuminates both what such books can do and where some of the pitfalls might lie. *Frankenstein: The Afterlife of Shelley's Circle* is innovative in how it takes advantage of the platform, but lacks a coherent affective design that structures and guides the reader's experience. I use *Frankenstein: The Afterlife of Shelley's Circle* as a yardstick against which I measure other digital works that present the archival material of the Shelleys' lives. These books pull together the themes of the previous chapters; drawing on multiple media streams, they provide examples of digitized texts, narratives, canonical materials that must be preserved as closely as possible, and disparate interfaces to help the reader navigate effectively. In my reading, I both showcase how these texts function and provide my readers with an illustrative example of how a reader experiences these texts. Though personal, my readings throughout this project, but most especially in this final chapter, perform my argument in a way that invites my readers to follow along with me, but more importantly, provides a guide how to read experientially. Through the work I have done, I show how both readers and creators can approach their digital books with an awareness of its emotional tenor and I invite them to imagine a future rife with possibility of what the new medium of the digital book can be.

## Chapter 1: Affective Printing

The Talmud's complex relationship with its interface dates back to its purported inception, some time around 200 C.E. While the historical details are blurry, the text called "the Oral Law" was redacted in direct contravention of the Talmudic declaration that "that which is recited orally, one may not teach from a written text" (Babylonian Talmud Gittin: 60b, all translations mine unless otherwise noted). Thus begins the Talmud's history with the written word and provides the first example of how form, accessibility and affect consistently work together to shape the Talmud and its readership. The text that is the Talmud developed over eighteen centuries and, as the technologies of the written word evolved, so did the formal aesthetics of the Talmudic page. The evolution of the Talmudic page, though driven by the possibilities inherent in new technologies, responded as well to the needs of the community and the desires for a particular kind of polyvocal and sacred text. In this chapter, I turn to the canonical page of the Talmud as an example of how the design and formal attributes of the book, specifically the page, have always been integral to the text's ability to make meaning out of its content and become meaningful to its readers. The Talmud is an ideal text for this work; its earliest printed incarnations embody the aesthetics of the webpage, inviting the inevitable comparisons to digital interfaces.

To make this comparison, this chapter draws on the ethos of media archeology, reading the Talmudic page as an interface while reading the idea of the interface into the development of the Talmud. Media archeology emphasizes "a hermeneutic reading of the 'new' against the grain of the past, rather than telling of the histories of technologies from past to present" (Parikka 3). The Talmud disrupts a reading of the interface as a wholly digital technology, asking instead that we examine the page using the tools with which we study digital interfaces. This shift, however, can suggest a reading of the page that is subject

either to positioning the Talmud as an early hypertext that develops into the interactive interface or to positioning the interface as no more than a very responsive page. The turn to media archeology is a reminder that both of these narratives are necessarily reductive and that uncovering—performing the archeology of—the developments that shaped the Talmud attends to a narrative that is historically grounded, contingent and sometimes even random. An archeology of the Talmud requires resisting reading the interface purely as an artifact of new media, but also requires reading the Talmud with and against its own historical development. My analysis of the Talmudic page is predicated on this understanding that digital objects as we know them have specific antecedents and developed for reasons that may depend on, but are often distinct from, merely technological affordances.

To that end, I draw on contemporary theories in affective psychology and human computer interaction studies to explain how the layout evokes specific emotional responses and why those responses are so valuable to Talmud study. By introducing affect alongside technology, I can read the Talmudic interface as an interface in dialogue with its readers, religion and historical circumstances. I take three distinct moments in the historical narrative of the Oral Law—its inception, its printing, and its standardization in the 2nd, 16th, and 19th centuries respectively—and read how the interface responds to human emotions and needs in a way that shapes the texts. My goal is to elucidate the complex ways that human desires, ideologies, and affordances shape the interface and are shaped by them. Though older by several centuries than the other interfaces in this dissertation, the Talmudic page mediates the reader's experience of reading it, while the reader (or, more accurately, the community of readers) remediates the Talmud in turn as the protocols for reading change. In reading the Talmud as an interface, I begin my work on the digital book not by complicating the idea of

the digital, but by questioning the distinctions drawn between print and electronic texts. I use the Talmud as a case study for reading the interface of the book and, in doing so, set the stage for the rest of my dissertation where I turn to the present and future of the book and examine how the features of the platform and interface that already exist on the page are reinscribed into the digital book.

**I. Remediation and Revelation**

This history of the Talmud, however, must begin with a question I left unanswered in the introduction to this chapter. If written transmission of the Oral Law is forbidden, how did the Talmud become a text in the first place? The 12th century Jewish scholar Maimonides explains that, though the prohibition on written transmission was never formally lifted, Rabbi Judah HaNasi[7] took it upon himself to redact the Oral Law lest it be lost as the Roman Empire consolidated its hold over Palestine.[8] Maimonides' portrait of Judah HaNasi is of a man caught in a bind. He saw that "the students grew fewer and left, while new troubles appeared and grew more numerous" (Mishneh Torah 1:1). The old system, wherein teachers

[7] HaNasi means "The Prince" in Hebrew and, where Rabbi Judah is concerned, it is both a term of respect and an acknowledgement that he traces his lineage back to the Davidic line of kings.

[8] In the introduction to his seminal work on Jewish Law, the Mishneh Torah, Maimonides sets out the path taken by the Oral Law from Mount Sinai, when it was first taught to Moses, down to his own day. In that section, he explains that Rabbi Judah HaNasi (whom he calls "Our Saintly Rabbi") created the first part of the Talmud by collecting the handwritten scraps and notes from every previous generation and redacting them.
Historically speaking, any discussion of authorship when it comes to the Oral Law is fruitless, as Martin Jaffee observes in *The Cambridge Companion to the Talmud and Rabbinic Literature*. The text was redacted in such a way to give credit to the individual voices of the teachers rather than the compilers. Having said that, Judah HaNasi is the accepted name among traditional circles and, even now, remains a useful figurehead for the redactors whose names we cannot reconstruct.

used notes to aid in recall, but transmitted the law from their mouths to their students' ears, no longer seemed tenable. The preservation of Rabbinic law and culture was at stake and Judah HaNasi could save it at a cost. In creating the Mishnah, the first of the two texts that comprise the Talmud, Judah HaNasi put the need to preserve the tradition above the importance of keeping that transmission solely within the realm of the oral.

This transformation of the text from embodied breath to scribal letter was incomplete, as the need for the Gemara—the second text of the Talmud that serves as an explanatory document—suggests. The Mishnah is a concise summary of the major legal opinions of that era, one that leaves out both the logic behind each ruling and, in many cases, the opinion that Jewish law follows. The Gemara's function, in part, is to explicate the Mishnah and provide an interpretive rubric that exposes the underlying Mishnaic logic. While the words were technically written down, the text was nearly unreadable without the presence of a scholar who already knew what it meant. In that respect, the Mishnah is more like a series of lecture notes than a written work. Elizabeth Shanks, in her article on "The Orality of Rabbinic Writing" suggests that the ban on writing the Oral Law that I quoted from Tractate Gittin refers to solely written transmission of the law. As Socrates insists in Plato's Phaedrus, one cannot argue with or truly learn from a book, only from another person. Shanks' reading of Talmudic orality follows the same path; she quotes noted Talmudist Saul Lieberman's argument that the emphasis on orality meant that the written text was not binding as law and one was only obligated to follow those opinions which were spoken by a Rabbi rather than those one reads on a page (51). This is reminiscent of Walter Ong's explanation of the spoken word in oral cultures where language is a call to action and has power in its own right (31). According to Shanks and Lieberman, when Judah HaNasi redacted the Mishnah, his

authority as leader of the Jewish courts and as "prince" extended to the text. This sanctioned remediation from oral transmission to textual instantiation gave the text pedagogical authority that it heretofore lacked.

The material text embodied with the authority of the living scholar provides a neat solution to the problem of tradition and transmission. The underlying concerns that had kept the Oral Law oral, however, remain unresolved. Those concerns, while not explicitly addressed in the Maimonidean narrative, can be pieced together from other locations in the Talmud. In Tractate Chagigah 12b, the text sets out the rules for explicating dangerous passages: those relating to sexual immorality, the creation narrative, and eschatology. According to the rabbis, one may only teach these in small groups and in the case of eschatology, only one on one, lest the students misinterpret the teacher's words or simply stop paying attention.[9] Oral transmission is crucial precisely because it requires the interpersonal encounter between student and teacher. In her analysis of orality and the Oral Law, Shanks notes that "rabbinic practices of transmission are understood to be a way of imitating and perhaps even reenacting God's initial revelatory act" (47). In this reading, oral transmission recreates the revelation at Sinai, which Jewish tradition dictates is the only instance when God spoke to his people without the aid of an intermediary. I would argue that we teach the oral law in the medium of the voice precisely to recapture, at least in part, that unmediated experience of the divine and to perpetuate the tradition not only as knowledge, but also as a deeply affecting experience[10].

[9] In certain respects, pedagogy has remained the same for 1500 years. One wonders if it is even possible to teach a MOOC on the creation narrative.

[10] Rabbi Dr. Shai Held, in his lectures on "Wonder, Prophecy, and Creativity," jokes that the difference between academia and rabbinic exegesis is that academics claim that a small

Of course, this idea of the unmediated experience of the divine is undercut by the actual descriptions of that experience in both Scripture and Midrash. The Midrash, which is categorized, albeit simplistically, as the mostly non-halachic[11] portion of rabbinic literature that often focuses on Biblical interpretation and narrative, explains that the experience of God's voice at Sinai was so intense that it transcended the human capacity to sense and "the souls of the people left their bodies" (BT Shabbat 88b). God revived them and they begged Moses to stand as their intermediary between them and the divine. Moses agreed; the final eight commandments of the Decalogue were conveyed from God to Moses and thence to the rest of the assembly.[12] This narrative sets the stage for what I read as the negotiation between

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rereading of a text is, in fact, a radical redefinition, while rabbis claim that a radical redefinition is just a small rereading of a text. Practically speaking, this means that writing rabbinic exegesis for an academic audience requires the writer to fight her natural impulse to present her readings as a *fait accompli* that was always present as a traditional reading of the text. I have done my best here to indicate where tradition ends and my own innovations begin, but I would advise my readers to assume that any un-cited portions of this section constitute my own exegesis that is operating within the framework of Talmudic readings that regularly uproot mountains of text.

[11] Halacha is the Hebrew term that encompasses all the legal rulings in Judaism. Translated directly, it means "path". In this dissertation, it will most often be used to designate literature as "halachic" which is to say part of the socio-juridical system that traditionally dictated Jewish life, and "non-halachic", literature that does not provide legal rulings.

[12] What follows is a (hopefully) short digression on the nature of Biblical Midrash from the Rabbinic perspective.

Midrashic narratives that reinterpret Bible stories are almost always introduced to explain some kind of discrepancy in the text. Here, the Midrash is positing a reason for why the text of the Decalogue in Exodus begins with the statement "God spoke all these words, saying" (New JPS Translation) and ends with the nation crying "let not God speak to us, lest we die" (ibid.). The Midrash is filling in the narrative in a way that gives context to the fears expressed.

Whether the writers of the Midrash believed that their stories reflected actual events or not is an ongoing debate in traditional circles. Scholars as early and as famous as Maimonides claimed that anyone who took Midrash literally was a fool, but his is one voice among many when it comes to the nature of Midrash and truth.

the ideal yet impossible immediacy of pure transmission and the contingent yet necessary mediation that allows for actual transmission. This problem is familiar to scholars of New Media from Bolter and Grusin's *Remediation*, where they discuss the tension between immediacy and hypermediacy, a medium's capacity to either efface itself and pretend to pure communication or to draw attention to its own mediating nature as a way of bolstering its communicative power (5-6). For Bolter and Grusin, however, immediacy is always the pretense of non-mediated encounters. There is no room, in *Remediation*, for the absolute immediacy of the divine voice. In all fairness, Jewish tradition leaves little room for it anywhere else; Moses is the only prophet to hear God's voice directly and even he is never allowed to look upon God's face, but may only see his back (Exodus 32:31-33). The human experience of the divine is mediated.

In the Midrash, God solves this problem by speaking first to the entire assembly (and killing and reviving them in the process) in order to establish the authority of the voice that can then be bestowed upon the mediator, Moses. As I see it, the memory of past immediacy and the overwhelming power of the voice to affect its listeners gives power to the mediated voice. The Midrash emphasizes that it was pure terror, one of the most basic of emotions according to every reckoning from Darwin onward, that caused the nation to perish. Unmediated experience is untenable because it creates affective overload, a failure of communication that comes because the affective tenor overwhelms any capacity to process the content or even the affect itself. But, having had that one failed yet perfect unmediated encounter, all subsequent encounters become possible as imperfect (read: mediated) copies of

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For the purposes of my larger project, the different opinions of Midrashic veracity are less important than the role the narratives play as allegories and as works of literature that reflect the concerns, ideologies and experiences of the people they represent.

the original. To return to Bolter and Grusin, new media relies on hypermediation to recreate immediacy (11). The new medium promises authenticity of experience not by providing the experience itself, but by hypermediating it, a seeming paradox explained through the medium's ability to first draw attention to its newness and then efface itself as it fades into the natural state of the mediated world. Not for the last time, I believe the Oral Law relies on the same logic as new media. Hypermediation—the creation of the Written and Oral Law—is not meant to supplant the divine voice, but to make up for it to the degree that such a thing is possible. The word of God is remediated onto parchment while the speech of God moves to the mouth of the teacher. In tandem, they provide the authenticity of experience that hearkens back to, though it cannot mimic, the revelation at Sinai. According to my reading, the written and oral traditions consist of an impossible ideal that is always mitigated by the contingency of transmission. The problem of the Law is the problem of remediation: finding the correct balance between the immediacy that cannot be had and the hypermediacy that cannot match it.

There is another name for the human response to the mediation of the terrible. In his essay on the subject, Edmund Burke explains:

> Whatever is fitted in any sort to excite the ideas of pain and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the sublime…When danger or pain press too nearly, they are incapable of giving any delight, and are simply terrible; but at certain distances, and with certain modifications, they may be, and they are, delightful, as we every day experience. (Sect. VII).

The terrible becomes the sublime with the addition of distance; the mountain on the horizon,

the crash of thunder and the flicker of lightning miles away make for terrifying experiences up close, but aesthetic experiences when one is removed from them. The mediation of the divine word is not simply a failure of communication and the acceptance of the imperfect in the place of divinity. It is an opportunity for the nation to properly experience God as sublime.

The experience of the sublime is, in the context of God and Jewish religion, the experience of the sacred. *Qadosh*, the Hebrew word translated either as sacred or holy, most closely means "consecrated" as it refers to that which has been set apart for religious purposes. That which is *qadosh* is that which has been consecrated and made sacred through the introduction of religious distance. The sacred, like the sublime, relies on the introduction of distance into a relationship. Distance transforms the affective relationship; the betrothal ceremony, called *Qiddushin* from the same root Q-D-SH, begins with the statement "Behold, you are consecrated (*mequdeshet)* to me." Not coincidentally, rabbinic literature often compares the revelation at Sinai to a wedding between God and his people (e.g. BT Shabbat 88b). The remediation at Sinai introduced a sacred text made up of the word of God consecrated by the distance introduced through remediation.

The sacred voice, however, provides a different problem for my exegesis. If the Torah, the Written Law, is God's word made sublime through the introduction of parchment and ink as mediators, then the Oral Law seems to be God's voice made sublime through the mouth of man. Yet replacing God's voice with man's makes the tradition mutable. (I use masculine pronouns because men have traditionally been the voices that spoke for God in Judaism.) It is impossible to put the law into one man's mouth and assume a singular, continuous tradition; the best one can do is put it in the mouths of many men, none of whom

will truly agree on everything. Doing so deprives the law of its singular, divine authority; it is no longer "in the heavens," but is given to humanity to interpret as best they can.[13] To speak in God's voice is to have authority over tradition. But while the voice of God is a voice, the voices of the Oral Law are multiple, often contradictory and constantly in need of renegotiation. To borrow a term once again from the realm of newer media, this is a feature, not a bug.

Religion cannot survive entirely on distance. The sublime—the ultimate passion of distance—is not enough. If revelation is a marriage, then there must be a consecration *to* and not simply a separation from. A sublime marriage, is (except under certain circumstances) not characterized by distance. To be consecrated to another person implies that sacredness is not simply about distance, but about closeness as well. The Oral Law, given from God's mouth, moves into the mouths of teachers. Interpersonal relationships in the classroom ensure that God's words are beloved and, in doing so, the feeling of sublimity shifts away from the Oral Law. The twenty-four books of the Hebrew Bible are known as the Written Law and they provide the sense of awe at a distance, while the Oral Law provides the experiences of intersubjective closeness. The liturgical chanting of the Torah becomes ever more ritualized as the act of reading becomes the Torah service and the Torah is held distant and sublime through ritual. In contrast, the Oral Law expands and expounds upon itself as new teachers

[13] This phrase "[The Torah] is not in the heavens" comes from Deuteronomy. The subsequent interpretation—that it is given to humanity to interpret as best they can—originates in a Talmudic argument where it is deployed as a prooftext against the voice of God. This section, found in Tractate Bava Metzia 59b, is one of the most famous and delightful in the Talmud. The Rabbis are engaged in an argument about the legal status of an oven and the conversation takes an interesting turn when Rabbi Eliezer dissents and turns first to nature and then to God to prove his case. The voice of God backs his interpretation, but the other Rabbis respond that "the law is not in the heavens". The law, in this case, follows the majority and not God.

arise and new ideas become incorporated into a vast network of sometimes contradictory ideas. At the same time, the presence of the teacher provides "an embodied realization of the tradition through his exemplary action" (Fonrobert 79). The teacher makes the law accessible to the student, both through the closeness of the educational relationship and through embodying the law itself to the student. Combined, they engender the experience of God's sacred voice commanding God's people.

To return to Ong in *Orality and Literacy*, he explains that "the spoken word proceeds from the human interior and manifests human beings to one another as conscious interiors, as persons, the spoken word forms human beings into close-knit groups" (72). The orator and audience are drawn together in a shared collective experience that recreates God's voice. As Ong notes, God always speaks to human beings, directing Moses and God's prophets to turn the words into writing. God's words are preserved in the Bible, held unchanging with the technology of writing, while God's voice through which the law remains a living thing lives in the mouths of its teachers. Understanding this relationship between speech and writing explains the emphasis on the oral in the Oral Law. Writing down the Oral Law deprives it of its polyvocal, social character and makes it too similar to God's words as instantiated in the Written Law and deprives it of its relational character. How, then, can one create a written Oral Law? Attending only on the specificity of moving from the oral to the written, the problem of preservation seems insurmountable. If, however, we read this shift as a reformulation of the original problem of revelation and remediation for another era, the parallels become clear. Once again, at stake is the question of whether one can sacrifice a preferred form of transmission in order to ensure that transmission itself is possible.

Judah HaNasi's conundrum is part of a larger historical question, and his move from

oral transmission to the first written code is based on the same logic as the Sinaitic choice, even down to the affective impulse. At the heart of Judah HaNasi's choice is the fear of death—of a nation and of a culture. Motivated by this fear, he takes the next step and remediates the Oral Law into a form with less immediacy, but with a greater chance of survival. Steps are taken to preserve the authenticity of the experience; as noted earlier, the Mishnah itself is nearly incomprehensible without a teacher who already understands it, which retains the intersubjective encounter at the heart of the educational process. Some three hundred years later, the addition of the Gemara—a series of comments, clarifications, explanations, arguments, and the occasional digression loosely tied to the contents of the Mishnah—is the next stage of the Oral Law. The Mishnah and the Gemara are known collectively as the Talmud. As before, the logic of remediation remains critical. The Gemara is written like a series of conversations and retains the structure of informal discussion where a topic can shift in a heartbeat as one of the interlocutors is reminded of another story that has nothing to do with the topic at hand save that it relates to the same rabbinic figures as the previous narrative. The text, rather than being the inspiration for discussion, is the discussion itself, and the experience of reading the Gemara is the experience of listening to and participating in an ongoing dialogue. The text evokes the sense of being with another person, the encounter at the heart of learning.

The obvious caveat remains: writing and speech are not fungible forms of communication, no matter how closely writing mimics the patterns of dialogue. And while there is no way to create a lossless compression of speech into text (so to speak), the context of this shift in media remains critical if we are to understand why it seemed possible to the redactors. The Talmud was redacted during an era of religious reformation. Thus, it is

generally accepted that Mishnah and Gemara were developed not only in response to a growing diasporic community, but also to a cultural shift from religion centered around Temple service to one founded upon study and prayer. In his book, *The Talmud: A Biography,* Harry Freedman credits the first century sage Rabbi Akiva with creating a new kind of religion out of the ashes of the destroyed Temple (26). Akiva and the other scholars of the Mishnaic period, known as the *Tanna'im*, replaced ritual action with ritual speaking: the temple service became "the service of the heart"[14] and studying the laws of sacrifice and purity replaced performing those acts that could no longer be performed absent the Temple itself. This capacity to substitute the sign for the signified is, as Susan Handelman explains in *The Slayers of Moses,* part of the critical break between Greek and Hebrew philosophy in their respective attitudes towards the concept of the word. "[T]he Greek term for word, onoma, is synonymous with name. By contrast, its Hebrew counterpart—davar—means not only word but also thing. It was precisely this original unity of word and thing, speech and thought, discourse and truth that the Greek Enlightenment disrupted" (4). This Hellenic disruption, I would argue, does not extend into Rabbinic texts. The word and the thing remain locked in a complicated dance where the thing defines the meaning of the word, but the text can dictate the shape of the world. Prayer is not the same as sacrifice and yet one who prays has fulfilled his obligations regarding the sacrificial service. The translation, then, between the medium of speech and the medium of writing is less radical than these other

[14] In Hebrew, the Temple service is known as the עבודה (*Avodah)* which means either work or service, depending on context. The Sages explain that the commandment to "serve God with all your heart" refers to "the service of the heart", i.e. prayer (BT Taanit 2a). In doing so, they deliberately connect the rituals of the Temple and those of prayer, using the regularity and times of the former to dictate the performances of the latter. The second עבודה takes the place of the first.

transformations that happened in Rabbinic Judaism in response to exile and destruction. Both rely on an understanding of the role of speech in acting and enacting. For the *Tanna'im*, the evolving language of ritualized prayer with its careful choreography, and the growing role of the study house in transmitting tradition and reifying it is made possible by an approach to the world that sees the word and the thing as two sides of the same coin. The creation narrative begins with God speaking the world into existence. "God said, 'Let there be light.' And there was light" (Genesis 1:3). By speaking the Talmudic arguments, the student brings them into being.

The history of the Talmud is a constant rewriting of these original impulses to provide the best possible format, given both the constraints of the medium and the particular situation of a given generation. The Talmud is both a book of laws and a script; it is meant to be read, but it is also meant to be read aloud and interpreted. The act of studying it is a ritual act codified in Tractate Shabbat: the study of Torah (Written and Oral) is equivalent to the performance of the commandments. The form of the text is tied to the reader's ability to perform the text, both in the technical sense of making meaning and in the experiential sense of re-enacting the arguments that are the basis for the Talmud. When we turn to the formal design of the Talmud and examine its shift from manuscript to printed codex and then to ubiquitous compendium, we are still working within the framework of the early concerns that have become the Talmudic creation narrative. What are the tools with which a text controls its orality and provides a sense of living conversations? The structure of the text itself, its design on the page and the relationship between that design and the student all provide answers, in their own way, to this question.

## II. SEEKING Affect in Printed Pages: How the Emotional Page Came to Be

In 1484, Joshua Solomon Soncino printed the first tractate of the Talmud. Soncino's publication was notable less for being first than for the standard it set for what a tractate of Talmud was meant to contain. The manuscript versions were unchanged in format since the Talmud was redacted in its entirety in the 7th century. During the next eight centuries, any number of ancillary learning aids developed that continued the work started by Judah HaNasi of making the Oral Law more accessible through the written medium. The 11th century scholar Rabbi Shlomo Yitzchaki, or Rashi as he is universally known, produced the most famous of these exegeses, filling in the phrases of the Talmud to transform it from mnemonic-style notes to readable sentences. Haym Soloveitchik, in his article "The Printed Page of the Talmud: the Commentaries and Their Authors," observes that "Rashi democratized the Talmud. Prior to his work, the only way to master a tractate was to travel to a Talmudic academy and study at the feet of a master...With the appearance of Rashi's work, anyone, regardless of means, could by dint of talent and effort master any Talmudic topic" (38). When Soloveitchik refers to Rashi "democratizing" the Talmud, he uses the term in the sense that the Internet "democratized" information; the information is still limited to those who can afford the necessary interface—a copy of the commentary or a computer and connection respectively—but knowledge was no longer restricted. So long as one had access to the additional manuscript produced by Rashi, one could study the Talmud on one's own. Rashi's work was often distributed as pamphlets rather than as codices to make the necessary tools more affordable, but the distinction remained between those who could theoretically study the Talmud on their own and those who could in practice. With the publication of the Soncino edition, Rashi's commentary was typeset alongside the Talmudic passages to which

it corresponded.

Though the development of the Talmudic page was made possible by the invention of print and the "revolution," to borrow Elizabeth Eisenstein's term, that the press set off, there is little about the printing of the Talmud that sets it apart from the other texts then printed. Even the idea of adding commentaries to the page antedates the Talmud with the printing of both Jewish and Christian Bibles. Much of what can be said about the effects of printing the Talmud—its increased ability to propagate, its increased affordability, its increased availability—is no different than what can and has been said by authors such as Eisenstein, Roger Chartier, Peter Stallybrass and other historians of the book in their analyses of the manifold ways that the development of the codex and the printing press respectively shaped knowledge production. One could examine the Talmud within the larger class of Jewish publications,[15] but the Talmud is not measurably distinct in terms of the technologies it employed. The printing of the Talmud was critical in altering the relationship between the reader and the text, not through the affordances of printing, but through the ways in which those affordances defined the reader's stance towards the text.

[15] See *The Hebrew Book in Early Modern Italy* for a description of the effects of printing when it was still localized to Italy and Zeev Gries' *The Book in the Jewish World: 1700 to 1900* for an exploration of print culture in Eastern Europe once the main presses had moved from Italy to locations where the nearby Christians were, among other things, less interested in burning the Talmud.

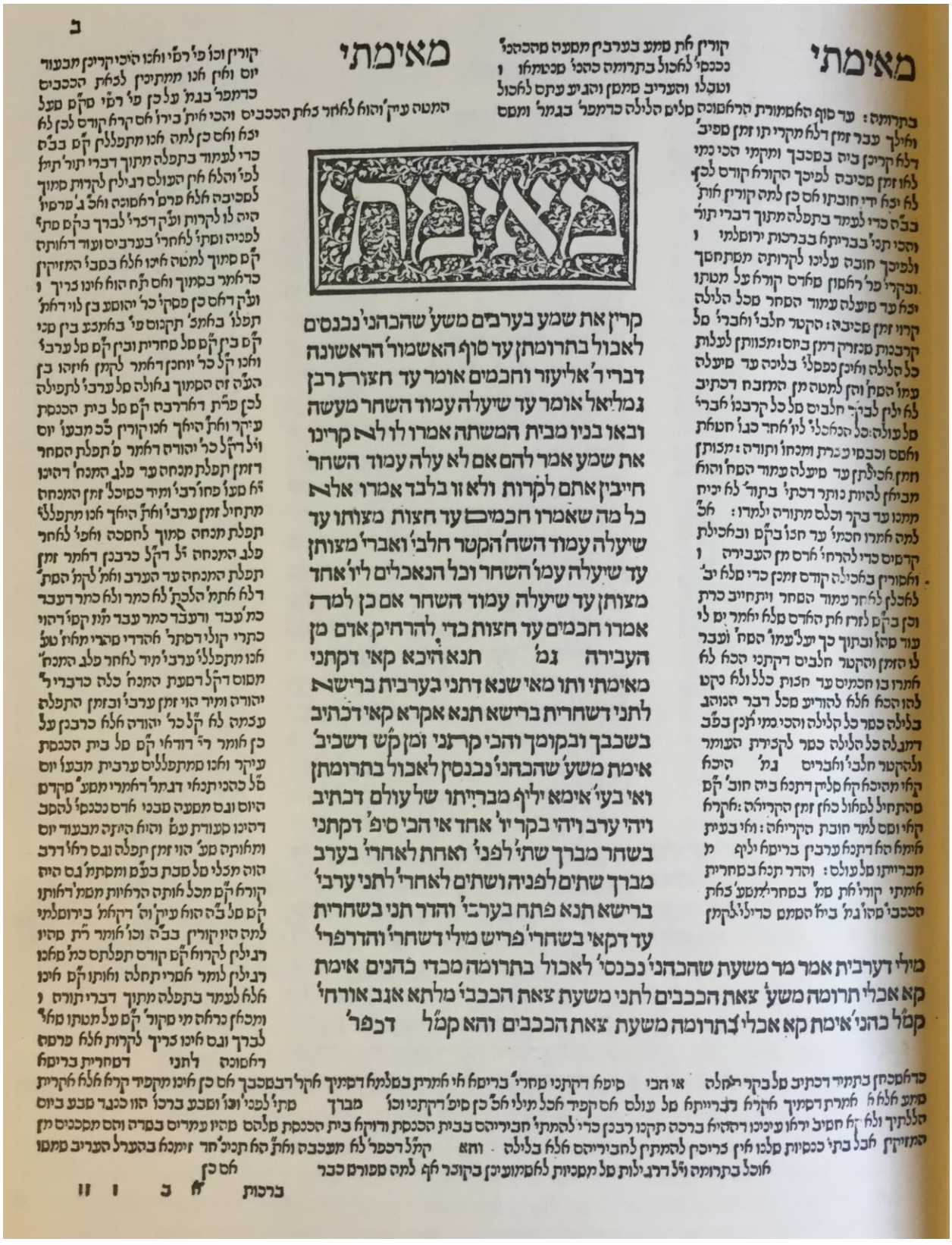


Figure 1. Reproduction of the Original Bomberg Edition of the Talmud in A. Rosenthal's *The Talmud Editions of D. Bomberg*

In the following section, I describe the ideal experience of reading a page of the Talmud. This is to say, I assume that the interface works consistently and that there is no failure of communication between the page and its reader. The perfectly functioning interface is something of a convenient fiction, an unachievable pinnacle of design that bears some resemblance to God's perfect act of speech insofar as it cannot exist. Despite the impossibility of an interface that works as designed for all readers in all contexts, it is worth beginning my evaluation by reading the Talmud as if it works for all readers. The ways in which the interface fails to speak to all and adapts to the needs of a given group only makes sense when considered against the interface as it is meant to function. So while the final section of this chapter will address the evolution of the interface in response to its actual use within the culture of Talmud study, I begin by focusing on the page in dialogue with a reader who has the necessary knowledge and resources to access it.

The formal arrangement of the page solidified the conversational sense of the Oral Law by locating the orality in the structure of the page itself. The polyvocality of the Talmud was type-set in stone with a page that looked like an ongoing dialogue between the words of the Talmud and the explanations of the commentaries. When Haym Soloveitchick discusses the different texts that make up the printed page, he explains how each commentary fundamentally alters the Talmudic text and the way we read it. His history of the page dovetails nicely with my reading of the Talmud as an interface in flux that tries to preserve the best of both written and oral forms. With the publication of the Soncino edition of the Talmud, everything the student needed to understand the Talmud could now be found in the pages themselves. With the subsequent release of the first full set of the Talmud by Daniel Bomberg in early 16$^{th}$ century Venice, the Talmud no longer needed to be taught by a teacher,

but became a singular codex that was also a teacher. The interface had succeeded in recreating the multiplicity of interpretations that was so crucial to the Oral Law; the book became capable of expressing its own polyvocality.

This image of an expressive book is less impressive when one remembers that all books should, at least in theory, be capable of transmitting their own content. What makes the Talmud interesting is the extent to which it uses format and layout to create interconnected texts whose meanings are discovered or created by the reader's movement around the page. Rather than intruding on the text itself, interpretive measures gather around the central column of Talmudic text and organize based on the likelihood that they will be needed. The different kinds of commentaries—not merely exegeses like Rashi's, but indices to other rabbinic texts, cross-references, errata, "links" to biblical texts—that populate the sides of the page evoke the multimedia arrangement of an extraordinarily complicated web page. The printed page of the Talmud possesses a certain bookishness, to borrow Jessica Pressman's term for "novels [that] exploit the power of the print page in ways that draw attention to the book as a multimedia format, one informed by and connected to digital technologies" (465). Though the Talmud is not a novel and antedates digital technology by some five hundred years, Pressman's definition of bookishness invites an archeology of bookishness that examines earlier technological strata of multimedia and ideologies of the digital.

For Pressman, the bookishness of the book is tied to its effect on the reader. The design of a bookish book uses the reader's sense of pattern recognition and analogy to link the printed page to digital technology. The reader rereads the page as something beyond a simple word container, but as an amalgam of several media that can also contain images, aural data and, in the case of Steven Hall's *Raw Shark Texts*, which Pressman uses as an

example, a flip-book with an animated shark that advances upon the reader. Bookish books demand attention to the nature of the page in order to read them. The Talmud is bookish: it draws its readers' attention to the edges of the page, to the fusion of pamphlet, codex and marginalia that moved from scribal copy into print. And while I will address the makeup of the page and how those aforementioned elements function together to create both a cohesive whole and a sense of polyvocal conversation, I want to first introduce the following proposition: the careful attention required to read the Talmud page is affective.

In Jaak Panksepp's *The Archeology of the Mind*, he lists seven basic affects—basic because he has identified them in both humans and animals: SEEKING, RAGE, FEAR, LUST, CARE, PANIC, and PLAY.[16] Panksepp's work, which focuses primarily on rats, is evocative of Darwin's in *The Expression of the Emotions in Man and Animals* when the latter looks specifically at expressivity to argue for the commonality of emotions (Darwin ch. 2). In both cases, the emotions in question function on the level of affect; they are below the level of conscious thought and, while they can influence consciousness, they are not determined by it. They always exist before we are aware of them; as we become aware of them and associate them with language, they rise to the level of what Antonio Damasio would call feelings, as distinct from emotions (42). Our awareness of and capacity to reason about our affective states are part of what it means to be a thinking human being, but the actual affect is beneath and beyond. In understanding the affective appeal of the Talmud, I believe that Panksepp's explanation of SEEKING as an affect is useful. Panksepp defines SEEKING as "euphoric excitement rather than reward or pleasure—the feeling is one of anticipatory-

[16] Panksepp capitalizes all his basic affects to differentiate between the colloquial uses of each term and the specific technical use he assigns it in his work. I've retained that conceit when using his work.

expectant eagerness and, at a more cognitive level, the engendering of discrete expectancies. It is these highly energized, euphoric-foraging engagements with the world that animals find so rewarding. These are feelings that lie at the very heart of what some might call joyous aliveness" (83). This dovetails with Silvan Tomkins' suggestion that there is an affect for interest, which directs attention towards new stimuli and maintains it there (46). What makes these views both striking and strikingly useful is that they take an affect that seems, at first, similar to desire or lust and break with its sexual connotations, focusing instead on affect as a method of regulating behavior. There must be an affective drive to do and it is grounded in attention and anticipation. Tomkins defines affect as an urgent, general, abstract amplifier (58). Affect gives color, strength, and need to a creature's actions. For both Panksepp and Tomkins, we act because we are affective creatures.

To draw this back to the bookish book, a book that lacks affect is a book that, by definition, no one wants to read. Affect in texts drives the reader forward. By arguing for SEEKING and interest respectively, both authors provide a fundamental affect that explains the emotions that arise from engaging in the search for knowledge. The desire to discover, the anticipation of solving puzzles and answering questions exists on the level of affect as well. So a text that rewards the SEEKING system is one that takes advantage of that anticipatory affect as a way of drawing the reader forward. What makes a book like the Talmud so interesting is not that it, like so many other books, relies on SEEKING to make meaning, but that it uses the formal construction of the page—the interface—to engage that anticipatory affect and promote the reader's interest. I believe that the reader's desire to solve the text becomes part of the page's infrastructure and design. Over the next few pages, I will show how the traditional page of the Talmud works because it constantly engages the reader

in this project of anticipating revelations (and Revelation) and SEEKING them therein.

In this respect, there are many parallels between the way that the Talmud was studied and the way that Christians read the Bible. Peter Stallybrass compares Jewish and Christian approaches to devotional reading, arguing that Jews are the people of the scroll while Christians are the people of the codex. This is true specifically of the Jewish people's relationship with the Torah scroll, which is still a part of prayer services three times a week. While the discontinuous reading that Stallybrass identifies as paradigmatic of how Christians read the Bible is more similar in practice to how Jews would have read the Talmud, it appears more similar in purpose to the devotional chanting of the Torah.[17] Though technology of the codex, as he puts it, opened up a multiplicity of different reading practices, from the forensic to the liturgical, Stallybrass's emphasis is on how those reading practices make use of the ever-turning page (73). The Talmud certainly benefits from that technology as well, but the actual page of the Talmud facilitates a very different kind of discontinuous reading, one that is grounded not in the technology of the bookmark, but in that of the typesetter. The Talmud relocates the movement of the finger from holding open different pages to keeping track of different columns on the same page. Unlike Stallybrass's understanding of the turning pages of the codex that can be used for multiple purposes, the pages of the Talmud are formatted to facilitate a particular style of learning and thus best suited to generating SEEKING through

[17] It is worth noting that the weekly Torah portion, which proceeds through the Torah more or less in order, always includes a reading from the books of the Prophets, which is read from a separate book and not the Torah scroll. Moreover, there are multiple times in the year when the weekly Torah portion ends with section from elsewhere in the Torah. When this happens, most synagogues will have more than one scroll with each one pre-rolled to the correct location. For synagogues with only one scroll, the congregation waits patiently while the scroll is rolled to its proper location. Discontinuous reading benefits greatly from the introduction of the codex, but where there's a divine Will, there's a way. It is also worth noting that I have spent far more time studying Talmud than I have attending Mass.

that kind of learning.

Since its earliest publications, the actual words of the Talmud are arranged as a central column down the middle of the page and printed in traditional Hebrew script. Rashi's commentary, the aforementioned ubiquitous exegesis, is printed in a column closest to the spine, while the juridicial writers known as the Tosafists are found on the external side of the page. (See fig. 4 on page 74 for an example of the contemporary Talmudic page with different sections labeled according to author and purpose.) The double sided columns remind me of the image of an open gate through with the reader will pass to approach the text. This image of the gate recurs most notably on the frontispiece of the 1520 Bomberg edition of the text, the edition that set the basic shape of the page from then on. I read the text's appeal to anticipation as occurring even before the student even begins to study. The open gate of the commentaries invites the student with a visual appeal that will soon be echoed in the text itself with the oft-used words of the Talmud: תא שמע, come and hear. The text no longer speaks—it is not oral or auditory—yet the layout of the page represents the open door of the study hall that promises the necessary teachers who can help the student make sense of the text.[18]

I take this idea of studying the page for its format rather than merely for its content from the excellent work done by Bonnie Mak in her book *How the Page Matters*. Mak

[18] Though this reading is my own, Jewish readers would have been familiar with the process of reading meaning into columnar arrangement. Talmudic and Medieval commentaries on the Torah would often read meaning into the paragraph breaks in the Torah scroll, which are the only breaks in the columns of text that, otherwise, are of a uniform width. Scribes were required to keep those breaks in appropriate places. Coupled with the surge in meaning making through layout and visualization that began in the 16th century—a point that Johanna Drucker emphasizes in *Graphesis* (68)—the Talmud as gateway meshes with the interpretive rubric available to its early modern readers.

compares the same medieval text across different editions and, as she moves from manuscript to printed book to scanned facsimile, examines what the layout, font, illustration, and presentation of the page can say about the intentions of the publisher, the literary culture in which it was produced and the intended reception for each text. I take her work one step further, looking at how the page "matters" by asking how the page makes itself meaningful to the reader. I believe that these design features of the page are integral in making the book matter to the reader, in forming the affective bonds that keep the reader engaged and bring out her sense of anticipation and her sense of the text as a world through which she can forage. The Talmud, like the environment of a forest that Panksepp describes, is a world waiting to be explored and a world that inspires SEEKING.

At least, that is how such a book is supposed to work. In order for the book to engage the reader's SEEKING systems and provide the joy of anticipation coupled with the promise of fulfillment, she must herself be willing to set out and SEEK. We return to the dual invitation of the gate and the phrase—enter the study house and "come and hear". Both invitations are woefully incomplete; the work done by the student does not end with this moment of entry, but begins there. Having entered the text, she now must learn to navigate it. And this is where the formal attributes of the page become key. Like the oral instructions of the teacher, they guide the student through the page, the book and the entire canon of Talmudic thought.

How does the page of the Talmud matter to the reader? To use Mak's play on words, "matter"-ing refers to the import and the materiality of the page (3). The reader seeks and the material arrangement of the words on the page provides. In the 1540s, Marco Antonio Giustiniani published a third major edition of the Talmud that, though not of a particularly

high print quality, was notable for what it added to the page. His editor, Joshua Boaz son of Simon Barukh, indexed the entire Talmud and provided marginal notes for every Biblical verse cited, each reference to another sugya[19] in the text, and where the actual legal ruling for each law can be found in the Maimondean legal code, the *Mishneh Torah* (Fram 92). As Fram describes, Boaz's exhaustive work is responsible for much of the hyper-textuality of the Talmud and makes every page of the Talmud a node in a much larger network of scholarship, a key feature of at least one digital edition of the text and a topic that I will address in the next chapter. Boaz takes the reader out of that central column and into other texts, constructing a reading experience that is both archetypal and utterly unique. Boaz gives the reader the necessary knowledge that a teacher of Talmud would otherwise have—the sense of how this sugya fits into the larger framework of Jewish law, the context for the verses brought to prove the Talmud's case,[20] and the way that the passages of the Talmud influence the eventual legal decisions—which provides the archetypal experience. At the same time, the reader is still in control over these reading practices. Each marginal notation is an invitation to engage in what N. Katherine Hayles calls "hyper reading", a kind of reading that "enables a reader quickly to construct landscapes of associated research fields and subfields; it shows ranges of possibilities; it identifies texts and passages most relevant to a given query; and it easily juxtaposes many different texts and passages" (*How We Think* 62). The

[19] A Sugya is the basic organizational unit of the Babylonian and Jerusalem Talmuds, smaller and more coherent than the chapter. Each sugya is typically initiated by a statement from the Mishnaic-era rabbis and usually consists of multiple statements in dialectic. (Definition courtesy of Cantor Lawrence Szenes-Strauss.)

[20] The Talmud has a tendency to cite the first part of a verse and assume the reader can fill in the second part of the verse (which is inevitably the relevant portion). For the reader who has not memorized all 24 books of the Bible, this can be a daunting task without the help of Boaz's marginalia.

key term here is construct; these are texts made by the reader and for the reader, curated by others, but structured according to the individual. They are, in short, texts designed to be built through SEEKING.

In *How We Think*, Hayles discusses hyper reading in contrast to the "deep" or close reading that characterized literary studies heretofore. She takes hyper reading as a phenomenon of the digital age, a valuable skill that should be cultivated alongside deep reading as a method of making sense of the world. I would argue that part of hyper reading's appeal lies in the way it meshes with SEEKING. The presence of the metatexts reassures the reader that these connections are present, reaffirming the sense of anticipation felt when engaging with the text while still providing the opportunity to construct an individual framework and solve the puzzle of the text one one's own. Constructing the world of the hypertext and navigating the world of the Talmudic page are literary versions of the experience felt by the animal who manifests joyous aliveness while exploring the world.

The considerate text, or more accurately, the considerate writers who work in dialogue with the obfuscating text build a textual world that promotes SEEKING, but they also bring the experience of the study hall and the conversations held therein to the lone reader.[21] In this respect, the Talmud is a case in Early Modern Human Technology Interface studies. The design principles that underpin contemporary Human Computer Interface (henceforth HCI) choices can be taken from that context and read back onto the way that the

[21] The figure I call the singular reader of the Talmud is something of a controversial one, given the tradition of study partnerships or "Chavrutot" (from the Aramaic word meaning friend). Contemporary Talmud study often occurs between two students who work together to decipher it. This form is perpetuated in Jewish schools, where students are nearly always paired up into these partnerships during Talmud study. The Talmud itself refers to such partnerships, most notably that of Rabbi Yochanan and Reish Lakish, but the actual history is a matter of scholarly debate and will be discussed in further detail on page 34.

book communicates with the reader. Such an approach resonates with that of media archeology and could almost be called ahistorical insofar as it deploys contemporary ideologies, while resisting the impulse to relegate earlier forms of technology to prototypes that are perfected during the digital age (Parikka 3). A media archeological approach insists that the Talmud, for example, is neither a proto-webpage that lacks url technology nor the fully realized website *avant le lettre*. It is a codex that can be put in fruitful conversation with forms of digital technology to emphasize how the Talmud's own technological affordances map onto the reader's experience.

To read the Talmud through the lens of HCI is to begin with the proposition that the codex is an interface and that printing is a technology that makes the interface possible. That is all well and good but, more importantly, already dismissed as not unique to the Talmud. The specific layout of the Talmud—the design of the interface—comes to the forefront when thinking about the specificity of this interface. I would ask "How does the interface work?" but the real question behind that would be "What is the most useful metaphor through which to interpret the workings of this interface?" HCI lends itself to metaphoric thinking, a point made several times in *The Art of Human Computer Interface Design* by Chris Crawford, and equally present in the works of Janet Murray, Brenda Laurel, and Donald Norman, all of whom provide ideological paradigms that cast the relationship between the user and the device within alternative frameworks such as *Computers as Theater*, to use the title of Laurel's book. In a sense, these approaches can be reduced to Crawford's argument in *The Art of Interactive Design*, which is that the best way to envision human computer interactions and therefore the best way to design them is to view them through the lens of the interpersonal relationship.

HCI emphasizes the dialogue between the user and the computer, which Crawford imagines as the computer's ability to "Speak, Think, and Listen." Rather than use the more familiar terms of output, process, and input. Crawford prefers to translate what the computer does into interpersonal terms. As he puts it, "[w]e must impose human ways of thinking on the design process if we are to make our designs more understandable to humans" (19). The computer's ability to listen is most critical in Crawford's estimation, as that capacity sets it apart as a new kind of interface. The book, which speaks to the reader, but cannot listen and change in response, is a different kind of interface, but one which, possessing the capacity to speak and respond to itself, invites scrutiny using some of HCI's framework. The text is not in dialogue with the reader, but the interface shows how the book engages in interpersonal (or perhaps intertextual) communication.

The visual separation and complicated layout of the commentaries in relation to the words of the Talmud teach the reader to expect several voices. The text speaks, in the sense that Crawford uses the term, and the paratexts respond. Those paratexts remain separate, set off not only by layout, but also by font. Mak discusses the ways in which fonts are capable of speaking about the matter of the page; the scribal choice to use blackletter or humanist script for the same text colors that text's perception (23). The same is true for the typographic choices made during the early printings of the Talmud. Since the printing of the first Hebrew Bible, publishers have followed the convention of printing the text of the Bible using a script that closely matched the Assyrian calligraphy used to write Torah scrolls, while employing a newly designed font for the commentaries.[22] This font is known as "Rashi script" after the

[22] Assyrian Script is a direct translation from the Talmud. The term describes the Aramaic lettering adopted by Hebrew users from the 5th century B.C.E. onward. Prior to that, Hebrew

most famous commentator for which it was used. The Talmud follows this pattern, using the Biblical font for the Mishnah and Gemara to convey that they are another manifestation of God's word, while Rashi script is used for the commentaries. In more recent editions, each of Rashi's individual comments begins with a word or phrase from the Talmud that is printed in traditional lettering, followed by the comment in Rashi script. Assyrian script is the voice of the law, the font that links the written and oral manifestations of the Torah. Rashi script is the voice of the scholar, the explanation, the figure who is part of the page, but distinct from the text.

I believe that this multiplicity of voices, each of which is individually recognizable, matters to the Oral Law's larger project of maintaining mutability within a tradition of authenticity. Even after its remediation into writing, the text strives to present several opinions and voices, to model how disagreements about matters of law can be resolved through dialogue and debate. As the Talmud itself says about both sides in an ongoing debate, "These and these are the words of the living God" (BT Eruvin 6b). The Talmud does not simply record dissenting opinions; it lends them equal weight as remediations of the divine voice. The further the text moves from its oral antecedents, the more work it must do to retain God's polyvocal voice. The page, the site of the interface between text and reader, presents the speaking voices of the classroom, teachers, and self-directed student through the use of

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text were written using Canaanite script. During the last centuries of that millennium, Aramaic became the lingua franca of the region and, as Aramaic uses the same alphabet as Hebrew, the Jews under the Persian Empire switched scripts.

According to one opinion in the Talmud (BT Sanhedrin 22a), the written law was *actually* given to the people in Assyrian script. When they sinned, the script was taken away and only returned to them when they repented. Leaving aside any factual claims made by this narrative, this story emphasizes how completely Assyrian script became associated with the Torah and the writing of God's law.

page layout and distinct fonts.

The Talmudic paratexts provide an opportunity for interactions between reader and text that mimic the teacher/student model that is so important to the orality of the Oral Law. Perhaps the best example is a statement that appears often in Rashi's commentary. Occasionally, the Talmud will mention an idea without explaining why it is relevant. The text assumes that the reader both recognizes the concept and understands why it referenced. In these cases, Rashi will sometimes flesh out the connections that the Talmud neglected to provide. Other times, he will simply respond with the two-word phrase "מפרש לקמן", "this is explained later." In one sense, this is an unnecessary addition. Rashi provides no new information to his readers, nor is he even directing them outside of the text. However, I see Rashi as speaking to the reader like a teacher aware of his role as interlocutor. He anticipates his reader/students' confusion and reassures them through extraneous commentary that their confusion is justified, but that the text will make itself clear later on. The paratext reassures the reader that Rashi is "on the same page" as they are, not just literally, but emotionally. The texts build a sense of connection by recognizing what the readers will not know and acknowledging that confusion. This connection and sense of companionship, like so many other affects, is noticeable most when it is broken. As a student of Talmud, I am disappointed when I find a statement I do not understand in the text and turn to Rashi only to discover that he has nothing to say about that phrase. The unremarked-upon companionship of the 12th century scholar disappears, and it is then that the text's earlier consideration for me as reader becomes visible.

While perhaps it goes without saying, Rashi the teacher is not present to the reader. The name of the author and the author's text stand in a complex metonymic relationship. The

absence of any written record on a given topic is read as an absence of Rashi's thoughts. Rashi as figure and text recalls Handelman's description of the word and the thing, the etymologically similar דיבור and דבר in Judaism. That sense of betrayal and of absent instruction that I mentioned previously comes from the reader's performance of the text. Her movement within the layout of the page performs the different voices that make up the page and, when there are no words to reenact, the actor's absence is palpable.

The reader's movement shifts the Talmudic page from the realm of pure SEEKING further into that of subjectivity. The text that seems to respond to the reader and that relies on the reader's experience of the page is a text that can evoke a sense of vitality. In parallel with the excitement-in-aliveness that characterizes SEEKING, Daniel Stern takes the idea of vitality from the realm of the parent-child interaction and brings it to bear on the relationship between a human being and the arts (*Forms of Vitality* 42). During his work in infant observation, Stern shows how affect moves between parents and children through a process he calls affect attunement.

> "For there to be an intersubjective exchange about affect, then, strict imitation alone won't do. In fact, several processes must take place. First, the parent must be able to read the infant's feeling state from the infant's overt behavior. Second, the parent must perform some behavior that is not a strict imitation but nonetheless corresponds in some way to the infant's overt behavior. Third, the infant must be able to read this corresponding parental response as having to do with the infant's own original feeling experience and not just imitating the infant's behavior" (*The Interpersonal World of the Infant* 139).

This process forms the basis for how Stern believes human beings share affect. Through the

process of attunement, one person's affective state becomes knowable to another and that other can, in turn, acknowledge and share in that affective state.

Translating this intersubjective sharing of affect from the realm of the parent-child interaction into that of the arts is the subject of Stern's final book, *Forms of Vitality*. In that book, he deals exclusively with what he calls the "time-based arts" such as music and dance, those that rely on rhythm and movement. For Stern, "movement, time, force, space, and intention/directionality…give rise to the experience of vitality" (*Forms* 4). When we integrate these events, we experience dynamic forms of vitality. "The dynamic flow of music (sound in motion), dance, theater, and cinema sweeps us up at moments and then releases us, only to sweep us up again just as quickly downstream" (ibid. 6). Stern leaves aside the narrative arts in his analysis as a "fascinating problem" for another time, but I believe that his work extends to encompass a text like the Talmud that contains events in movements, space and even time. The rhythms of the text echo those of a conversation, with the interlocutors appearing at the right moments to answer the right questions. The same expectation and response that parents use to lead their children through affective dialogue (and vice versa) drive the Talmud's relationship with its reader. While the mode of affective mirroring differs, the underlying principle that one side of the dyad—in this case the book—can sense the affects of the other and respond appropriately remains. The Talmudic page is built to guide the reader, which makes it sensitive to the reader's interest and frustration. The rhythm of moving around the page and exploring the text is the rhythm of SEEKING and pleasure, while the feelings of anger or difficulty are validated through the commentaries and paratexts, whose presence can then be used to pacify the reader. "I know you are frustrated," says the metatextual parent, "Let me help." To push the analogy one step further, the

disappointment I feel when Rashi fails to step in with an explanation is rooted in the infant's disappointment at the parent who fails to respond to the infant's offered affect. In one of Stern's experiments, he asked the mothers participating to suddenly stop responding in the middle of an affective exchange. "Infants by three months of age react with mild upset and social withdrawal, alternating with attempts to re-engage the impassive partner" (*Interpersonal World* 149). My response to Rashi, while rather more sophisticated and understandably not mixed with an attempt to re-engage, is the same in kind. The structure of the intersubjective experience and the affective exchange cannot be brought intact to the page, but it can be remediated.

This is the Talmud's *rapprochement* with the intersubjective orality of its origins. The page works hard to recreate what it can precisely because such a project cannot hope to be perfectly successful. The classroom in the pages cannot replace the classroom in truth, no more than the words of a teacher can replace those of the divine. There is no way to substitute presence with absence, especially not on the level of affect. Reading the Talmud does not *feel* like studying it in a classroom and I use the term feel advisedly. The absence of others makes certain kinds of affective transfer impossible. Teresa Brennan emphasizes the importance of physical presence to the movement of affect.

> "The origin of transmitted affects is social in that these affects do not only arise within a particular person but also come from without. They come via an interaction with other people and an environment. But they have a physiological impact. By the transmission of affect, I mean simply that the emotions or affects of one person, and the enhancing or de- pressing energies these affects entail, can enter into another" (3).

Humans are affected by the embodied presence of others: the touch, smell, bodily existence

of the other explains how affect moves from one person to another. In Brennan's view, one person can feel what another feels and one's affect always exceeds the boundaries of one's own skin. Being with another person makes one subject to their affect. One need not fully embrace Brennan's argument to appreciate how dependent one body is on the presence of another for its affective state. Whether I describe affects as welling up from the heart, coming from the release of specific neurotransmitters in the brain or impinging on a person through the nostrils, certain affects come into being with the presence of others. And no matter how cleverly the page is organized, no matter how exhilarating the feeling of SEEKING and finding, one will not feel the classroom as a solitary reader.

This was, at least in the views of those publishing the Talmud, a worthwhile trade-off. In the colophon to the first tractate printed by the Soncino press, Joshua Solomon Soncino states that his father of blessed memory visited him in a dream and advised him:

> Print books so that they will provide two well known benefits; first, that a large number can be made, until the world would be filled with knowledge; and second, that their price will not be as high as the price of copies written with quills, iron pens or lead. And those who lacked the means to acquire those expensive copies will be able to purchase these cheaply, [and] in place of gold, they will bring silver... (translation from Heller 63).

This is the trade-off of the Oral Law, re-enacted yet again. The message of the Midrash in which God speaks the Decalogue remains necessary: affect is sacrificed in the name of accessibility. The vibrant classroom is translated to the page, muting the sense of camaraderie

and, more importantly, highlighting the excitement of SEEKING.[23] As with all compromises, it cannot help but be imperfect, and those imperfections only become more problematic as the Talmud moves into the 19th century.

## III. Volozhin and Vilna: The 19th Century Talmud and the Homogenization of Experience

The Talmud as a SEEKING codex that teaches through layout requires an idealized student towards whom it can direct its education. The intersubjective experience demands a responsive listener no less than the interface demands an interpreter. In the previous section, I spoke about the student in such terms, a single figure who can wrangle with the text and make meaning out of it. This student did not arise *ex nihilo*; Jewish education from the middle ages and onward was a high priority and most boys within a community spent early years in a *cheder* that covered elementary education. When Soncino spoke about bringing

[23] This analysis focuses predominantly on the affects embedded in the layouts, fonts and paratexts, with but a few mentions of those within the text itself. While the Talmud is a book of legal opinions, it is also a narrative of how those legal opinions came to be. As such, it possesses the same sorts of narrative affects that are found within any work. The diligent Talmud student will become familiar with the rabbinic personalities of the Talmud as characters who tend towards the earnest, the dictatorial, the dryly sarcastic and so on. However, there is very little written regarding the reception history of Talmudic characters and thus no real way of knowing whether previous generations would have formed an affective attachment to R. Akiva's warmth or Abaye's childish ingenuousness. While it is unlikely that the Talmud would ever have been read purely for the sake of encountering these characters, one wonders whether it is possible to escape the affects that come from narrative. Having said that, this chapter concentrates primarily on how the formal and material arrangements of the text influence affect and make meaning. Narrative affects, while a subject of interest and one to which I will return in chapter 3, are not relevant to the evolution of the Talmudic layout. I would direct the curious reader to Rabbi Binyamin Lau's four-volume set, *The Sages*, which was recently translated into English, for more information about these personalities and their lives.

silver instead of gold, he was not simply referencing Isaiah;[24] he was speaking the truth. Books were still expensive, and while education within the Jewish community was widespread, the quality of the education was often dependent on the wealth of the parents. There is, in short, a gap between reading the ideal experience of the Talmud-as-studied and reporting on the history of its reception. If the previous section was an account of the former, this section addresses the latter during the 19th century in Lithuania,[25] a time period of interest because it marked a notable change in the communal infrastructure around Talmud study. This shift in Talmudic reading was followed by the publication of the Vilna edition of the Talmud, which effectively replaced every other edition of the text. Texts may be amorphous ideas, but books are firmly located in the bindings that contain them. Constrained by historical circumstance, the following account is of a text in context. I trace the development of the Talmud and Talmud study during the 19th century in a way that points towards the successes and failures of the SEEKING interface and the role that technology played in redesigning that interface. In doing so, I do not describe the ideal experience of Talmud study, but the experience of the Talmudic interface that is the contemporary legacy of Lithuania.

The history of the yeshiva and the history of the 19th century editions of the Talmud are parallel historical tracks that, as Shaul Stampfer and Michael Stanislawski argue in

[24] Isaiah chapter 60, verse 17 begins “In place of brass I will bring gold, And for iron I will bring silver” (trans. Jewish Publication Society with slight emendation to better show the parallels to Soncino.)

[25] For the purposes of this dissertation, Lithuania refers to the lands that made up the ancient Duchy of Lithuania, which comprises parts of modern day Lithuania, Belarus and Poland. The Jewish community in this region possessed some self-governance until the mid 18th century and, more importantly, was culturally distinct in attitudes and practice from the surrounding Eastern European Jewish communities.

*Lithuanian Yeshivas of the Nineteenth Century* and "The 'Vilna Shas' and Eastern European Jewry" respectively, are influenced by the same 18th century historical developments. Both took shape in response to the rise of the Hasidic movement in Eastern Europe and continued to evolve ideologically during the heyday of the Jewish Enlightenment, the *Haskalah.*[26] Both the academies and the publications were part of the struggle of the Hasidim, the proponents of the Haskalah known as the Maskilim, and the Mitnagdim to define themselves through the literature they printed, the texts that they studied, and the ideologies they espoused. The Lithuanian yeshivas staged this battle against both Hasidism and the Enlightenment. And one of the main tools used in that fight was the Talmud.

The first Lithuanian yeshiva was established by Rabbi Hayim ben Yitshak in his hometown of Volozhin. The historical record is not entirely clear as to why R. Hayim considered this the right time to reinvent Torah study, although some of his surviving

[26] Without crossing too far into the realm of Jewish history, the Hasidic movement of the 18th century was a populist, anti-ascetic movement that emphasized mysticism, ecstatic observance, and prayer. Its detractors, the Mitnagdim (a word that means "opposers" and was coined specifically to characterize its adherents as the opposition to the Hasidic movement) argued that this mysticism and joy often came at the expense of meticulous observance and respect for, not to mention knowledge of, Jewish texts. The division turned quickly to animosity and there are a number of reported instances of one group using the apparatus of the secular state to incarcerate the other. The conflict never disappeared entirely, but was superseded by the Enlightenment movement, a common enemy to both and one that, unlike the Hasidic movement that arose within Eastern Europe, was imported from the Western European communities, primarily those in Germany.
The Haskalah, a direct translation of enlightenment into Hebrew, advocated greater secular education, more integration of the Jewish community into the nation-states that were a product of the Enlightenment and, as time went on, a jettisoning of religious practices. It led, in its own way, to the Reform movement in Judaism and the eventual development of both the Conservative movement and Modern Orthodoxy in Germany and America. From the perspective of the Hasidim and Mitnagdim, the main threat inherent in the Haskalah was the dissolution of the traditional Jewish community when the new nation-states revoked what little sovereignty the Jews had in their towns and the movement away from Torah study and observance towards secular education and assimilation.

writings suggest that he based his actions on a familiar fear. Stampfer, who has written an exhaustive history of the Lithuanian yeshivas, quotes R. Hayim as having written "The crown of Torah is abandoned in a dark corner, and with my own eyes I have seen a certain region where this custom has spread to such an extent that in most of their *Batei Midrash* (houses of study) there is nothing but books of *musar*, and not even a single complete copy of the Talmud" (27). Musar, a comparatively new discipline within traditional Jewish literature that focused on introspection and self-improvement, was problematic because, as R. Hayim's language suggests, time spent on musar was time taken away from Talmud study. R. Hayim's fear seems to be that the Talmud was losing its place of primacy within the Jewish tradition, not that students were abandoning traditional literature wholesale. The Talmud is either metonymically representing the entire Torah or is equivalent to it and, in either case, its decline is the decline of all Torah study and, implicitly, of Judaism. Stampfer is quick to point out that "[e]very generation hears that Torah study is not what it was in the past" (ibid.), a statement to which the earlier sections of this chapter can attest. The fear of decline is far more powerful than decline itself and this fear for the Talmud seems to have been one of the major impetuses behind the founding of the Volozhin yeshiva. The other one was money or, more precisely, opportunity.

In the *Beit Midrash*, those who wished to learn would either come in their spare time and pick up a book or would dedicate themselves to studying full time and rely on the generosity of the community to provide them with meals and a place to sleep. The more renown one managed to accrue as a serious textual scholar, the better the support. The goal was to garner enough prestige that one could marry into either a famous rabbinic family or provide a new pedigree for a wealthy father-in-law (Stampfer 5). The system was fairly self-

selecting; those who could not handle the study necessary were not given the support they needed to survive and so left for some other work. There was no system for those who could not afford to start building a reputation and little support for those who wished to study, but lacked the skills to get started. R. Hayim ended this tradition by founding a yeshiva that attracted students from their own communities to Volozhin and providing them with a stipend that they could use to pay for room and board. The academy relied on donations from all over Eastern Europe to maintain its solvency. R. Hayim lectured daily at the yeshiva, providing both financial and pedagogical opportunities for those students who wished to study. In doing so, he built a community of scholars that distanced itself from the surrounding town while turning inwards and strengthening the relationships between the students and teachers. In short, he returned the physical sense of being a person among people to the students of the Talmud.

As a series of practical steps, this change was not as drastic as it sounded. Based on the records left by the students of Volozhin, plenty of students still studied on their own in the yeshiva and the daily lecture on the Talmud was optional; a student could choose to continue studying the Talmud individually or with a partner. There is some discussion as to the role of partnerships or *chavrutot* in the yeshiva. Stampfer sees little evidence of the partnerships themselves except occasionally between more experienced students and newcomers, but his opinion is the minority. As Alisa Segal puts it, "[w]hether Chavruta learning first became the norm during the period of the Lithuanian yeshivot or was introduced at that time and only became the norm later, the scholars agree that it was indeed an innovation" (9). Student partnerships extended far beyond the Talmudic page; the relationships between the students determined much about the culture of Volozhin as it became its own society next to, but apart

from, the town of Volozhin. The students formed societies for the discussion of forbidden Enlightenment literature or the growing Zionist movement and, more than once, they banded together to show their disapproval for visiting scholars or the head of the yeshiva.[27] The head of the yeshiva held the pursestrings, unless the students were independently wealthy, but the students had their own power, one grounded in the ways that they chose to engage with or disengage from the yeshiva. In the moments when their presence as voices in the classroom was called into question, either because they silenced themselves or because they shouted down the possibility of dialogue, the yeshiva broke down.

It is worth emphasizing the similarities between such interactions and those that I argue undergird the relationship between the reader and her medium of choice. The metaphors that make sense of the human's relationship with media are based in this exact interpersonal relationship. The Talmud works, at least in theory, because it engages the reader's curiosity without shouting the reader down. Conversely, the occasional breakdown in pedagogy at Volozhin draws attention to the interpersonal in the realm of Talmud study as the moment when the give and take of the Talmud fails. The ideal student is one who adopts "a stance of inquiry towards text and tradition" (Levisohn and Fendrick 12). The best students at Volozhin were those who spoke up during lecture, asked hard questions, and provided thoughtful answers. The classroom thus described does not, like the text of the

[27] Stampfer provides examples of these student protests, which took two forms. One is the traditional student response of disengaging and disrupting. Given that attendance at the daily lecture was technically optional, students could show their displeasure by deliberately walking out when the head of the yeshiva came in to give the lecture or simply refusing to attend. Alternatively, Stampfer relates a story about a visiting rabbi from another yeshiva who came to give the daily lecture. The students, concerned with the honor of Volozhin, continually interrupted the lecture with the hardest questions they could ask in a move that shifted the intellectual power in the room from the teacher to the pupils.

Talmud, provide echoes of attunement or a sense of intersubjectivity. It provides the thing itself.

The move from study hall to yeshiva and from textual classroom to physical one has serious implications for the success of the printed Talmud and the design of the page. Volozhin, and the yeshivas that followed it, appear to signal the text's failure to recreate the orality of the classroom to a sufficient degree. Volozhin, a single room that held over one hundred students, did not need to recreate the classroom and find a way to bring to life a cacophony of voices. It was one, by the nature of its physicality. If R. Hayim questions how to provide the opportunity for students to study and have access to the teachers who can guide them, his answer is not, as we have seen previously, grounded in remediation, but in reification. He built a yeshiva.

I think it premature, to say the least, to call the Talmudic interface a failure. Barely three years before the founding of Volozhin, the Shapira printing press in Slavuta began publishing its new edition of the Talmud with extensive additional commentaries. During the earlier years of the yeshiva, the Romm printing house in Vilna began printing their own edition, setting off the religious version of a copyright battle that only ended when, for unrelated reasons, the Russian government shut down the Shapira printing press and exiled the Shapira brothers to Siberia.[28] Despite the subsequent restrictions on Jewish printers in Lithuania, the Talmud remained constantly in print. Every student who entered the Volozhin yeshiva was given a copy of the current tractate. The Talmud was not going anywhere, even if measures were put in place to make up for the perceived deficiencies of the interface.

However, if the formal layout of the page was a failure from the beginning, then the

[28] See Saul Ginsburg on *The Drama of Slavuta* for the full story.

yeshiva system should have arisen long before the 19th century. The Talmud as teacher-text seems to have been sufficient for nearly three hundred years. After all, R. Hayim's lament was not about the quality of the printed Talmud, but about the quality of the students. The effects R. Hayim was seeing and the success that he and others found in reinventing Talmud study could just as easily be attributed to an increase in interested students. Zeev Gries observes the growing interest in Hebrew books during the 18th and 19th century, specifically an interest in the Talmud that manifests as a surge in Talmudic commentaries published: nearly ten times the number of commentaries were published during the 18th century than during the two centuries previous. With the spread of intellectualism that accompanied the Jewish Enlightenment and the primacy that the Mitnagdim were giving the Talmud, it is unsurprising to find that growing (male) intelligentsia turning to the Talmud and studying it in greater numbers. Coupled with the rise in birthrate during the 18th and 19th centuries that increased the population of Eastern European Jewry tenfold, the need for a new system appears to be a problem of quantity. The layout that had sufficed to teach the select few did not scale. The yeshiva system that focused on approaching the text with a partner and attending seminars, however, is still going strong.

It is tempting to also credit the yeshiva system with the printing of the Vilna edition of the Talmud. Between the demand created by the yeshivot for more copies of the Talmud and the emphasis that the schools placed specifically on Talmudic mastery, the arrow of causality does appear to point in the right direction. Unfortunately, there is a real absence of evidence that the yeshivot were responsible for either printing the Vilna edition or making it definitive. It is far more likely that the connection between the yeshivot and the Vilna edition is more tenuous: the Vilna edition likely came into being in response to the same factors that

brought about the yeshivot: a growing interest in books, specifically the Talmud, and the emphasis that the Mitnagdim were placing on Talmudic scholarship as the definitive expression of Judaism. In more practical terms, it is unlikely that Volozhin was big enough to have any real effect on the Vilna edition. When first released in 1880, the first volume of the Talmud sold over 22,000 copies ("Romm Family"). Given that Volozhin had roughly one hundred students at the time, the yeshiva's purchasing power had little impact on the success of the endeavor.

Crediting the Vilna edition's quick adoption and its subsequent acceptance as *the* edition of the Talmud that all future publications would either re-typeset or copy outright to any one reason is historically suspect and unverifiable, so I will not attempt to do so. Rather, I want to discuss certain features of the printing that might help reframe the question somewhat. The Vilna edition of the Talmud was released soon after the Romm publishing house modernized their entire printing apparatus and the project itself was not simply a reprinting of the Talmud, but an attempt on the part of the firm's director, Shmu'el Shraga Feigensohn, to create the definitive edition. Given this information, I want to look at the importance of new technologies in making a comprehensive, standard edition possible.

The Romm printing house was established in 1799 and printed several copies of the Talmud during its twelve decades of existence. The edition printed in the 1880s is the famous one known as the Vilna edition, although there were two prior editions produced by the Romm house. From the period of 1834 to 1862, the Romm printing house held the copyright on printing the Talmud and was one of only two Jewish printing firms allowed to operate in Russia after the Shapira press was shut down. The firm had other problems; between a fire that destroyed the printing house in 1841 and censors who removed significant portions of

the Talmud to the point that it was sometimes unusable, neither the Talmud nor the Romm printing house was doing particularly well (*The Book in the Jewish World*).

In 1862, Czar Alexander II repealed the decree limiting the number of Hebrew printers and the Romm printing house now had competition. Deborah Romm, who had taken over the firm when her husband died, appointed Feigensohn as director to help get the firm back on its feet and Feigensohn rose to the challenge. In his memoir, Feigensohn records his outrage that the press had been running so long with five hand-operated presses and no copy machine or method for stereotyping books (279). As director, Feigensohn put together a four-step plan that would "set the firm on four strong pillars such that it would never die" (280). First and foremost, the firm had to modernize. Feigensohn asked for, and was granted, the funds to travel to Berlin to purchase state of the art stereotyping machines. In *The Reading Nation,* William St. Clair discusses the impact stereotype printing had on the printing houses in early 19th century Britain. Stereotyping allowed printers to preserve the type setting for individual books as single plates. In practice, this meant that the cost of reprinting a book or releasing a second edition required no extra work once the first edition had been typeset and stereotyped (182). For most publishers, this added incentive to rigidly enforce copyrights; each individual firm had the reprint advantage only while no other firm tried to compete with them. The stereotyped plates were an easy way to make money on popular novels with just the cost of ink, paper and printing labor. For the Widow and Brothers Romm, the advantages of stereotyping were even more pronounced. Unlike secular printers, who often gambled on a book's success or failure, the Hebrew presses knew that at least several of their books, such as the books of the Bible, prayerbooks, and the Talmud, were lucrative commodities that would always be in demand. Stereotyping was a sound investment for the firm, especially in

the face of new competition, and it would allow them to maintain production of their most sought-after texts. Soon after the modernization endeavors in 1867, Feigensohn set out to print another edition of the Talmud.

As a printing house of Hebrew books that had been regularly releasing new editions of the Talmud for nearly seventy years, I suspect that the Widow and Brothers Romm would have published an edition of the Talmud even if the firm had not brought in stereotyping. I will, however, speculate that the amount of effort put in by Feigensohn was due, in part, to an appreciation of what stereotyping could do. Their edition of the Talmud could be reprinted as many times as necessary and the only real limit was whether it would be widely adopted. The biggest problem with stereotyped plates was that they were bulky and took up warehouses worth of space. This was doubly true for the Vilna edition, which was printed as over twenty oversized volumes, rather than the usual twelve (Heller 49).[29]

This was Feigensohn's other contribution to the Talmud project: in addition to overhauling the printing technologies, he was responsible for the completeness of the editions.

To quote Feigensohn from the afterword:

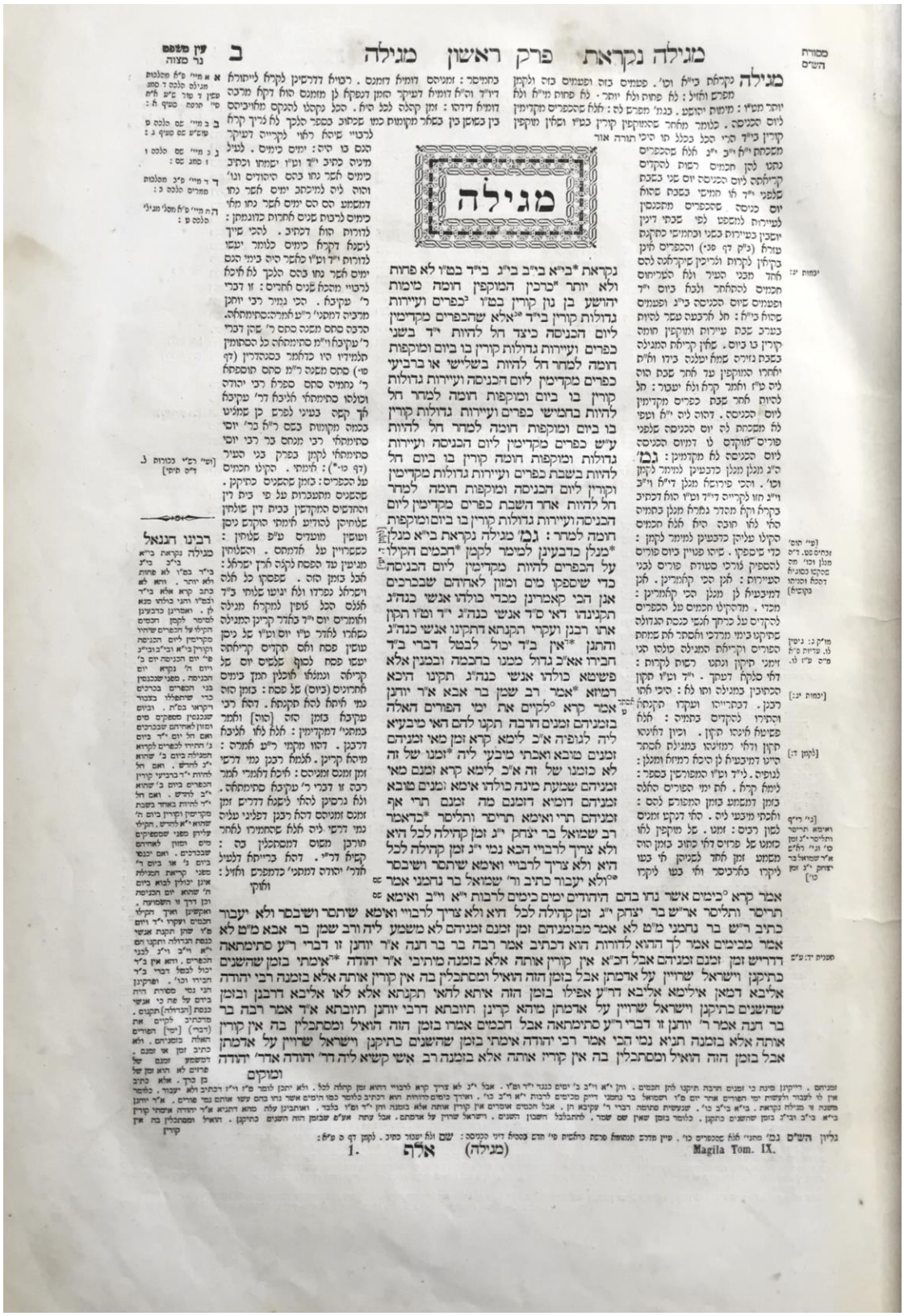
> "For behold, we did not come to print a Talmud like other books of the Talmud, not to copy its early form and to mimic its publications like monkeys. We [came to] create for it new heavens and new faces, to shine upon it a new light like the first light [of creation] that was hidden millennia ago;—For God has inspired (lit. lit up) our spirits

[29] During the few hours I got to spend with the first edition of the Vilna Talmud in the library of the Jewish Theological Seminary, I measured the text. Each page was approximately 11" by 17". Unfortunately, these editions had the original bindings replaced, so I could not see the covers.

> to seek out the lights that were hidden in the handwritten commentaries of our early rabbis to reveal their hidden [words], to bring them from the clouded darkness of their hiding places, that they are no longer buried beneath, to hang their illuminations in the firmament of the Talmud that they may shine upon it their very sublime, bright, new light" (Reprinted in Rabbinovicz 159, trans. mine).

Feigensohn's vision of the Talmud specifically involved a new "form" (Heb. צורה) for the Talmud, a revision that was closer to a reinvention. Though the Vilna and Slavuta editions from earlier in the century established the importance of additional paratexts, Feigensohn painted the 1880 edition as a new kind of Talmud and a different experience. To extend the metaphor of the classroom, the Vilna edition was meant to encapsulate as many voices as possible. The polyvocal page of the Talmud was going to be brought to its limit.

According to Gries, Feigensohn oversaw "a production characterized by scrupulous proofreading and the addition of many variant readings and commentaries. At his behest, manuscripts held by various libraries were copied in order to add early, previously unpublished commentaries to the new edition. At the height of its production, more than 100 printers and 14 learned proofreaders were involved in the project" ("Romm Family"). This was another of Feigensohn's pillars: he insisted on overhauling the proofreading process so that "our publications would be praised above all other books…and they shall be embarrassed by our books" (280). Compared to Bomberg's original page, the Vilna edition was a veritable jungle in print (See figure 3 on page 64 for a side by side comparison and figure 4 on page 69 for more information about the additional commentaries). The Vilna edition filled in much of the blank space on the page with additional commentaries, some of which were tracked down specifically for the project, and added numerous others as



מגילה

Figure 2. Photo of the Vilna Edition of the Babylonian Talmud.

appendices. The edition was far and away the most complete one available, which earned it preprint rabbinic approbations[30] and caused everyone involved with the project to worry about its financial viability. Feigensohn's solution was to offer subscriptions. The printing firm issued a call for subscribers and Feigensohn made a deal with his employers that if he could raise four thousand signatures promising to purchase the new edition, then they could print the Talmud. Over ten thousand subscribers responded to the newspaper advertisement and promised to buy the new edition (Feigensohn 284). It was, in all respects, a very successful Kickstarter.

The codex that became known as the Vilna edition could not have existed without the changes to print technology that came about in the 19th century. Stereotyping and copy machines promised infinite repeatability; a promise on which the technology could not fully deliver that also explains why there are so many grainy copies of the Vilna edition in the world. The Widow and Brothers Romm did not so much raise the bar as change the game: they were now selling *the* edition of the Talmud and the technology supported widespread adoption. They could produce volumes in the quantities necessary to serve their subscribers and the community of religious Jews, which still looked to Eastern Europe as the stronghold of religious practice and Torah study (Stanislawski 98-99). Eventually, the plates themselves made their way to Israel and the United States, but many reprintings were direct photo-reproductions of the Vilna version, including one of the editions I currently have on my

[30] Rabbinic approbations were crucial from a marketing perspective—they informed the reader that the book had the approval of whichever collection of Rabbis had been solicited. For more controversial books, they were a way for the publisher to protect their reputation. And, most importantly, Rabbinic approbations often contained halachic copyright rulings stating that the publisher had the right to publish a certain book for a period of time and that infringing on that copyright was a sin.

shelf.[31] The other versions are primarily careful recreations of the Vilna edition; they look the same as the reproduction except they are far less blurry.

Technology made the ascent of the Vilna edition possible. What made it popular, however, is an open question. Despite the number of copies sold, the Vilna edition was still a Talmud for the wealthy. During a conversation with Barry Wimpfheimer about his upcoming biography of the Talmud, he explained that he had asked the Talmud scholar David Weiss HaLivni about the Vilna edition in 1930s Eastern Europe, when HaLivni was in *cheder*. HaLivni answered that the edition was not yet widespread among younger students for cost reasons, but it was already looked upon as the ideal edition. Moreover, HaLivni noted that the practice of purchasing a complete set of the Talmud for a young man on the occasion of his marriage (known in Yiddish as a *chosson shas*) had already become commonplace and, like the current incarnation of the practice, the gift was given when the bride's parents could afford it rather than when the bridegroom could understand it. The Vilna edition was not a scholarly tool; it was a symbol. Feigensohn's advertisements, themselves a product of 19th century newspaper technology and print culture, succeeded in convincing the readership of this Talmud's superiority. I would speculate that the growing advances in offset printing and copying brought the Vilna edition to the masses and, in tandem with the cultural cachet of the edition, made it the only layout worth owning. Many editions have been published since then. Very few have chosen not to recreate the Vilna layout exactly.

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[31] The edition on my shelf is a wonderful example of what happens when an 11"x17" page is copied multiple times and shrunk down to 5.5"x7". I use it anyway; it is THE Talmud after all.
Anecdotally, a friend of mine currently attending rabbinical school has noted that one of his rabbis refers to any edition of the Talmud that is not the photocopied Vilna page as "the goyische (gentile) Talmud", which speaks to the process by which the status quo becomes enshrined as sacred. See the next chapter for more details about that.

Figure 3. Comparison of the Vilna page and the original Bomberg Page

Thanks to the legacy of Vilna and Volozhin, the experience of Talmud study is now deeply (inter)personal and entirely standardized. After graduating from elementary level learning, students form pairs and tackle the text, using the different paratexts found on the side of the page to clarify the meaning of the text and turning to the back of the Vilna edition to consult more recent additions, like the רי״ף (RIF - Rabbi Isaac al-Fasi) and the ר״ן (RaN - Rabbi Nissim of Gerona), the latter of which is a metacommentary on the former, both of which are useful in tracking the development of Halacha from the decisions expounded in the Talmud to later practices as adopted in the communities. The yeshivot—including the one I attended, which was led for many years by the great grandson of Volozhin's deputy

headmaster—teach this process of navigating a Talmudic disagreement: how to use Rashi to understand the text, then Tosafot to understand the practical halachic distinction between each opinion, then how to look up the RaN's opinion's and see whether the law follows the Talmud's decision or whether some other factor comes into play. The process only continues from there, and the only reason I will not call this training standard in the Orthodox Ashkenazi world is that many institutions would not have taught me on the basis of my gender. The chavruta as a method of Talmud study has spread far beyond the confines of Orthodoxy and many of the other denominations of Judaism that developed during the 19th and 20th century have adopted it. In such circumstances, the focus of Talmudic close reading is rarely to interpret the laws, but to interpret the text and context that shaped the development of Jewish history. The methodology of studying text and paratext to construct the path of meaning along with one's partner remains the same as that made possible by Soncino and Bomberg's early printings.[32]

In the history of codex-based interfaces, the Talmud is interesting for both its absolute ubiquity and the way that it defines the reader's interaction with it. In the same way that adding spaces and punctuation, the latter of which are *still* absent from the standard Talmudic page, influenced how medieval readers read, the complex layout of the Talmud dictates the spatialized exploration of the topic. If every copy of the Talmud is the same, the differences in the chavruta experience are due to the idiosyncrasies of the readers, not the text. With the emphasis on the chavruta and the yeshiva, the text is no longer responsible for the entirety of the emotional experience. It becomes an interface through which the two members of the

[32] For more about contemporary Jewish pedagogy, see *Turn and Turn it Again*, specifically Orit Kent on "A Theory of Chavruta Learning".

chavruta construct the rhythms of their study group. In doing so, the layout itself loses some of its intersubjective primacy when it is no longer responsible for recreating the experience of being with another. When an other is physically present and the affective experience of the Oral Law is drawn from the group dynamic, the page is no longer responsible for evoking the entire classroom. The success and failure of the Talmud at generating the affective exchange has changed so that the Talmud is now part of a triad, one with two readers sharing a single codex that they perform in tandem. The idealized form of the Oral Law is once again oral.

The spread of Talmud study in this exact form, what I have been calling its standardization, speaks to the way that the layout of the text and the community it serves are intertwined. If my reading of the printed page shows how the text speaks to the reader, my reading of the 19th century printing shows how the community of readers in turn speaks to the text. The interface of the page carries both individual affective experiences and communal affective relationships. The page is idealized, the manner of approaching it ritualized, and the interface is sanctified in the sense that it becomes imbued with sacred affect. My quasi-mythic history of the Oral Law begins with the narrative of remediation, one concerned with the dual preservation of content and affect. The evolving page balances the affective needs of the reader with a growing desire to preserve transmission. In doing so, the emotional experience is externalized from the text, creating an edition that possesses the emotional tenor of the original, but lacks its protean nature.

Despite succeeding, overall, in its project of retaining the affective experience of the Oral Law, I would argue that the layout is so deeply entwined with the reading experience that the affects will never be exactly the same as when the Oral law was oral. To whit, as the page emphasizes the experience of discovering and SEEKING, the connection between the

Written and Oral Laws as two sides of the same Revelation fades away. The sense of the text as sacred remains: for reasons I will discuss in the next chapter as well, the SEEKING is balanced by the sanctity of the text, which is in turn inscribed into the very form of its pages. The unchanging page that the reader traverses successfully captures both the sanctity of something that is consecrated and cannot be touched and the delighted SEEKING that comes from seeking a way through the page. However, there is no real equivalent experience of the sublime embedded in the pages. While hearing a mediated version of god's revelation might be analogous to a sublime experience, as indeed I analogized it, the same does not hold true of the doubly remediated page of Talmud. The Oral Law moves first from God's mouth to God's people's mouths and from there to the page. The experience of the sublime, already predominantly located in the relationship between the people and the Written Law, fades away in the face of SEEKING as the predominant affect. And while SEEKING is not inimical to the sublime—there is a long history of the two working in concert as those who SEEK the sublime experience first one and then the other—the design of the page in particular emphasizes the journey of discovery through drawing the reader in rather than a SEEKING that would engender distance and awe.

As a layout made up of sacred text boxes, the Vilna edition poses an interesting problem for all future editions, especially those that wish to remediate the Talmud once again. I will discuss this problem in greater detail in the next chapter, but I will sum it up as follows. If the current approach to Talmud study is (perceived as) grounded in the formal arrangement of the text, any subsequent alterations to the layout break the interface that allows the student to experience the text. This is the religious version of the argument against ebooks: "real" books feel more like reading, "real" books smell like books. That is: the

affective experience of reading is linked to the interface. Change the interface and the affects disappear. As this chapter hopefully demonstrates, the process of remediation does not destroy affect, but it does transmute it. Change the interface and the affects as well as the experience of experiencing them change. In the next chapter, I turn to the digital Talmud to examine how it treats the dual legacy of remediation and standardization carved out for it during its printed history.

# A Guide to the Layout of a Talmud Page

**PAGE** **TRACTATE NAME** **CHAPTER NUMBER** **CHAPTER NAME**

**[6] EIN MISHPAT, NER MITZVAH:** (Heb., 'Well of Justice, Lamp of Commandment') Two indices compiled by R' Yehoshua Boaz in the sixteenth century. These provide references to major Jewish law codes that report authoritative rulings on topics covered in the Mishnah and Gemara. External works referenced in this way include Rambam's (12th c., Spain and Egypt) *Mishneh Torah* (Heb., Repition of the Law'), the *Shulkhan Arukh* (Heb., 'Set Table') of R' Yosef b. Ephraim Caro 16th c., Israel), the *Arba'ah Turim* (Heb., 'Four Rows') of R' Ya'akov b. Asher (14th c. Spain), and the *Sefer Mitzvot Gadol* (Heb., 'Great Book of Commandments' of R' Moshe b. Ya'akov of Coucy (13th c, France).

**[9] OTHER COMMENTARIES:** Various other commentaries appear in the margins of a printed page of Talmud. None of these minor works cover the entire Talmud, so different tractates include different commentaries in this area. Among these are the comments of Rabbenu Chananel (11th c., Tunisia), the *Sefer haMafteah* (Heb., 'Book of the Key') of R' Nissin (11th c., Tunisia), *Tosefot Yeshanim* (Heb.: 'Additions of the Ancients') 13th c. France and Germany), the *Mainz Commentary* compiled by the students of Rabbenu Gershom b. Yehudah (11th c., Germany), the *Tosefot Rid* (Heb.: 'Additions of the Rid) of R' Yesheyahu diTrani (13th c., Italy), and the *Shittah Mequbbetzet* (Heb: 'Gathered Interpretation') of R' Bezalel Ashkenazi (16th c., Egypt and Jerusalem).

**[4] TOSAFOT:** *The Tosafot (Heb., 'additions') are medieval commentaries on the text of the Talmud composed mainly in the twelfth and thirteenth centuries. The Tosafot are not the product of a single author or school of commentators, but are rather the work of a variety of talmudic scholars living mainly in France, Germany, and Spain. While Rashi's comments focus on the plain meaning of the text, the tosafists tend to concentrate on analysis of difficult passages, exploring issues, contradictions, and problems raised by the text of the Gemara. Often the Tosafot approach a subject using the logic and style of inquiry of the Gemara. Occasionally Tosefot address an interpretation or explaination offered by Rashi to examine it more thoroughly or to present an alternative approach to the subject. On a printed Talmud page, the comments of the Tosefot are set in a semi-cursive typeface known as 'Rashi script,' and they always appear immediately adjacent to the Mishnah and Gemara in the large block of text positioned opposite Rashi's commentary.*

**[1] MISHNAH:** The Mishnah (Heb., 'repetition') is the primary record of the teaching, decisions, and disputes of a group of Jewish religious and judicial scholars, known as *Tannaim*, who were active from about 30 BCE to 200 CE, mostly in the areas now known as Israel and Palestine. Originally transmitted orally, the Mishnah was redacted into its current form and committed to writing around the year 200 CE by R' Yehudah haNasi. The language of the Mishnah is Hebrew. The Mishnah is divided into sixty-three 'tractates,' which are organized into six 'orders' according to their subject matter.

**[2] GEMARA:** The Gemara (Aramaic, 'study,') is an analysis of and expansion upon the material presented in the Mishnah. Taken together, the Mishnah and Gemara make up the Talmud. The Gemara records the oral discussions of a group of scholars, known as *Amoraim*, who were active from about 200 to 500 CE, in the areas of present day Iraq, Israel, and Palestine. These discussions often center around statements of the *Tannaim* and are structured by the anonymous voice of a redactor (or group of redactors) known as the *stam* (Heb., 'plain' or 'unattributed'). There are two versions of the Gemara. The *Yerushalmi* (also known as the 'Jerusalem' or 'Palestinian' Talmud) was compiled in what is now northern Israel around 400 CE. The *Bavli* or Babylonian Talmud was redacted about a hundred years later in the Jewish communities of Mesopotamia. Traditionally the redaction of the *Bavli* is attributed to R' Ashi and his student Ravina. The *Talmud Bavli* is the more commonly studied of the two and is considered to be more authoritative when the two offer different legal rulings. The primary language of the Gemara in both versions is Aramaic, although quoted material in Hebrew is common (mostly from biblical texts or earlier *tannaic* material), and words in Greek, Latin, or other languages occasionally occur. In literary form, the Gemara is a complex combination of legal debate, case law, legend, textual analysis, and philosophical inquiry. Its subject matter covers nearly every imaginable facet of ancient Jewish life, ranging from religious, civil, and criminal law to biblical interpretation to speculation about and investigation of the natural world.

**[3] RASHI:** *Rashi (an acronym for R' Shlomo Yitzchaki) was an eleventh century scholar active in France. Rashi compiled the first complete commentary on the Talmud. His commentary focuses on helping students understand the plain meaning of the text. Both the Mishnah and Gemara are written in a brief, terse style, without the use of punctuation or vowel markings. Rashi's comments are therefore directed toward helping readers work their way through the text and understand its basic form and content. Rashi also offers explanations of unusual or rare vocabulary and concepts and occasionally indicates preferred readings in cases where manuscripts differ. Rashi's commentary is always set in a semi-cursive typeface called 'Rashi script,' is positioned on the gutter side of a printed page of Talmud.*

**[7] TORAH OR:** (Heb., 'Torah is Light') Compiled by R' Yehoshua Boaz (16th c., Italy), this index provides citations for biblical references.

**[5] MESORET HASHAS:** (Heb., 'Transmission of the Six Orders') An index compiled by R' Yehoshua Boaz (16th c. Italy), later expanded by R' Yesheyahu Berlin (18th c., Germany), *Mesoret haShas* provides cross references to similar passages elsewhere in the Talmud.

**[8] GLOSSES:** Most modern printed Talmud editions include short definitions, comments, emendations, and cross references from a variety of scholars active during the 17th through 19th centuries. Among the most important of these commentaries are those of R' Eliyahu b. Shlomo (the 'Gra,' or 'Gaon of Vilna,' 18th c., Lithuania), the *Hagahot haBah* (Heb.: 'Commentaries of the Bah') of R' Yoel Sirkes (17th c., Poland), the comments of R' Yeshayahu Berlin (18th c., Germany), and the *Gilyon haShas* (Heb.: 'Marginalia on the Six Orders') of R' Akiva Eger (19th c., Germany).



Figure 4. An annotated Talmudic layout with each text replaced with an explanation of its function. Released under a Creative Commons license by Joshua Parker.

## Chapter 2: Sacred Text Boxes and Holy Networks: The Talmud in the Age of the Digital Book

This chapter begins one century after the previous one ends, taking up the theme of Talmudic remediation during the late 20th and 21st centuries. In the previous chapter, I discussed how the format and design of the Talmud directed its readers and used the spatial organization of the page to construct the experience of studying it. The Talmud's design was standardized by the early 20th century and the experience of Talmudic learning was codified through the combination of pedagogical practice and interface design. The digital revolution, such as it is, purports to provide an opportunity to reinvent the book—an argument that is rehashed over the pages of the Talmud later in this chapter—but that opportunity is not necessarily seized. While a number of digital editions of the Babylonian Talmud have appeared in the past twenty or so years, many of these editions make few if any changes to the layout elements that were so innovative during the early days of print. Instead of simply passing judgment on these choices, this chapter sets out to understand those choices within the larger context of this text's development, at which point I will feel justified in passing judgment. Given the technological affordances available, what other, experiential factors influence the shape of the digital editions of the Talmud and how are those factors tied in turn to the interface's capacity to make affective meaning?

To answer this question, I look at different editions of the digital Talmud, some of which retain the layout of the Vilna page and others that jettison the traditional layout for one designed for the screen. My aim is to understand and interpret the ideologies behind these interface decisions; rather than evaluating them along a scale of "good" or "bad." I see design choices and layout possibilities as the tools by which the digital book makes its concerns clear to the reader. Like the printed version, the digital book uses the form of the text to script

an interaction that produce specific kinds of experiences and gestures towards the issue that appears at the heart of these remediations: what is at stake in how these texts are made accessible? As the previous chapter argues, the Talmudic interface changes in response to problems of accessibility. The text was written down, printed and standardized in part because of increased emphasis on Talmud study and fear that, without these developments, the text would disappear. The digital editions take up the same question: how can the book make the experience of Talmud study accessible? The term accessible is a loaded one: it covers both simple questions of whether the text is easily and perhaps freely available and more complex questions such as whether a given reader can understand the text, and according to which tradition of study. The interfaces of the digital Talmud that I go on to discuss are caught up in this question of accessibility, but their approaches vary wildly. To understand them, I turn back to the experiential element of the interface, looking at how each design is predicated on creating a specific Talmudic experience. I take my work in the previous chapter and look at how the interfaces of the digital editions of the Talmud perpetuate the affective valences of the original, mediate between the pressure to maintain the Vilna page and the desire to create new and innovative forms that might better facilitate study, and jettison elements of the traditional experience in favor of wider reach. In short, I look at the forces acting on the digital Talmud that dictate how it engages with its reader.

Beginning with Artscroll Publications' iPad edition of the Babylonian Talmud, I explore the inherent paradox in utterly altering the underlying makeup of the page in order to produce a book that looks and, in many ways, functions exactly like the page it replaces. Artscroll provides one approach to accessibility; their edition is predicated on the assumption that lack of training should not serve as a barrier to experiencing the words of the Talmud and

the traditional experience of the page. In contrast to Artscroll's approach, other editions of the Talmud privilege making the text itself available at the expense of preserving the traditional page. These editions focus far more on the accessibility of the text, jettisoning the layout in the process. Some of these editions, including the one that garners most of my attention, attend to the layout in other ways as they design an interface that mediates between the affects of the original and the possibilities of digital presentation. As with all mediations, this attempt is successful only to a degree. In understanding the ways that media history, context, and affects shape the digital Talmuds, the Talmud also serves as a case study in the forces that effect the development of the digital book.

**I. Artscroll's Digital Talmud and the Affects of Translation**

In my previous chapter, I mentioned that, over the course of the 20th century, the 1880 Romm edition of the Talmud known as the Vilna edition became synonymous with the Talmud itself. Though previous editions of the Talmud followed roughly the same layout—the central column of text surrounded by the same major commentaries—editions post-Vilna were all nearly perfectly identical. Metonymically speaking, the Vilna page is now the Talmud and any printing that shifts away from it is seen as deviating from the norm. With one exception, every recent print edition of the Talmud has either photocopied or recreated the Vilna page (see footnote 41 later in this chapter for what happened to that exception). The design of the interface that promotes SEEKING and hypertextual reading is thus inextricably linked to this one instantiation of the Talmud. The experience of Talmudic scholarship and the SEEKING that constitutes the emotional experience of studying Talmud have become tied, not to the page as an idea, but to this exact page.

Implied by this association between text and experience is the following: the less than

150 year old Vilna layout *is* the Talmud and retaining that layout is integral to maintaining traditional Talmud study. Were one to decontextualize the text and change the page's composition, the reader could not recreate the traditional reading practices that allowed him to use the text as the source and starting point for all rulings in Jewish law. In addition, such a view would consider the emotional experience of the text to be irretrievably lost. If I followed this approach to its logical conclusion, I would be forced to say that the blend of SEEKING and sanctity that defines Talmudic study is not merely engendered by the page, but inextricably linked to it. Traditional form is the basis for traditional practice: remove Rashi and Tosafot and the references to medieval commentaries and you break the chain of tradition that connects modern day rulings with the giving of the ten commandments at Sinai, something that the Oral Law has worked to maintain for two millennia.

Such statements verge quickly into the realm of the hyperbolic. I do not think anyone believes that switching Rashi from the inside of the page to, for example, the left side of the page on both recto and verso will bring about the downfall of 1800 years of tradition. But the rhetoric is, once again, familiar to those who spend time looking into any large-scale alterations in forms of media and transmissions of knowledge. And while it is tempting to dismiss such concerns out of hand—writing, after all, did not bring about the downfall of philosophical conversation, nor did printing forever ruin our relationship with books—these concerns do not disappear because they are wrong, but because we move beyond them. Printing did fundamentally change our relationship with texts as it destroyed the connection that comes from systematically rewriting codices. In return, we gained a culture of reading broadly and a knowledge economy where individuals could own libraries. The digital turn has the same tenor of certain losses replaced by certain gains. So the question facing

publishers of the Talmud in the digital age is not whether changing the text will alter the reading experience and forms of scholarship, but whether said reading experience and scholarship is worth maintaining and what the cost is to digital innovation.

Based on the digital edition produced by the Artscroll Publishing Press, their answer to whether the exact reading experience is worth maintaining is a resounding yes. Artscroll launched their digital imprint in 2012 with the Babylonian Talmud, a carefully re-typeset version of the Vilna edition that includes an English elucidation of the original text that is roughly three times the length of the original page. In redesigning their original elucidation, which was published in the 1990s, they adapted the codex into a digital book that is a mix of 16th century printing practices, 19th century thoroughness and what one might call 21st century accessibility were one not familiar with the hypertextuality of the original codex. Instead, I shall call it 21st century encoding. Artscroll's adaptations follow in illustrious footsteps: their elucidation of the Talmud is meant to further obviate the need for any text outside the text. The Vilna edition was a comprehensive text for any scholar. The Artscroll edition is equally comprehensive, but it speaks instead to a layman who is only passingly familiar with Jewish law and who may not even read Hebrew, much less Aramaic. If Rashi democratized the Talmud and Deborah Romm standardized it, Artscroll made it popular.

Artscroll's willingness to make the text accessible is predicated on preserving the authenticity of the text in the process. On the level of design, this digital book is a prime example of trying to have it both ways. When they adapted the text for the iPad, they created an application that hews as closely as possible to the appearance of the printed volumes. Originally released for the iPad, version 2.0 of the Artscroll Digital Library was designed to work on the iPhone as well. The digital book retains the exact appearance of the Vilna page

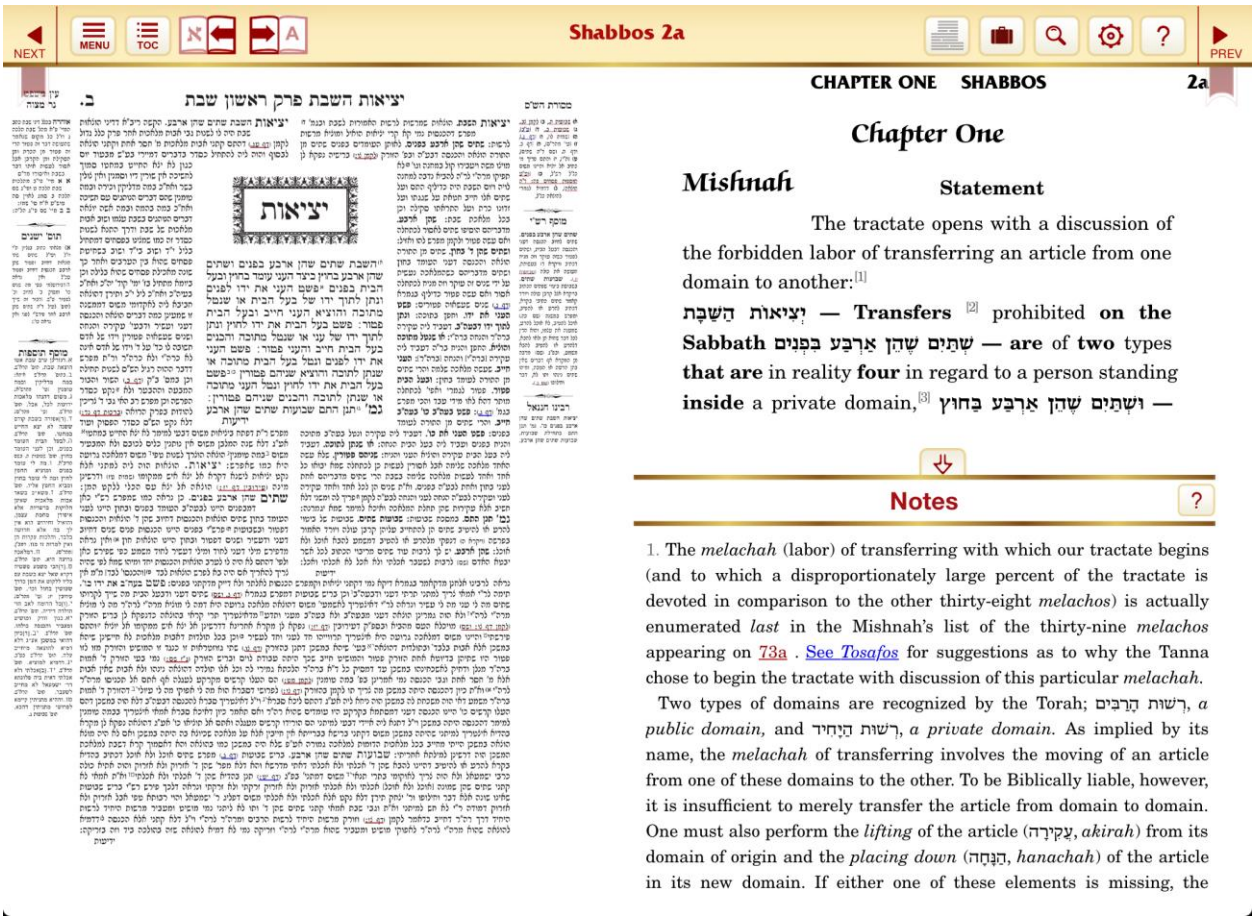


Figure 5. The Artscroll digital edition of the Talmud with Vilna page and elucidation placed side-by-side on an iPad 4 in landscape mode. The page looks very similar to the printed Artscroll edition

with the subtle inclusion of blue lines denoting hyperlinks underneath references to other pages in the Talmud. There is, of course, a setting to turn those off. The text was already hyperlinked; Artscroll simply added in the technical linkages. When held in "landscape mode," the digital book looks exactly

like its printed counterpart with Artscroll's elucidation opposite the Vilna page. The elucidation even switches sides so that the recto pages in the original Vilna edition are never presented as if they are on the verso. It is, in many ways, a perfect copy of the printed text.

Aesthetically speaking, the book is unchanged. When placed next to Artscroll's

printed elucidation of the Talmud, there is little difference between what the paper codex and the digital book can do. After all, the aesthetics of digital highlights and hovering post-it notes are screen-based reproductions of historical and contemporary note-taking practices,[33] not to mention familiar as specific pedagogical practices within the Jewish educational community. Students are often trained to parse the complex and unpunctuated page of the Talmud by using different colored highlighters to identify different portions of the sugya (Fig. 6 provides an example of the author's copy of the Talmud from when she was in high school). The printed elucidation was designed to maintain the integrity of the Vilna page and the digital version continues that tradition.

From the perspective of the Talmud student, condensing 37 volumes onto a device that weighs less than two pounds could be reason enough for a digital edition, and Artscroll can successfully justify its existence through that convenience alone. Moreover, the digital volumes are ten to twenty-five dollars cheaper than the printed copies, based on the listed price on Artscroll.com. And for the layman who has chosen to follow the practice of *daf yomi*—studying one folio each day to complete the entire Talmud after seven and a half years—the digital edition can be an invaluable resource that turns what used to be an intensive study session into a way to fulfill the commandment to study Torah during a morning commute.[34] The *mitzvah* or commandment to study Torah is, as noted in the

[33] See Ann Blair's *Too Much to Know* for a comprehensive discussion of note-taking during the early modern era

[34] As of the last completion of the daf yomi cycle, there were two classes given each morning in specific cars on the Long Island Rail Road. The role that new forms of media played in proliferating daf yomi over the past two decades—from simplifying the process of creating audio lectures to digitizing the pages and, of course, making these resources easily available through digital distribution—is treated in Shamma Friedman's article "The Transmission of Talmud and the Computer Age" and is beyond the scope of this dissertation.

previous chapter, treated in rabbinic texts as the equivalent of all other commandments. Thanks to the increased emphasis on Talmud in the yeshivas, Talmud study represents the ideal form of Torah study for many. With the right resources, *daf yomi* is both accessible and scheduled, rather like signing up for a regular exercise class rather than planning one's own regimen. Artscroll has a special subscription for *daf yomi* students where they can pay ten dollars per month for the next thirty days worth of folios.[35] The digital edition is one third of the price of the cheapest printed version of Artscroll's text, it is portable and it is convenient. As Artscroll advertises in their promotion video for the digital edition, the application "allows hundreds to study like never before."

From the perspective of the scholar, however, the Artscroll Digital Talmud seems much less interesting. In his article on "The Transmission of the Talmud and the Computer Age," Shamma Friedman speculates on how the digital age might change the format and dissemination of the Talmud. He envisions large corpora that, with a single click, show the reader all the related texts that both are referenced by and comment on a single line. He imagines an archive of high quality manuscript digitizations so scholars can identify and triangulate variant readings to reconstruct original texts (152-3). In Friedman's view, the accessibility provided by the internet has little to do with accessing the text itself. A digital Talmud means that no reader will ever miss crucial information because the book required is not in her library. The digital Talmud is comprehensive in a way that a paper book like the Vilna edition could never be. With that in mind, the digital Talmud should favor the hyper

[35] Mathematically speaking, this is only a good deal if one does not expect to actually get through all of daf yomi. After seven and a half years, one will have spent slightly over $900 for a set that is available in bulk for $600. Given that most people give up about six months into the project, the subscription is not a bad bet for the wary. Different levels of commitment are part of why Artscroll is so successful at ranging from the scholar to the dilettante.

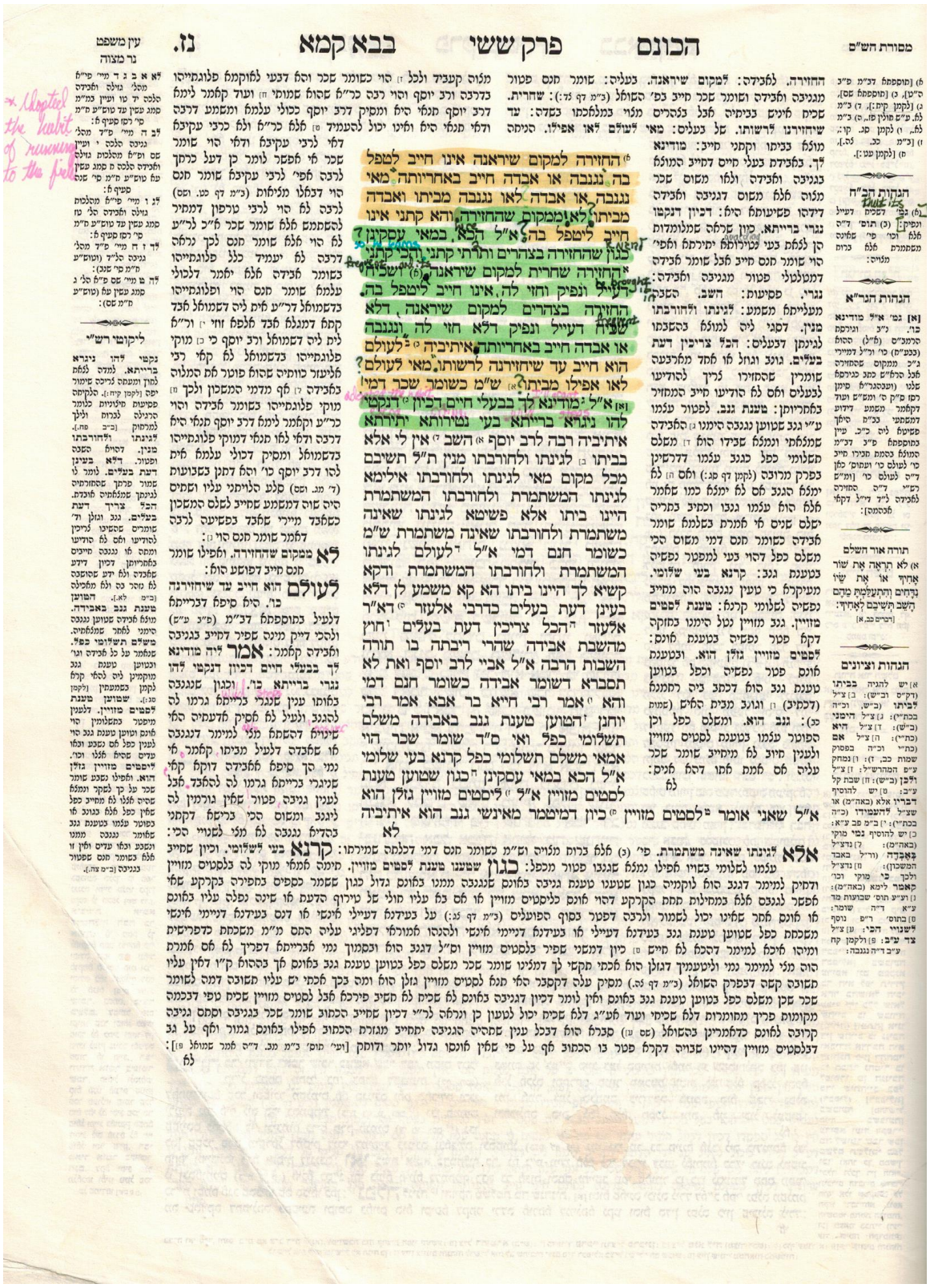

Figure 6. The author's highlighted and annotated page of Talmud. From 2003.

reading cultivated by the printed version, redesigned for ease of exploration and for the search practices of the 21st century. Artscroll did not build this digital book. They included no connections that were not already present in the Vilna edition, they provide no means of accessing books that are not part of their library and they emphasize continuity of layout rather than imagining, as Friedman does, how to innovate on format.

As with Talmudic scholarship, so too digital scholarship. Though a digital book, the Artscroll digital edition of the Talmud is not a particularly interesting work to a scholar of new media and for much the same reasons as it is uninteresting to the Talmudic scholar. The digital book does not innovate on the formal design of the book. Johanna Drucker, in her article on "The Virtual Codex: From Page-Space to E-Space," draws attention to the role that digital book design should play in facilitating new modes of thinking. In her view, most digital books merely recreate the old in a new medium. Artscroll's application commits many of Drucker's cardinal sins by mimicking the aesthetics of the printed codex without adding anything new to the possibilities of what she calls "the book program". The book object has a function: to make reading spaces available. Virtual books, according to Drucker, should take advantage of new reading spaces and create new formal properties that, in turn, offer new reading experiences.

Artscroll, on the other hand, puts their effort into retaining the feel of the traditional page. Their use of a tablet device, rather than a computer monitor, only emphasizes that commitment. For the next two paragraphs, I take that commitment at face value, reading the book's use of the iPad interface as I believe its designers intended it to be read by the reader. I read as an interface designer, one engaging with the twin concerns of transparency and user experience. A transparent interface is one that recedes from the view of the user, one that just

works. And user experience, as Lori Emerson observes in *Reading Writing Interfaces*, shows more concern with scripting the encounter between user and device in such a way that the device dictates not what the user should do, but constrains all possible moves that the user can make. It is, I believe, impossible to engage with the book without first articulating the encounter as it is designed to occur. I will return and interrogate this brief description of the interface as soon as I am done explaining it.

The touch interface responds to the act of placing one's fingertip on the screen and doing so will either call up the desired elucidation or, if the text under one's forefinger is referenced elsewhere in the Talmud, bring the reader to that page. The reader's finger works almost exactly like the finger used to mark one's place while looking elsewhere on the page or the book. The same action on paper and on screen causes the same results, albeit through wildly different mechanisms. Neither of these tactics are surprising; the finger is the naturalized method of keeping place in a book and Apple's goal in building the iPad was to create a tablet that relied entirely on the intuitive use of finger movements rather than requiring a stylus that, according to Steve Jobs, no one wanted anyway[36]. Artscroll built their digital book platform first on the iPad despite the scarcity of such objects compared to, say, laptop computers or even smart phones. Based on their marketing videos, that was a deliberate choice to keep everything about the Talmud experience as close as possible to reading a book, including the tactile behavior of the reader. Friedman talks about the "two finger" system for reading the Talmud, by which he means keeping one's finger on one's place in the Gemara and another finger on the line of commentary. The multi-touch interface

[36] This was before Jobs died and his successor, Tim Cook, released the Apple Pencil. Apparently some people wanted a stylus after all.

of the tablet screen, in contrast to the mouse that can only be in one location at a time, was built to handle this exact kind of tactile contact.

In addition, the shape of the tablet is similar to the shape of the book, a point that ereader retailers reiterate constantly in their marketing (Wu 8). In this respect, tablets feel like books because the reader holding the tablet positions her body in a similar fashion to the reader holding a book. The embodied experience of reading on a tablet more accurately replicates that of reading with a codex than that of reading on a computer. It resembles the reader's posture that Manuel Portela takes as paradigmatic in Matisse's *Interior with a Young Girl (Girl Reading).* "Matisse's painting seems to capture the reader's immersion in the virtual imaginary space created by the book…The act of reading is shown as an embodied system constituted by eyes, hands, body, head, codex, and the processing of signs" (Portela 15-17). The readerly stance towards reading is not just an ideological one, but a physical one. The unwieldy Talmud, often laid flat on a desk or balanced at an angle atop a book stand, provides a model for the tablet that sits flat on a desk or is supported using one of the cover-stands with which it is so often sold. The tablet user most closely mimics the hunched posture of the student bent over the book and the ergonomically conscious scholar seated before the classic book stand. While one can read in more relaxing positions, arranging one's hands in such a way that the page remains visible (either because bound books have a tendency to close or touch screens have a tendency to respond to inadvertent gestures) requires a different set of embodied arrangements. The body reading a book at a desk and the body reading (on) a tablet at a desk are nearly identical. The tablet platform was not chosen because it was the best fit for a digital Talmud. It was chosen because it leant itself best to creating the most codex-like book and the most study-like reading experience.

Artscroll and the tablet industry appear to prioritize and advertise reading as something that happens to the reader, an uncritical encounter with an object that dictates the terms of said encounter. From Artscroll's promise that the digital edition of the Talmud seamlessly recreates the page, to Apple's promise that their tablet "just works," the rhetoric is unanimous that the best part of this device is how it disappears. The iPad and its operating system provide an apparently ideal interface for this reading experience as the device simply fades away and lets the content speak. The glass touch screen is a transparent portal to the world of the content. In the spirit of a familiar phrase, I want to differentiate between transparent as in glass and transparent as in clear.[37] The iPad is transparent as in glass. It was built to be self-effacing, to provide the illusion that the user is seeing through it to the content. In contrast, transparent as in clear refers to the accessibility of the object, one whose inner workings are made clear to the user. Emerson decries this inverse relationship between the computer and the user where, as the former gains power, the latter is made powerless. "All of these interfaces share a common goal underlying their designs: to efface the interface altogether and so also efface our ability to read, let alone write, the interface, definitively turning us into consumers rather than producers of content" (Emerson loc. 304-5). The effacing interface does not simply hide itself; it hides the user's agency. Compared to what one can do—and see—on a computer, the iPad is extremely limiting. The reader has no access to the underlying code. There is only a carefully orchestrated experience that brings the codex to the forefront of the reader's attention.

[37] The phrase in question comes from the Free and Open Source Software movement, which calls for software that is "free as in speech, not free as in beer." The latter is software provided at no charge. The former is software that is visible, unrestricted and not designed to be locked down through copyright measures.

If the transparent glass of the interface also serves as a barrier to understanding, then transforming the iPad into a transparent-as-in-clear interface that lets the reader see the inner workings of the digital book is an admittedly daunting task. In appendix 1, I have provided a short description of the two different methods I used to extract the contents of the digital book to my computer and explore the some of the underlying [38]. Only one of those methods involved "jailbreaking" the iPad and changing the original operating system into one that provides more access for the user.[39] The tradeoffs in clarity are formidable; source code is not known for being user friendly and I am not trained as a developer. However, since the artifact at the heart of this chapter has been the Talmudic page as interface, it seemed appropriate to examine that page not only as displayed on the screen, but also as encoded into the book.

Artscroll emphasizes that their text is not a translation of the Talmud into English: translations of the Talmud are forbidden according to some interpretations of Jewish law (Bleich 317, 319). Rather, what they have provided is an elucidation of the Talmud, meant to be studied in tandem with the original. Rashi, after all, elucidated the Talmud and was praised for it. The project of creating the digital edition of the Talmud, however, is a translation into a new language, with all the difficulties and inaccuracies that term entails.

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[38] The payload contents will inevitably differ between applications. Assuming the three applications I examined for this project are representative, the contents will contain all the images and textures needed to display the application properly, all the stylesheets necessary to correctly format textual content, the Javascript files necessary to run the actual application, and the .nib files necessary to run an application on an iOS device. In other applications, the programming language of choice might not be Javascript, but the overall contents of the payload will be similar and will consist of everything needed to generate the application's interface.

[39] As far as I can determine, jailbreaking the iPad voids the warranty. It is legal in the United States to jailbreak an iPhone (or at least it was at the time that I jailbroke an iPad, which the US copyright office has refused to rule on). I used a spare iPad to do so, both in order to compare a jailbroken tablet with an "intact" one and because I am leery of altering the operating system on a device that I use for research and whose warranty I might still need.

Some of the translations are trivial, such as defining the distance between text boxes in pixels rather than with a printing press. Others are slightly more complicated. The digital pages of the Talmud are eXtensible Markup Language (XML) versions that identify sections of text as classes such as “talmud,” “commentaries,” or “annotations”. These classes have different styles associated with them that dictate how they are rendered by the application and distributed on the screen in a way that remakes the distinctions found in the original text. The stylesheet performs the same job as the original typesetters of the Vilna page; it tells the application how to arrange the text so that the reader can see the familiar signifiers of font and layout. Technically speaking, the layout appears to remain inherent to the content, but is entirely divorced from it.

This division of form and content as encoded into the text allows Artscroll to include additional features that add to the signifiers of the original text without “defacing” the traditional page. The digital edition includes tags that identify individual portions of a sugya as statements, questions, answers, inquiries, and proofs, all of which can be made visible on the page as colored highlights (fig. 7). The page itself looks pristine; it seems as though all these elements are built in on top, encoded into the stylesheet that tells the digital book how to display the information it contains. And yet the XML page of the Talmud must contain these tags as specific XML classes in order for the information to display properly. The stylesheets entirely lack these tags (or anything that could be masquerading as these tags) so they must be on the XML sheet itself, part of what is now the digital page of the Talmud and hidden from the readerly eye until they are summoned into existence. The digital book’s ability to hover the translation above the text is also predicated on the proper encoding of the page and the way that the stylesheet uses the “firstword” of each phrase to match traditional

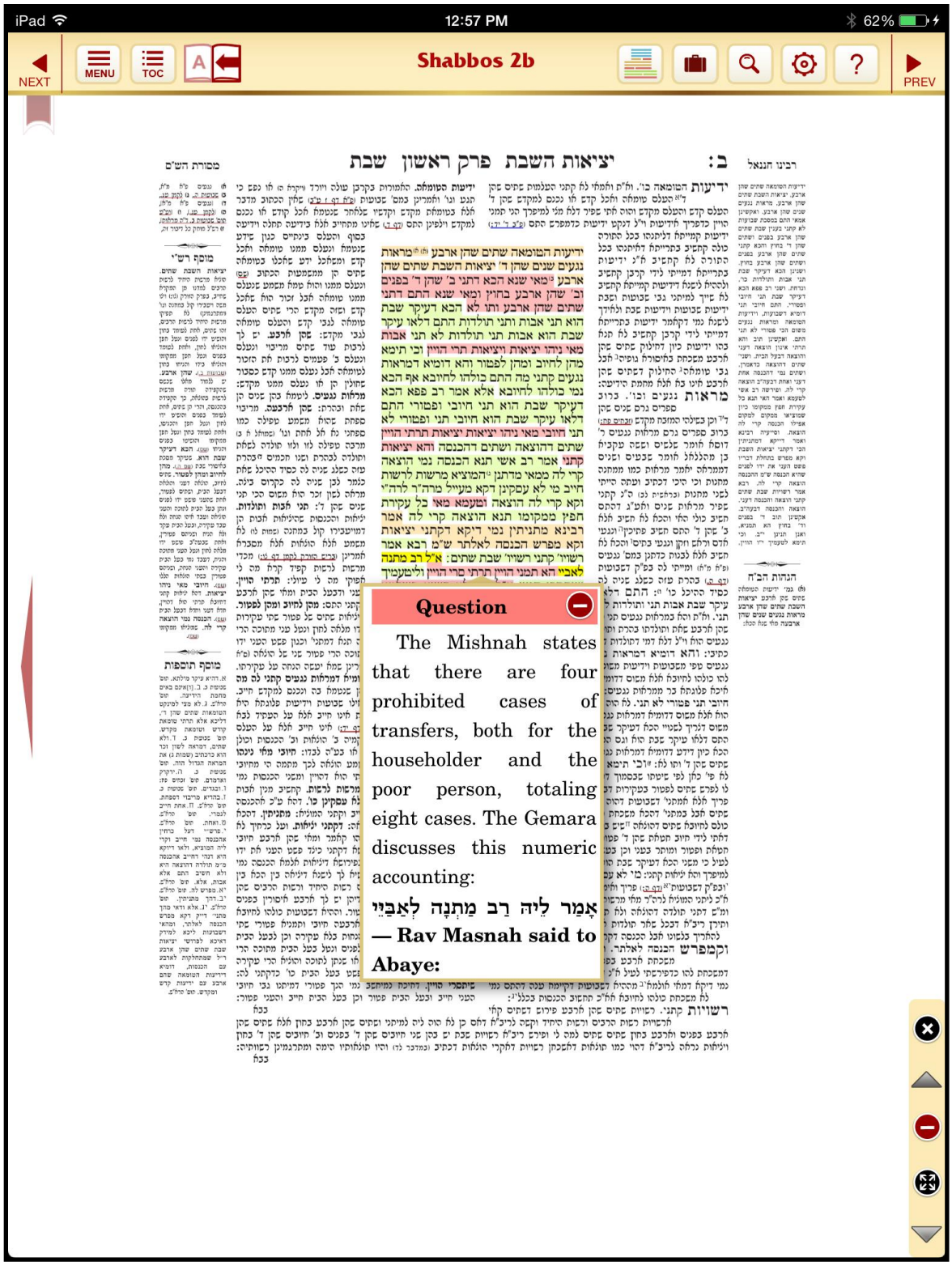


Figure 7. Screenshot of Artscroll's digital Talmud with highlights and pop-ups. From April 2015

text and English elucidations. These additions are meant to seem like extras, like post-it notes in the margins that can easily be taken off, while the displayed page hides that Artscroll has made the largest changes to the format of the page since the shift from scroll to codex.

Artscroll's entire project of rewriting the Talmud in code depends on the software's ability to render change invisible, to change from transparent code to transparent glass. The Vilna page must include new ancillary aids and, at the same time, must remain the Vilna page. These ideological constraints drive Artscroll's design process and place it entirely outside the realm of electronic literature interested in experimenting with form. Said constraints also place Artscroll outside the realm of scholarly experimentation. The elaboration of the page, rather than the reinvention of the page in a form better suited to the digital book, came about because of the importance of affect to the Talmud rather than an interest in the possibilities of the book. There are two specific emotions at play, both of which have a long history in the development of the Oral Law. The first is SEEKING and the role that the digital edition plays in recreating exploratory excitement for the reader. The second is the same affect found in the Midrash describing Mount Sinai—religious power and fear experienced through mediation that I argue is deserving of its own name under the feeling of "sacredness". Having looked at the digital edition of the Talmud through the lens of digital media, I want to turn to the affective experience and, rather than either dismissing the experiential for the way it constrains the reader or lauding the ability of the machine to affect us, examine what these affects can tell us about the book. Affects, not just affordances and contingencies, determine the shape of the media, and so my reading will attempt to address how these affects gave us this book.

The biggest concern with the printed Artscroll edition as expressed to me by those

responsible for training students in its mastery is that it over-simplifies reading the Talmud.[40] The negotiations of meaning and the exploratory nature of the text are lost when the contents are laid out and explained as a coherent narrative. Artscroll prevents the student from becoming a scholar. One cannot progress from reading the explanation in Artscroll to studying the Vilna page; the straightforward narrative presented in English is difficult to map onto the complicated network of meanings in the Talmud. And the division between the two pages, even though it is no more substantial than the gutter of the page, is wide enough that the reader who finds himself reading in English is unwilling to cross back to the Talmud even when he is not unable to do so.[41] In affective terms, Artscroll removes the impetus to seek explanations and, in doing so, deprives the reader of the SEEKING associated with the Talmud. While the text does not become boring, the layout loses its affective power. The reader is no longer performing the text, no longer hyper reading and no longer engaging with the text as a dialogue. Though the page has been frozen for over one hundred years, the printed elucidation runs the risk of making it static.

The application, through judicious design decisions, aims to restore affect to the text. The contents of the XML page are critical to this project, for they allow the reader to scaffold the Vilna page based on her level of expertise. The tags for "question" and "answer" aid the reader in parsing the text without providing too much information about the content. As the

[40] My thanks to several rabbinical students and Talmud teachers for taking the time to share their views on teaching Talmud, SEEKING and Talmud study, and Artscroll. These occurred as informal conversations rather than formal interviews.

[41] Several Talmud students mentioned this problem independently when I brought up Artscroll's edition; they would start out determined to use the Vilna side and only look at the elucidation when they were completely flummoxed, but often found themselves gravitating to the simplicity of the English and, after doing so, found it much more difficult to recall what they had studied that day.

Vilna page is unpunctuated, dividing the text by function gives the reader some idea of where the phrases end and how the text flows, even though punctuation necessarily constrains interpretation. The digital book has also solved the problem posed by the gutter. Given that most readers will not switch back to the Vilna page once they have crossed over to the English side, the application provides small snippets of the elucidation on the Vilna page. The reader can tap on a phrase in the Talmud and a pop-up appears with just the elucidation for that phrase. Invoking and dismissing the little hovering text box is significantly faster than loading the English page, encouraging readers to only look up what they don't know and, otherwise, stay with the Vilna page. It also encourages them to at least begin by reading and deciphering the original as there is a slight effort involved in seeing the translation. The exact balance of effort to reward is a critical design feature. Too much effort to view the translation and the layman would no longer bother with the Vilna page. Too little effort and the results are the same; the reader will rely entirely on the translation without ever looking to the original page. Whether Artscroll hit that balance is still unclear.

Artscroll extended the democratization of the Talmud from all scholars to all readers. They achieved a digital edition that expands on the accessibility of the printed codex rather than innovates upon it. The move from two-dimensional page to three-dimensional interface opens the Talmud to less-accomplished students without necessarily sacrificing the SEEKING that defines the affective experience of Talmud study. I grant that the student uninterested in hyper reading or unfamiliar with Hebrew can easily bypass the traditional page and skip the experience of SEEKING, but the digital book at least makes the hyper reading experience as easy as avoiding it, in contrast to the design of the printed edition that places hyper reading at a disadvantage.

Though the digital edition does successfully remove the disadvantage of the print version, the imaginative researcher, such as Shamma Friedman, might still find himself deeply disappointed by what the book cannot do. Friedman calls for an innovation in form, a change in design that does not simply recreate the past, but innovates on it and makes it better. Such a scholar would do best to look outside of Artscroll for such innovations, as I will do in the next section of this chapter, but the amount of work that Artscroll put into designing a digital edition of the Talmud that looks exactly like the printed page leads back to the question implicitly posed by Friedman and Drucker. What is gained by refusing to innovate on form? To phrase it differently, given that the possibilities of the computer interface provide hyper reading and SEEKING through methods other than the traditional page, why keep it?

While a simplistic answer might involve a rousing chorus of *Fiddler on the Roof*'s "Tradition", the more complicated response does rest in the drive to hold fast to a specific experience. The affective impact of SEEKING is not the only emotion related to the Talmud. The Oral Law is also a sacred text, which means that it is a text that should evoke in its readers the feeling of encountering something sacred. As I discussed in the previous chapter, sacred feelings develop out of a strong affective experience that is held somewhat at a distance—like Burke's sublime in this respect—but that offers a (often ritualized) way of coming close. As an example of how Jewish practice creates affect, I submit the ritualized behavior towards the Torah, the calligraphed scroll of the Written Law. The Torah scroll is a tangible object that is treated with reverence, dressed in finery, is never allowed to fall, and cannot be touched without some barrier between the scroll and the skin. The Torah scroll's sanctity comes from its place as the physical manifestation of God's word that is ritually held

at a distance, yet taken out and read to preserve a sense of closeness. The sanctity of the Talmud is not bound up with the physical object in the same way. It is, however, connected to the formal layout of the page. The design of the Talmudic page is, for many, more recognizable than the language of the text. The layout of the page evokes the idea of the Talmud and the feeling of encountering a sacred object associated with it. A layout with dummy text still succeeds in making one even passingly familiar with the text think "Talmud". Though there is nothing inherently sacred about the layout, the layout is imbricated in constructing the experience of sacredness because it constructs the experience of the Talmud.

The Talmud is the road down which one travels to access the practices of observant Judaism, but is also a text whose design holds it at a distance. The same design that promotes SEEKING as a part of scholarship also distances the reader from immediately connecting to the text. The reader must work through the text, must create a sense of closeness by working towards meaning deferred. The design does not make the text sacred; religious authority is clear that sanctity is found in the object's relationship with the divine. But the design makes the text *feel* sacred by asking the reader to engage in ritualized SEEKING. The promise of accessing God's word is coupled with a formal design that holds God's word at a mediated distance. The design also points the reader towards the path that can bring the reader closer to meaning and thus to God. Power held at a mediated distance with a proffered possibility of approach is not sacredness per se, but the affective experience thereof.

If the layout is responsible for creating sacred feelings, then the layout itself is sacred by association. As the Vilna edition is reprinted and copied in subsequent editions until its appearance is synonymous with the Talmud itself, the sacred text develops sacred text boxes.

Changing the nature of the page seems to impinge on the sacredness of the Talmud itself. Artscroll's emphasis on retaining this Vilna page stems from a fear of breaking sacred associations and, doing so, alienating their constituents.[42] A cynic might note that Artscroll has opted to preserve the traditional form by breaking with the far older tradition of redesigning the text during periods of remediation. In its clever use of encoded innovation, the digital edition fixed the Talmud to its current form so that any additions to the page, such as the highlighted divisions into specific sections, appear as ephemeral and distinct from the familiar text boxes.

Artscroll differentiates between their additions to the page, which use color and disappear with the tap of a setting, from Boaz's links, which are integral to the page itself and cannot disappear. Their additions are treated similar to highlights and post-it notes and like the material objects from which they take their name and design, the digital versions can be easily removed with little indication they were ever there. They are changes made by the individual to a particular instantiation of a work rather than to the work itself. They do not become part of the work as a whole, they are limited in scope to the individual user and, ideally, can be overwritten, erased and, if necessary, replaced by a pristine copy of the text.

[42] This is not idle speculation on my part. Several years before Artscroll began their elucidation, one of the foremost Israeli scholars of the Talmud, Adin Steinsalz, released a new edition of the Talmud with the traditional text of the Tosafists removed from the outer column and replaced it with his own clear and concise explanation of each section. (It is, I should admit, the edition I turn to most often when I get caught in the mire of Talmudic logic.) Steinsalz also added punctuation and vowelization. For this work, he was praised by many and excommunicated by some of the more right-wing Orthodox factions. In a culture with little central leadership, excommunicating someone has few material consequences, but it remains the highest form of censure. As a right-wing Orthodox publisher, Artscroll serves the communities that excommunicated Steinsalz and could not risk offending them. And, despite not being a member of those communities and having a great deal of respect for Steinsalz's work, even I tend to use his edition for reference and use a reproduction of the Vilna edition as my main text for no better reason than that it *feels* right.

They are designed to look like marginalia, not paratexts. All of Artscroll's elucidations are kept separate from the page itself; the gutter is not just an inconvenience that students find difficult to cross, it is a deliberate barrier that keeps the Vilna page and the Artscroll page as separate entities. The stylesheet for the pop-up elucidation in the digital edition serves the same purpose. Bordered by beige—with color once again signifying that it is no part of the original—the box is rendered with a shadow so that it appears to hover above the Vilna page, always blocking the next sentence in a way that makes it impossible to keep reading until it has been dismissed. The digital book is designed to preserve the appearance of the sacred text. By dividing the page into two pages—one for God's eternal, unchanging words and the other for their own ephemeral additions to it—Artscroll successfully imbues the digital edition with the distance needed for sacredness.[43]

The sacred object held at a distance shares many features with the art object and its aura as discussed by Walter Benjamin in "The Work of Art in the Age of Mechanical Reproduction." Benjamin defines aura, briefly, as "the unique apparition of a distance, however near it may be." He further elaborates on aura using the example of nature. "To follow with the eye—while resting on a summer afternoon—a mountain range on the horizon or a branch that casts its shadow on the beholder is to breathe the aura of those mountains, of that branch" (23). Aura, framed thus, shares much in common with Burke's idea of the sublime in that it focuses on objects mediated by distance. The sublime is the terrible and overwhelming that mutates into awe and astonishment when provided proper distance. Aura is not linked as closely to one affect; it is the affective experience of the thing at a distance.

[43] I do not, unfortunately, have the time or the sociological resources to discuss what separates Artscroll's additions from, say, Rashi's in the minds of their constituents. Suffice to say that canonicity is a problem—in Jewish texts as much as in English departments.

And both, it seems, are not accessible through technological reproduction. The painting of the thunderstorm on the mountain conveys neither the sublimity nor the aura of standing atop a neighboring mountain and watching. The painting's aura and, perhaps, its sublimity as well rest in the brushstrokes of the master who created the unique and irreplaceable object. It would not do to discount the experience of the sublime that comes from being in the presence of a work of art and knowing that one careless shove can send one's elbow into the canvas.

The aura of the Talmud, however, is called into question by the entire process of remediation that we have been scrutinizing. Benjamin claims that the act of reproduction strips the aura from the object by changing it from a singular object set in place and contextualized by tradition into one object among multiple reproductions that has lost its context as it becomes accessible. Once again, a comparison between the intricacies relating to the Torah scroll and the relative absence of such for the Talmud is illustrative. The Torah scroll is handwritten with a quill on parchment before being rolled onto two wooden staves, and covered in embroidered cloth or encased in a filligree container. Each scroll is a unique artistic object, distinct from the mechanically reproduced codices that also contain the text of the Torah. The scrolls are found in museums and in the ark at the front of the synagogue, constantly contextualized by the trappings of the liturgy. They are objects with aura. The printed, facsimiled, and now digitized page of the Talmud is not.

Despite the elegance of the Vilna edition, it is difficult to get around the problem that the Talmud lacks Benjaminian aura. This is not to say that it lacks the experience of the sacred; while aura and sanctity are intertwined and the former can feed the experience of the latter, they are not identical and can exist separately. Still, the sacred as experienced through the Talmud is one that lacks the textual authenticity that accompanies texts with aura. The

most surprising part of visiting the archives at the Jewish Theological Seminary and opening the original Vilna edition was how similar it felt to every other Talmud I had ever opened. Despite knowing that nearly every Talmud I ever used was a reproduction of the Vilna edition that I was actually holding, I was disappointed to discover that the inside of the Vilna edition looked no different. It was just the Talmud. The Torah scroll possesses authenticity; the public readings of the Torah conclude when the scroll is lifted and the congregation recites "This is the Torah that Moses placed before the children of Israel, at God's commandment, by the hand of Moses" (Koren Prayerbook 164, trans. Jonathan Sacks). Religious ritual maintains that authenticity around the Torah. With the exception of an optional celebration when one finishes an entire book of Talmud, there are no real equivalent rituals around the Talmud. Certainly, there is no regular ritual surrounding it and even the celebration lacks the elaborate choreography of a service.

Artscroll, in a solution that I find as admirable as I find it irksome, shifts the location of Talmudic aura and authenticity from the book to the unique and singular layout of the text. In embracing and codifying a sacred format, they have elevated it to the status of authenticity. And the digital edition, in its refusal to alter the familiar page and the distinction it makes between the layout and the additional marginalia, establishes the digital edition as a reproduction that is always pointing towards an ideal, authentic, material page that is not present to the reader. The digital edition lacks aura, but the protected page of the Talmud, reproduced and made safe behind the glass of the touch screen, is meant to have the same basic relationship to the actual page as the poster reproduction of the Mona Lisa has to the painting hanging in the Louvre. Artscroll adopts the affective language of aura and reproduction when presenting its book to its readers. The reproduction is clearly visible

behind the glass of the tablet is close enough for the reader to touch while suggesting that, somewhere out there, the real version of which it is a reproduction exists as well. The culture of technological reproduction teaches the difference between the original and the copy and tells us which one is valuable. While Benjamin is right that reproduction strips aura from the reproduction, the aura of the original in context remains intact. Moreover, culture has crafted means of reinscribing aura into objects. The signed paperback, for example, lets the reader turn a reproduced copy into something original that represents an authentic encounter with the author. The digital edition reinscribes aura onto the Talmud by treating it like the reproduction of an object with aura. From the pristine nature of the page and the effort made to maintain the appearances of the Talmud, the reader naturally assumes that the layout and the Talmud for which the layout is metonymic possesses sacred aura. Strangely enough, this assumption continues to work even after seeing the original Vilna edition.

Leaving aside the problems with creating an authentic Talmud out of whole cloth, I remain irked by the complete lack of affordances found in this digital book. As a reader, I would appreciate an edition of the Talmud that permitted far more radical changes to the page, changes of the sort discussed by numerous proponents of the electronic text, such as Roger Chartier, Johanna Drucker, and Craig Mod, all of whom imagine a digital book that transcends the limitations of the unchanging page. Their ideal electronic text would have infinite space for the reader to make marginal notes—a functionality that was only added a full year after Artscroll first released their edition, edit the text, rearrange matters to suit herself and make new intertextual links. This is the dream presented by Vannevar Bush's memex, which Ted Nelson adopted for his practical albeit mostly unrealized Xanadu, a vision of the future of computing that he outlines in *Dream Machines*. I lament the lost opportunity

here even as I appreciate a design that is more interested in its emotional effects on the reader than on innovative form and creating new resources.

**II. Alternative Futures: Sefaria and Open Sources**

Fortunately, Artscroll is not the only group developing digital editions of the Talmud. Other publishers have taken advantage of the distribution possibilities inherent in the Internet and recognized the fortunate fact that the more important a Jewish text, the more likely it is to have long since passed out of copyright. There are websites devoted to simply making the most authoritative edition of these texts available without any specialized formatting whatsoever, such as mechon-mamre.org, an early endeavor that has been distributing its texts as freeware since 1990 (mechon-mamre.org/about). There are scholarly resources, such as the Saul Lieberman Institute of Talmud Research, that digitize and cross-reference variant editions of the Talmud and its commentaries in order to make academic Talmudic scholarship more accessible and less dependent on location (http://www.lieberman-institute.com). In recent years, new sites have sprung up that are more focused on providing texts as platforms for conversation or for redesigning the experience of studying Jewish texts. For most of these sites, their stated goal is to make the texts they provide accessible. For some, that accessibility is framed as a proselytizing imperative. Once again, Mechon Mamre's about page is a good example. Other sites take their cue from history and frame their mission as pedagogical. The Mercava project, for example, calls itself "the future of Jewish education". In their promotional video, they explain that today's children, who grow up in a world of immediate gratification and technological marvels, will have neither connection to nor interest in the texts of their heritage unless something is done. That something is the Mercava

Project, which creates an entire platform that "will make Jewish education irresistible" ("Mercava"). These sites echo Soncino's 15th century colophon by framing remediation as a positive move that increases accessibility without compromising the text in any fashion. Mercava even couches it as an imperative: the next generation will lose its connection to Judaism if these texts are not available in digital form. The affective (if also effective) rhetoric is familiar as fear drives textual remediation into a more accessible form.

Accessibility seems to be defined as uploading the text to the Internet and making it visible and comprehensible. Often, that includes providing tools that help parse the archaic Hebrew, such as public domain translations of the Bible or forty-five minute long podcasts that explain a page of Talmud. The Lieberman institute is something of an outlier; tied as it is to the Jewish Theological Seminary, it is a scholarly resource that one pays to access. Mercava's ambitions stretch further: they designed a site that works like a multimedia version of the CommentPress plug-in, which provides a space for readers to comment on and suggest emendations to individual paragraphs of a digitally published work[44]. If Drucker's book program represents an accepted view of what the digital book should afford, CommentPress and Mercava conform to that view. They provide a platform for texts and commentaries and a space that transforms individual thoughts into a larger community of

[44] The Commentpress plus-in was developed for the Wordpress blogging engine as a way for readers to leave comments on specific paragraphs in a given blog post, rather than having all comments aggregated at the end. The plug-in reimagines the commenting process as a series of targeted conversations about specific portions of the text rather than a larger response to the text as a whole. Noah Wardrip-Fruin used the engine to crowd-source edits to early drafts of his book and incorporated the comments into the published version. Matt Gold took the idea even further and used this style of commenting in both the draft and the digital publication of the anthology *Debates in the Digital Humanities* in order to promote ongoing conversations in the book and allow the book itself to evolve as a platform for debates, rather than merely a record.

readers in conversation with one another.

While these websites are interesting and will become even more so after the newer ones like Mercava leave beta, I focus on one in particular that I find best exemplifies remediation for accessibility. Founded in 2012, Sefaria.org calls itself the living library of Jewish texts. Ideologically speaking, they stand opposite Artscroll in their commitment to creating a free and open source repository of all Jewish texts. All the code they use and all the texts they have collected are distributed for free on GitHub. They have also opened the repository up to contributors, crowd-sourcing translations as well as inter-textual links. As of March 3rd 2015, contributors have written nearly 100,000 words of original translation and added 450,000 textual links (http://www.sefaria.org/metrics).[45] Sefaria holds to the ethos of the Free and Open Source Software movement, believing that "[f]or the Jewish people, our texts are our collective treasure. They belong to everyone and we want them to be available to everyone, in the public domain or with free public licenses" (http://www.sefaria.org). For Sefaria, the accessibility constituted by remediation is not defined by visibility or availability, but by the transparency that makes the project free for anyone to take and use as she sees fit.

My analysis of Sefaria will be twofold. First, I will examine the website's interface and layout, looking at how it handles the issues that Artscroll and, earlier, the Venetian printers were faced with in making these texts available. I believe that Sefaria successfully handles the transition from SEEKING on paper to SEEKING on the screen, although they

[45] This analysis was performed prior to the completion of this dissertation and, though Sefaria has expanded since then, I felt it appropriate that the information provided here reflect the state of the project at a time closer to when I completed my analyses of it. After all, if the Sefaria project is successful, any information I present here will be obsolete by the time a reader encounters it. For current information about the state of the project, I recommend the reader follow the link provided.

are less successful in preserving the experience of the text as sacred. Instead, Sefaria's presentation emphasizes accessibility and playfulness as a different paradigm for religious affect. Second, I will turn to the repository itself to examine the work that is possible with this sort of open scholarship. Sefaria emphasizes the interconnected, networked nature of Jewish texts in a manner reminiscent of Hayles' analysis of hyper reading in *How We Think*. The open repository provides a unique opportunity for me to take that network and remediate the Talmud to favor spatialized exploration in my own way, complete with visualizations of the Talmud and its paratexts.

At first glance, the interface for the Sefaria project is far less intricate than even the original printed editions of the Talmud. The text is divided into either two or three columns, depending on whether the reader chooses to read the text in Hebrew, English, or with the translation alongside the original. In addition to the one or two columns of text, there is a third column on the right side of the screen that displays all of the other works associated with a given section. In the case of the Talmud, that would be everything referenced by or referring to a given page that has been added to Sefaria so far. (Fig. 8). Hovering the mouse over a specific line of text highlights all the links associated with it, while clicking on the visible text of the link expands it. One can open the link in full should one wish, for example, to see a comment or quotation in context. The full version of the link also provides information about the relationship between the text and the link.

The interface was clearly designed with hyper reading in mind. It favors the exploration of multiple links and, in many ways, accurately reflects Friedman's vision of a Talmudic interface no longer dependent on the constraints of paper. Rather than just noting the biblical sources, Sefaria quotes them in full along the side of the page. Rather than

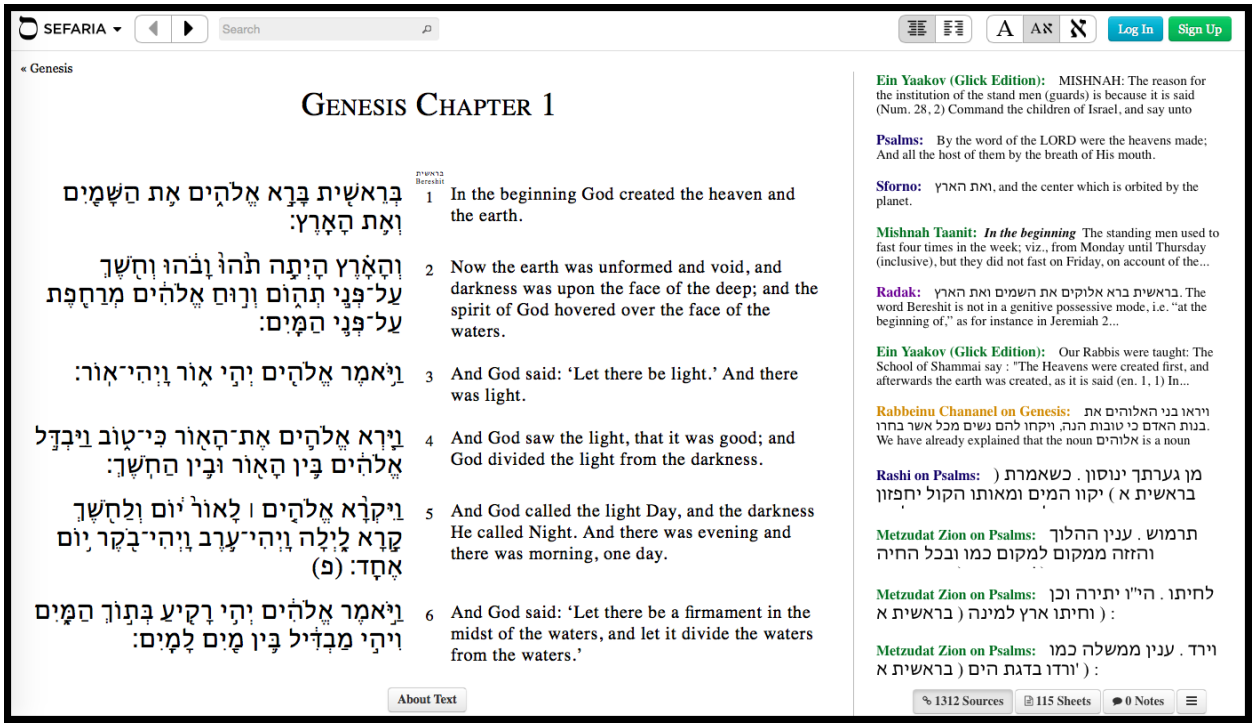


Figure 8. Sefaria's interface showing the first verses of Genesis and accompanying commentaries. The left side of the page provides the source text while the right-hand column includes all the texts linked to this source. Each individual author on the right is differentiated from the others using color. From April 2015.

relegating the less-used commentaries to the back of the book, Sefaria has no such space constraints and places them all in one place. The links in the sidebar scroll along with the main text so the visible links always correspond to the text one is reading. Assuming that the text has been added to Sefaria, the reader can easily access all the texts related to a given sugya and, to borrow Hayles' terminology, construct the landscape of how that sugya has been understood over the course of centuries of commentary.

Sefaria reminds me of one of Ted Nelson's dream machines, a system where the infrastructure favors an associative linking structure that mimics how the literature is actually produced. Sefaria links and maps the inspirations, quotations, elucidations, and contradictions that constitute two millennia of Jewish textual practice. It frames Jewish texts

through the same style of interface that Nelson imagines for literature: texts are amalgams of other texts that are constantly in conversation with one another. The structure of a document, especially a digital document, should highlight rather than elide those connections. This is exactly what Sefaria does. Granted, Sefaria is limited both in scope and in what it considers a document, unlike Nelson's vision, which took the Internet's approach of linking to anything possible. It is, however, Nelson's vision of the reader constructing her own document on the fly that is so pervasive to how Sefaria functions.

Sefaria's interface emphasizes the networked nature of the texts to the exclusion of most of the other interface elements present on the Vilna page. It assumes that the reader is familiar with hyper reading as a 21st century endeavor and can apply those skills without needing to know how to read the Vilna layout. Color has mostly replaced font in distinguishing between commentaries, a testament to the uncluttered aesthetics of current design as expressed by the clean lines and bright colors used by Microsoft and Apple in their recent product releases. Sefaria's design appears to emphasize the effects of SEEKING rather than the experience of moving around the page. As the possible texts involved in constructing meaning proliferate, the affective experience of SEEKING can quickly shift to dread or disinterest. To preserve SEEKING, Sefaria makes those texts as easy to reach as possible so that the main effort can be spent on the information itself rather than on finding it.

This approach does not really differentiate itself from regular web browsing—which Panksepp does consider to be one of the ways that human being engage their SEEKING systems—except that Sefaria also includes the option for readers to create their own "source sheets" out of the materials they read. A source sheet is, quite literally, a landscape of related materials constructed out of disparate sources that all relate to a specific topic. So the student

using Sefaria collects links of interest, and can build them into a new page that captures her mastery of a particular section.[46] The source sheet is the tangible reward from the SEEKING endeavor, proof of research that can be shared with the entire community.

Sefaria neither invented the concept of the source sheet, nor its current incarnation. As a scholastic endeavor, the sheet itself bears much in common with the compilation book, albeit on a much smaller scale. The compiler was responsible for reporting the choicest bits of authorial extracts. "[C]ompiling was a widespread form of information management in premodern periods. Compilers selected, summarized, sorted, and presented textual material to facilitate its use by others" (Blair ch. 3). Fundamentally, the compiler of the source sheet does exactly the same thing, limiting her choices to the relevant texts. The sheets tend not to be exhaustive and, especially when dealing with hermeneutics rather than with judicial arguments, often present only the texts that support the argument. The idea of the carefully extracted book clearly antedates the Internet, while the shift towards digitization merely made source sheets easier to compose and disseminate. Copying out texts became photocopying texts became cutting and pasting once again, this time on the computer. Sefaria makes the compiler's job even easier, by providing a small plus sign next to each text that,

[46] Source sheets are best thought of as small versions of course readers, designed for a 45 minute lecture rather than a semester long seminar. The sheet collects all the sources that the lecturer plans to refer to in the course of his discussion so that the readers can follow along. It is the obvious end result of discontinuous reading across multiple codices and bears many similarities to the liturgical books that Peter Stallybrass observes were created to collect all the disparate sources used in festive sermons into one place. THE source sheet is the recyclable, one-time-use version of this idea, made possible by the ease of home printing and the convenience of moving around digital texts. As many lectures on Biblical exegesis turn on the use of one or two words in context and the different explanations that have been essayed for those words over the course of centuries, the source sheet provides a convenient way to ensure that the audience has the text in front of them. I remember them as a consistent presence during my entire educational career, although I have noticed an increase in their dissemination during the past decade.

when clicked, offers to add the text to a source sheet. Sefaria also takes care of all the formatting for the sheet and, while one can add additional features such as school letterheads, the result is nearly always a linear progression whose arrangement constructs the compiler's argument. The messiness of multiple commentaries disappears, and a new text that is product rather than process takes its place.

The ethos of the source sheet echoes that of the site design: both highlight the creation of the network and the paths through it, rather than the page and the navigation thereof. The clean design of the source sheet is not only easy to print, but also remarkably similar to Sefaria's web interface. The printed page of the Talmud is no longer visually evoked, but fades away before the standard printer page. The distracting nature of the old page is no longer needed to encourage SEEKING as the proliferation of sources proclaims that the only reasonable response is to curate and collect. From that impulse, the reader produces an object that looks like the original text on the website—erasing Artscroll's firm distinction between what ancient commentators say and what the reader says—and that is shareable like the original text. The source sheets become a part of the conversation, a record of scholarly interest and the jumping off point for future inquiries. The sheets themselves are diverse; as of March 2015, the majority of sources deal with the recent holiday of Purim or the upcoming holiday of Passover, although they run the gamut from the possible religious issues surrounding fertility treatments to explaining how the television character Doctor Who is Jewish (http://www.sefaria.org/sheets/8395 and http://www.sefaria.org/sheets/8262 respectively). The source sheet adapts to serious and whimsical uses with equal facility because, unlike the Vilna page, the sheet itself is unimportant. It stands as the reader's record of passage, a signal that she has created meaningful links from the text.

The sheet and web interface suggest an absence of an aesthetic—the proverbial space in which content is king—though it promotes an aesthetics of absence that flies in the face of Vilna's cluttered layout. The clean interface and empty page is also an aesthetic choice, one in line with contemporary approaches to interface design that frame simple and uncluttered as ideals worth striving for. The effacing interface is no less present when it promotes its own absence, although Sefaria's open source complicates the message of the appearance. The code for the web interface is also available via GitHub; it can be modified and redeployed in another context, should one wish. The aesthetics suggest that the texts themselves are all there is, yet the link to GitHub opens up an extensive Python-based library of scripts with which to build "interfaces, apps (like a source sheet builder) and infrastructure (like an API and a structured dataset) for Jewish texts and textual learning" (Lockspeiser). Sefaria speaks equally to user and developer; though it does not reinforce a distinction between those who develop interfaces and those who use them, the site design excuses users from ever having to dig beyond the interface. Unlike the Vilna page, the interface requires no knowledge beyond how to navigate a web page and, while the backend for both code and content is available, one need never use it to have the full experience of the site. Such an experience tries to embrace both sides of Emerson's dichotomy between ease of use and ease of manipulability; Sefaria is not an experience predicated on locking the user out, nor does it require a coder's knowledge to access and create. In this, it is the antithesis of Artscroll's approach and, by the measure of true accessibility, superior.

There is always a catch. The sheets themselves lack the affective valence of the Talmudic layout. The excitement of SEEKING passes from navigating the page to navigating the entire database. The distinction between page and database can be specious: after all, one

value of the codex, especially the Vilna edition with its extensive endnotes, is how it functions as a random access database, while the front-end of the Sefaria database is a web-page that manages the excess of information in a fashion functionally similar to the printed page. The difference I see here is not functional, but ideological. The printed Talmud emphasizes the page as the unit of study and the location of inquiry, while Sefaria emphasizes the node in the network. For the latter, proximity is less important than connective edges, and there is no ranking based on layout as there is with Rashi and Tosafot. The former relies on the page as the driving connective force and the space of exploration. In Sefaria, the database behind the interface takes the page's place as the main source of intellectual achievement and affective pleasure.

In *The Language of New Media*, Lev Manovich discusses the emergence of database over narrative in a polarizing fashion that N. Katherine Hayles critiques in *How We Think.* Manovich positions the database as the dominant mode of new media, positing that "creating a work in new media can be understood as the construction of an interface to a database" (226). The user can construct a narrative path through it, though that is only one of many methods of navigating the database, and new media's primary contribution is that it favors the database over the narrative, the sum of all possible paths through the network over the singular path taken by the user (231). Hayles rejects Manovich's dichotomy, arguing instead that "narrative and database are more appropriately seen as *natural symbionts*…Because database can construct relational juxtapositions but is helpless to interpret or explain them, it needs narrative to make its results meaningful" (176). The database as a work of new media is incomplete until it has been made meaningful. To make meaning out of the database, according to Hayles, is to create narratives. Sefaria's interface is a mechanism for making

new and old narratives out of the database of Jewish texts. It is useful only insofar as it provides access to that database and allows the reader to navigate its intricacies. And it is affective in the same sense as the traditional page only insofar as the reader finds the experience of making narratives to possess a SEEKING component.

I want to be clear that I am arguing that Sefaria's affective component is, overall, divorced from the layout, not that it is absent altogether. The affective register is now embedded in the accessibility of the database and the reader's ability to play around with it. Panksepp's definition of SEEKING fits just as well with Sefaria as a navigable "living library of Jewish texts" as it does with the space of the Talmudic page. In jettisoning the page, Sefaria loses the historical position of the page as teacher and guide, but it replaces that with the affective joy that comes from play. Play (or PLAY) is, according to Panksepp, an activity that brings about social joy, often through the mimicking of adult-like behavior, but always through doing something that is pleasurable or fun in and of itself (352-3). Panksepp suggests that one manifestation of PLAY could be the use of the SEEKING system for personal fun, but goes on to emphasize that the strongest forms of play occur in the spaces of social interaction. In that respect, Panksepp agrees with D. W. Winnicott's psychologically canonical understanding of play as the underlying state that allows creativity to happen. For Winnicott, play is the capacity to *create* a shared reality between two individuals engaging with one another (64). "Whereas inner psychic reality has a kind of location in the mind or in the belly or in the head or somewhere within the bounds of the individual's personality, and whereas what is called external reality is located outside those bounds, playing and cultural experience can be given a location if one uses the concept of the potential space between the mother and the baby" (72). The world created by play is a shared subjectivity co-created by

those who choose to participate in the game. To play is to engage with an other in an act that, by its nature, generates joy, which explains why Panksepp categorizes it as a basic affect and why discussions of play are inherently discussions of affect.

Playing with technology, while a colloquially familiar expression, takes on some added dimension when considered in the light of the social. If play is inherently a social exercise, then can one speak of playing with technology? We speak that way all the time; playing around on a computer extends beyond playing someone else's creative endeavor, such as a video game. Manipulating the computer, changing the display, altering preferences are all moments in which the user alters the world she shares with the computer. If we think of playfulness as requiring interaction in Crawford's sense—predicated on the capacity of both participants to speak, think, and listen—then extending playfulness to the computer means we are implicitly granting it a sense of subjecthood, at least for practical purposes.[47] This is not to say that the computer is a person or that the interactions with computers are identical to those with other human beings. Sherry Turkle argues strongly in *Alone Together* that there is no comparison between relating to other people and relating to technology, even technologies capable of responding and designed to evoke affect. But if human beings are playful creatures, and it seems that we are, then the impulse to play with will be extended to all classes of things capable of interacting with us in a shared world. We play with

[47] Whether this is like the child who plays with his doll by granting it subjectivity during imaginative play or a move towards a more complicated vision of subjectivity and agency grounded in a subject's ability to act within a network of other actors (see Latour in *Reassembling the Social*) is entirely beyond the scope of what I can answer. To a degree, I want to claim it is irrelevant, as the main subject of inquiry in this chapter is the affective state of the human being in response to the book artifact. And yet I do think it matters whether we relate to our technological objects as having merely practical subjectivity or ontological subjectivity. When we talk about children playing with technology, is the term similar to "playing with toys" or "playing with friends"?

technology because technology allows us to play.

Several years ago, several of my colleagues and I launched a collaborative blog dedicated to exploring the role of play within the computational and the algorithmic. We called it "Ludic Analytics" and while the site itself is no longer updated with any frequency, it remains an archive of experiments that are predicated on the importance of inquisitive play with technological affordances as a form of learning. Playing with technology meant using the computer as a co-creator with whom I could alter and analyze literature. The texts became the shared world in which the computer and I played. Such playfulness was limited by accessibility, both whether the texts in which I was interested were available and whether the software I wanted to use was accessible, i.e. free, well-documented, and within my skill set. While I worked with several texts over the course of three years, the last and most extensive endeavor was with Sefaria's dataset.

If Artscroll's approach to the Talmud is one in which the relationship between the reader and the text is built on authenticity and preservation, Sefaria's approach grounds itself in tangibility and manipulation, two words with lexical roots in the idea of touch. The unchanging interface on the iPad stands opposite the endlessly rearranged and exportable contents on the computer. Along with the texts, Sefaria also publishes the database of links that connects each text. With that database, I can remove Sefaria from its interface and access it instead through one of my choosing. I chose to explore Sefaria's network through the use of the visualization software *Gephi*. Doing so emphasized the connections between the texts to the exclusion of all else, including content. Through visualizations, I show a radically different experience of the spatialized Talmud and its associated commentaries, one that ranges far from both the Vilna page and the iPad. This is the limit towards which accessibility

and openness points; the polar opposite of the Talmud behind the glass of the iPad. At the same time, moving to visualization software points to another limit of accessibility: the point at which the texts are no longer readable. Working with the data on the computer implies being able to manipulate the data, to move it with one's hands in a way that the data behind the touch screen, for example, cannot be. The irony should not be lost on anyone. The digital book in Gephi is unreadable in the sense that books are meant to be read, but is available for distant reading, to borrow Franco Moretti's now ubiquitous term for large scale data analysis of texts. One must find new ways to handle the text than to simply hold the book in one's hands. Distant reading remains reading: a moment when relationships are constructed between the reader and the text. What follows is, among other things, an account of how distant reading and open databases lead to strange reading interfaces for the digital book. Graphing Sefaria in Gephi is my writing of a digital Talmud, one that fails to work in almost every way possible except that it contains information about the texts and can be read in a sequential fashion in order to make meaning. In transforming the interface, I experiment with the extent to which the digital book can stretch when allowed to be fully transparent and accessible.

Discussing the playfulness of Sefaria is, inevitably, a conversation about my experience playing with the Sefaria dataset. While I can speak to the ways in which accessibility makes such playfulness possible, I am comparatively limited when it comes to addressing others' experiences of play. Phenomenologically speaking, the experience of playing with the database is up to the individual user. What I wish to show, indeed, what I have begun to show, is that Sefaria makes the larger category of playfulness an integral part of user experience through the invitation to create shared resources that reflect creative

endeavors and by offering the entire database for readers to play with. The playfulness of Sefaria works because of how successfully the database represents the idea of a living, shared library. The accessibility of the library, the presence of tongue-in-cheek source sheets about the religious affiliation of fictional Time Lords, the emphasis on community and connectivity not only between texts, but also between contributors brings back the sense of subjectivity through the impression of co-creating a world. The next step in sharing that library is experimenting with what else it can be. When I describe the results of my experiments with the dataset, I do so with the goal of understanding the interconnected nature of this digital book—how it evolved over time as well as the makeup of its connections—with the additional goal of documenting several months worth of play that amounts to a phenomenological account of Sefaria comparable to the experience of Artscroll.

Another word for this playfulness might be "deformance," the term coined by Jerome McGann and Lisa Samuels in "Deformance and Interpretation." Mark Sample best articulates the idea of deformance in his "Notes Towards a Deformed Humanities." He explains that "[deformance] is a portmanteau that combines the words performance and deform into an interpretative concept premised upon deliberately misreading a text, for example, reading a poem backwards line-by-line." He goes on to cite Stephen Ramsay's point that digital tools make deformance easy. Sample persuasively argues that McGann and Samuels' vision of deformance is still fundamentally about the text and about finding new approaches that circle around again to the hegemonic figure of the text. Sample instead argues for a fully deformed humanities that is broken, twisted, and allowed to be so.

> To evoke a key figure motivating the playfulness Samuels and McGann want to bring to language, deformance takes Humpty Dumpty apart only to put Humpty Dumpty

> back together again.
>
> And this is where I differ. I don't want to put Humpy Dumpty back together.
>
> Let him lie there, a cracked shell oozing yolk. He is broken. And he is beautiful. The smell, the colors, the flow, the texture, the mess. All of it, it is unavailable until we break things. And let's not soften our critical blow by calling it deformance. Name it what it is, a deformation.

The playfulness that working with Sefaria generates exists in the interstices of deformance and deformation. Sometimes it returns back to the original Talmud, but other times it exists as its own broken and beautiful network that only makes sense when the text is shattered into its contexts. What McGann and Samuels advocate is a way of using play and playfulness to experience the joys of SEEKING. Sample, on the other hand, advocates play for the sake of PLAY, deformation for the sheer joy of it. In a sense, deformation is like PLAY that mimics adult activities for the sheer fun of it, assuming that critical analysis is an adult activity to be taken very seriously. To play with a text is not necessarily to deform it and it is, I suppose, possible to have a very serious and un-fun deformance session. Yet the work I do with Sefaria incorporates both the feeling of PLAY and the desire to deform as a way of accessing new meaning and even making art out of eggshells.

After downloading the dataset from Sefaria, I imported it into the open source graphing program *Gephi* and created several visualizations of what exactly a living library of Jewish texts looks like as it develops over several months (fig. 9). I should note that some of what I say here, along with more detailed discussions of the process of creating these

visualizations and some speculation as to their use can be found on Ludic Analytics.[48] In addition, all the data I used to generate these graphs, including the Gephi files, is available for use on Github at https://github.com/LizShayne/Sefaria-Data-Viz. In this respect, I share Sefaria's commitment to keeping this material available to see and accessible to use.

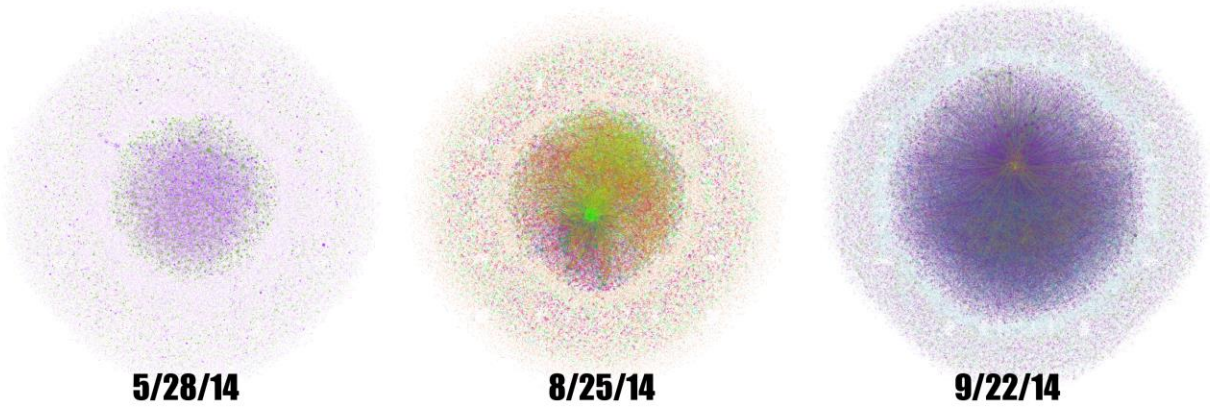


Figure 9. These three images, arranged by date, represent the database with 87,000 edges, 150,000 edges and 300,000 edges respectively. Each node corresponds to the smallest unit of a given text: a biblical chapter or occasionally single verse, a single entry in a commentary, a sentence in the Talmud and so on. The size of the node represents its degree—how many edges connect to it—and the color represents its class; whether the node is from the Bible, the Talmud, Biblical Commentaries, liturgy, etc. All three graphs were generated in Gephi using the Open Ord. layout algorithm, which is a force directed algorithm optimized for large graphs such as these. In brief, force directed graphs work by assigning spring-like attractive forces to the edges and magnet-like repulsive forces to the nodes themselves. A pair of nodes will repel one another unless they are connected by an edge. The more edges a given node has, the closer it will be to the center of the graph. The side of the node is irrelevant to the forces. The colors in the right-hand graph correspond to the key given along with Figure 10.

[48] There are four blog posts about Sefaria on Ludic Analytics. They cover the experience of iterating through different ways of presenting the data, how I used the graphs to uncover and interpret anomalies in the dataset, learning to read this dataset from a distance, and speculation about the pedagogical uses of this practice. They can be found at: https://ludicanalytics.wordpress.com/2014/06/17/sefaria_in_gephi/, https://ludicanalytics.wordpress.com/2014/08/21/sefaria-ii-the-map-the-territory-and-the-sukkah/, https://ludicanalytics.wordpress.com/2014/11/17/sefaria-iii-comparative-graphing/, and https://ludicanalytics.wordpress.com/2014/12/21/sefaria-iv/

As a network of related texts, these graphs tell us little about each individual text. They do have quite a bit to say about Sefaria, however. The overall shape of the network remains the same, although the central region seems to grow larger with each iteration, which suggests that the texts and links being added increase network density among a more central group of texts, while the more diffuse cloud around the periphery remains the same. At this scale, the texts themselves are nearly invisible and the effect of seeing them is more aesthetic than informative. The key piece of information conveyed by this graph is that the living library of Jewish texts can be beautiful (especially when Gephi chooses an attractive color scheme). The database at such a distance, however, is unreadable in all the familiar ways. Though spatialized like the Vilna edition, the Gephi graph is too large to use for hyper reading. No longer making meaning through layout, the Sefaria dataset instead makes meaning through user-generated graphs that reimagine in the sense that they re-image the corpus of Jewish texts as a space of learning. Like the layout of the Talmud with dummy text, the distant view of Sefaria speaks to the idea of the network. It is evocative of Alexander Galloway's trenchant observation that "every map of the Internet looks the same…All operate within a single uniform set of aesthetic codes" (85). A map of Sefaria is an argument for the networked nature of Jewish texts: the texts look like a network because they make up a network or, more accurately, because it conforms to the aesthetics of the network, we are justified in treating it as such. Having made this first visualization and established that the network exists, my next impulse was to entirely rearrange the space of the texts to see what else they can say.

By arranging the nodes along a Cartesian plane, a much more readable image of the dataset emerges (fig. 10). In this image, the horizontal axis is a measure of in degree or how

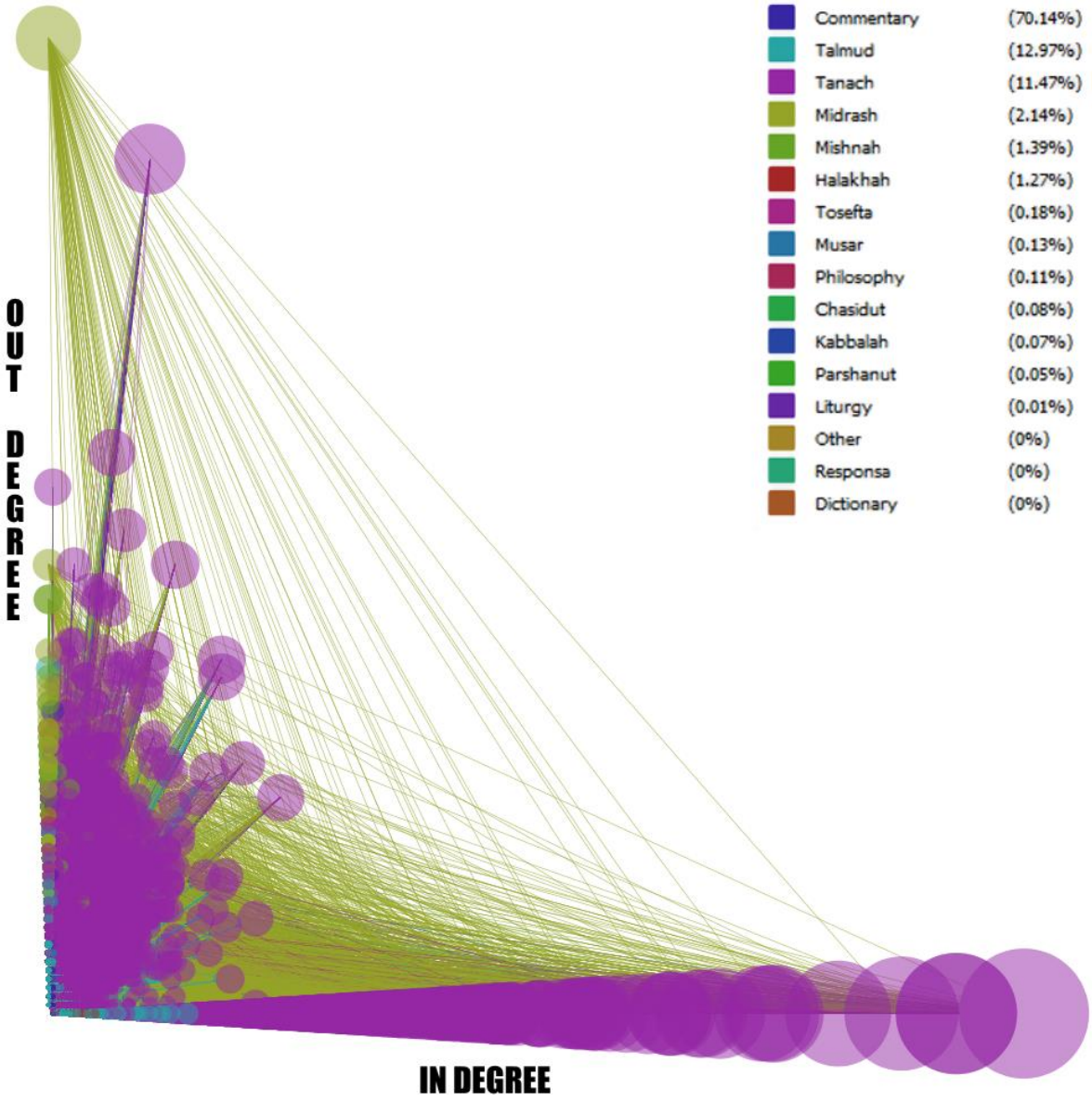


Figure 10. This figure represents the September dataset as an isometric graph, with node size corresponding to degree and color to class of text. The edges are colored according to the node from which they originate.

many other texts cite or otherwise refer to the text in question, while the vertical axis measures out-degree or how many texts are cited by the text in question. That is, a text that is referenced many times, but refers to few other sources will be on the bottom right of the

chart, while a text that refers to many other sources, but it not itself referenced often will be found on the top left of the chart. This sort of data distribution is useful both because it provides a quick visual understanding of how the texts refer to one another--note that the upper right corner of the chart is empty, suggesting that there are no texts that both refer and are referenced to a significant degree. 70% of the dataset is made up of commentaries, but they are only barely visible in the lower left corner of the graph. The rightmost side of the dataset—where the nodes with the greatest number of texts that refer to them are located—is made up entirely of chapters and verses from the Bible. While the nodes in the image lack labels, the largest right-hand node is Exodus 12, which tells the story of the first Passover sacrifice and the death of the Egyptian first-borns. The next two are Deuteronomy 32 and 33, Moses' poetic address to the children of Israel and his blessings to each tribe respectively. Explaining the underlying causal mechanisms for the popularity of these chapters would require extensive exploration, but the proximal mechanism is comparatively clear. Based on the color of the edges going in to these nodes, the Midrashic literature makes extensive use of the verses in these chapters, suggesting that their importance lies in how useful they are in bolstering hermeneutics. The same is true for the topmost pink node, which is Genesis 1:1. That verse clearly gets used over and over again both as a reference point for other narratives and as a starting point for multiple commentaries[49]. After all, whether or not one manages to complete a biblical commentary, one begins "In the beginning".

[49] Genesis 1:1 is slightly odd, given that it really doesn't refer to very many other texts. It does, however, get used exegetically very often. In those circumstances, many interpreters argue that Genesis 1:1 is actually discussing something not apparent in the plain meaning of the verse. So while the verse really doesn't deserve such a high place in the graph based on a literal reading of its content, it's interpretive usefulness has granted it primacy of place as a verse that can refer to many different things for many different commentaries.

My first impulse when generating these graphs is to return to the texts—deformance rather than deformation—using the outliers as markers for what is interesting and worthy of attention. Graphing, from this point of view, is just another way to satisfy the SEEKING impulse. Gephi and the graphing project are another interface, one specifically designed to help find possible narratives within a database. Identifying outlying nodes and looking at their contents in order to explain their popularity performs Hayles' argument for the symbiotic relationship between narrative and database. The graphs provide the relationality; the SEEKING human explains the connection. Part table of contents, and part metadata map, the dynamic visualization functions in tandem with the digital book rather than as a new instance of it. One creates the visualization to return to the digital book with new knowledge, having discovered more about its intricacies, but the visualization stands alongside the book rather than in place of it.

Attempting to divorce the database from Sefaria's interface requires seeing the texts as a collective, rather than as a series of individual nodes. Looking at the individual nodes and then putting them in context using connected edges resembles the Talmudic printing practices that used proximity to indicate relationality between texts. Looking at the corpus as a whole, however, is outside the realm of traditional Jewish approaches. Distant reading draws attention away from the text as a singular entity and focuses on the entire corpus, but doing so requires the reader to shift from speaking about a few exceptional and paradigmatic texts to addressing an entire corpus. It requires a conceptual shift from the deformance that always returns to the text towards a deformation that is willing to leave the text and settle comfortably in the network. For example, for all that Sefaria is dedicated to showing the interconnectedness of Jewish texts, 75% of the texts in the corpus only have one edge (fig.

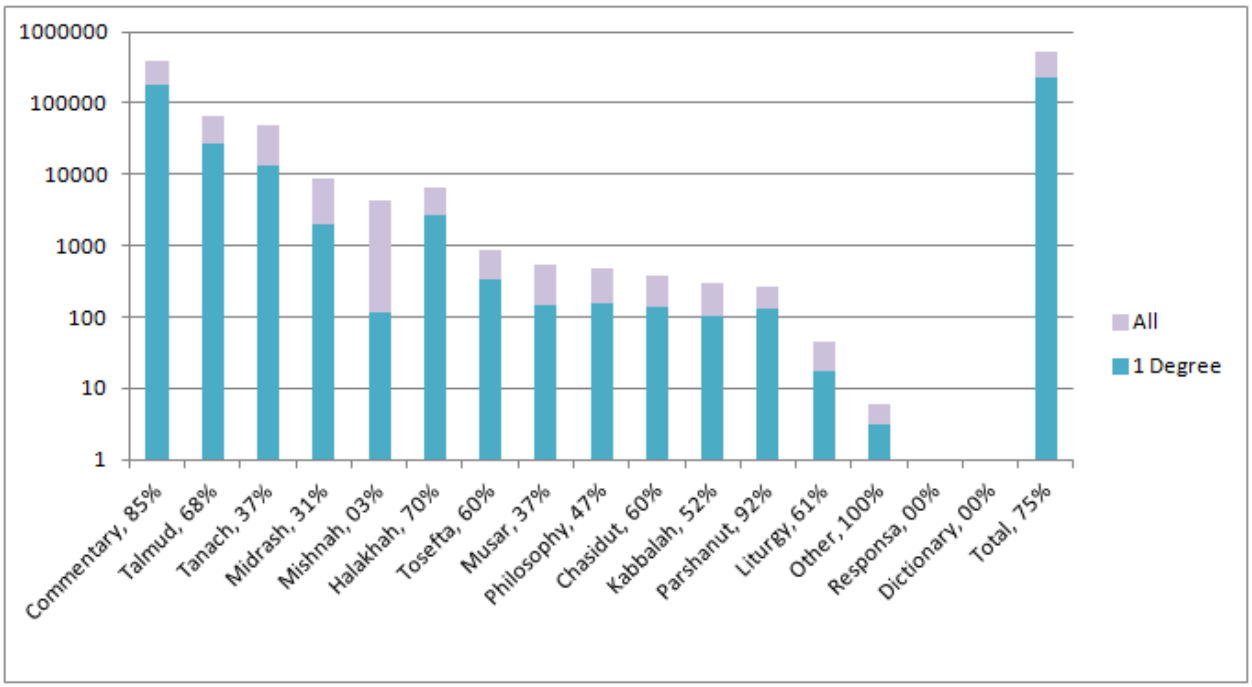


Figure 11. This graph shows the number of nodes with only one edge (i.e. nodes with one degree) in each category and includes the percentage of one degree nodes within each category. Given the numbers involved, the graph is only legible on a logarithmic scale. The categories of Responsa and Dictionary have three nodes total and so are too small to appear on the graph and too negligible to have any weight. Additionally, the section labeled Tanach includes both Biblical texts and translations. Roughly 33% of the texts in that category are translations and those translations almost all have only one edge. The total count of one degree nodes for only Biblical texts is closer to 4% of the nodes. Unlike the other visualizations, this graph was generated using Microsoft Excel.

11). Those edges only make up 5% of the total edges in the graph; one quarter of the texts are responsible for 95% of the connections. From the perspective of the network, the vast majority of texts, especially the commentaries, are dead ends. They refer only to the text upon which they are commenting and are not referenced again in the corpus. This may change as more links or texts are added. The progression observed in the three graphs in figure 9 suggests that, as additional texts are added, they are more likely to be drawn closer to the center because they have one edge that connects to a central node rather than several edges that increase the overall density of the graph. The data from Gephi show that, while in May, 82% of the nodes had only one edge, by September, that percentage had gone down to

75%. Of course, in August, only 73% of the nodes had only one edge, so there is no clear progression present. What this really indicates is that I am trying to extrapolate from insufficient data, and there is no clear way to predict what the corpus will look like next. However, the vast majority of nodes added do have only one edge. The September dataset is four times larger than the May dataset; even a decrease of 7% means a large increase in nodes with one link.

These results make sense in the context of Sefaria's overall growth, which began with the more central texts and later branched out to include more obscure commentaries or additional works of halachic literature. It is highly unlikely that subsequent additions to the dataset will contain something with as many edges as, for example, the twelfth chapter of Exodus. Having said that, one of the additions to the September dataset was the work of Midrash "Tanna Debei Eliyahu", whose eighteenth chapter is the light green node at the top left of figure 10.[50] My speculations about the dataset and how it will change with future additions speak to how little we know about the corpus of Jewish texts as a whole. The evidence from the data we have so far, however, speaks highly of Sefaria's success as a communal endeavor. Many of these links were added algorithmically with the help of volunteer developers who built scrapers to find the data elsewhere on the Internet. As a collaboratively built digital book, Sefaria is highly successful.

Turning back to the visualization in figure 10, we return to the question of what the shape of the graph indicates about the corpus. The nodes in figure 10 are found almost

[50] The reason that the eighteenth chapter of TDE has so many edges is that, in the course of a discussion about the messianic era, it cites over one hundred distinct biblical verses. Most of the other chapters cite between ten and thirty. Why it cites so many sources is a mystery better left to scholars of rabbinic literature.

exclusively on the axes: texts are either referenced by other texts or refer to them in turn, but rarely both. This pattern holds true when the individual nodes are combined to treat each book as a singular entity[51] (See fig. 12 on page 123). The shape of the graph is partially an artifact of the way that Sefaria handles links as directed edges: they have a source and a target, and can only go from source to target. Thus, the Talmud can quote Exodus using a link labeled "quotation", but not vice versa. Texts found on the horizontal axis are often cited; texts found on the vertical axis cite frequently. The only category of text to make any forays into the middle region is the Talmud; which both quotes itself and the Bible and has an extensive collection of commentaries written about it. That, as it turns out, is the exception and not the rule.

With Gephi's help, Sefaria's dataset transforms into a visually fascinating playground for exploring a new layout of the Talmud. The playfulness inherent in Sefaria's interface extends to the visualization software that turns the database into a collection of multicolored spheres that move around at the user's direction. The connections in a tractate of Talmud are visible as clusters (see fig. 13 on page 124) rather than as text boxes, and the texts themselves respond to the reader's demands as she moves them around the screen, either using layout algorithms or by dragging them. They are illegible, but perfectly readable nonetheless. For all that the interface accesses the metadata of several books, the text as such is gone from this instance of the digital book. Consulting the contents of the nodes requires returning to Sefaria and the more traditional form of the digital book. Instead, one reads the shape of the corpus,

[51] I combined the individual nodes into single book-sized entities by removing all numerical data from the spreadsheet in which the database was stored, then imported the data into a new Gephi file and hand-cleaned any of the nodes that had not combined properly. Thus, all of the individual chapters in Exodus are now combined into one larger node simply called Exodus. The number of individual texts drops from over 100,000 to 723.

the idea of Sefaria as a collaborative object that one can take part in by playing with it. The visualizations perform the dual function of introducing the reader to the possible trajectories through the corpus, and of introducing the reader to the text as an affective object of play. Spending time with the corpus creates an affective link between the reader and the texts it comprises. Put simply, playing with Sefaria endears it to the reader.

Taken together, Artscroll and Sefaria provide two opposing perspectives on the reader's relationship with the digital book. Artscroll's position develops the affective capacity of the book through sacred distance and the constant reintroduction of space between the reader and the page. Sefaria, on the other hand, keeps the reader as close as possible to the digital book, developing an affect based on proximity and play. The capacity to reach out and touch the text, not through a touch screen, but by having a visible effect on it, brings the reader into the shared world of the text and provides the same kind of social joy as engaging in play. There are no limitations on what the reader can do (aside from deleting data from the dataset and similar acts of vandalism, which can only be performed on the downloaded copy of the database); the reader also has a say in the appearance and design of the digital space. Working with the corpus outside of Sefaria's interface only emphasizes how serious Sefaria is about accessibility and providing their readers with a sense of ownership. Just as the interface invites the reader to expend energy in finding and recording connections between texts, it also emphasizes the connection between the contemporary, digital reader and the text that she now owns.

Artscroll's version, on the other hand, spends all its affective energy on promoting the connection between the edition of the text that is not in front of the reader. In preserving the sanctity of the Vilna edition, it deemphasizes its own to such a degree that the reader has no

connection to it. From the educators I have spoken to, the ones who find value in Artscroll do so because it is useful, not because they "like" it. Although, in fairness to the affective capacity of their interface, I do know a number of people who "hate" it. I cannot help but speculate that, especially within religious circles that prize the Vilna edition and are devoted to it as a way of devoting oneself to God's word, Artscroll is the safer choice. As an edition that is not meant to be beloved or evoke affect, there is less pleasure in its use, but less threat as well. The reader can reserve his love for the "real" and "authentic" Vilna edition. Sefaria can endear itself to the reader and that makes it dangerous. In this respect, any disagreement about the appropriate interface for the Talmud is not really about the Talmud's interface, but is a way of performing one's relationship to traditional Judaism. One of the big questions that the observant communities grapple with on a regular basis is what constitutes an appropriate change and what is better served by hearkening back to (or inventing) authentic practices that define the community. So the kind of digital Talmud one uses can be bound up in this larger, deeply affective debate about the nature of 21st century Jewish observance. With that in mind, Artscroll's entrenching of the Vilna edition is a deeply affective appeal; the affects in question are just located outside of the book.

It comes as no surprise that I also find Sefaria's innovative approach to the digital Talmudic interface to be preferable to Artscroll's reactionary design. In the larger spirit of the Talmud, their design shows a willingness to adapt even the larger tenor of the affective experience in order to maintain the sense of intersubjectivity that is meant to lie at the heart of the Talmudic encounter. As a remediation of the Talmud, it slots more neatly into the larger narrative of a religious text remediated to fit changing circumstances. As a *living* library of Jewish texts, Sefaria tries to embody an interface that feels like an intersubjective

encounter—with the texts, but also with other readers. In a striking parallel to the Vilna edition, the interface once again becomes the vehicle for the encounter between two subjects, though these subjects are not two subjects physically present to one another, but technologically present. If Artscroll effaces the trails left by other readers, Sefaria highlights them as the living part of the library. Change and growth are features of aliveness; they are also traits by which we judge something as capable of interacting with us. The further that Sefaria steps away from the familiar layout, the more it shows that a different approach to interface can still favor the larger affective project of the text.

It is worth noting that both the Vilna edition and Sefaria, not to mention Mercava and several other digital platforms, focus on creating encounters with other users through the text, rather than just with the text. The experiences of SEEKING, of reading the polyvocal text object, are combined with the presence of other human beings; a mediated encounter rather than an encounter with the medium. The Talmud is, from its inception, a text about remediating teachers' voices. Artscroll loses sight of that goal in the service of building a new affective model for using technology to imbue sanctity into books. Sefaria, in holding fast to the voice, achieves the intersubjective encounter with the text and its readers, but sacrifices not only the textual affects, but also the sense of historical authenticity embedded in the layout. Sefaria's readers can use the text and one another to say anything; that is the purpose of an open and open source repository. Artscroll constrains their readers to encountering the text through the lens of tradition. Their elucidations have the stamp of rabbinic approval and the accompanying notes often integrate the statements of the Talmud into the ideology of right-wing Orthodoxy. To put it rather simplistically: if Sefaria focuses on the remediation inherent in remediating tradition, Artscroll emphasizes the continuity of tradition in their

remediation to the point of privileging the previous version of the text over their own.

Independent of the religious implications, these opposing ideologies also speak to the future of the digital book. The Talmud is not a useful model for fictional texts, but provides a useful example of how digital books can provide access to canonical texts. Artscroll's Talmud is a critical edition. Sefaria's Talmud is a collaborative edition. Artscroll emphasizes traditional interpretations and maintains the canonical layout in a form that, ideally, conveys to the reader what the traditional reading experience was like. Tradition, in all fairness, has a specific meaning for Artscroll and the digital edition of the Talmud is imbricated in preserving an ideal of Talmud study whose history is grounded in the 19th century. Sefaria, alternatively, is a digital book for generating new knowledge. It relies on its readers' willingness to work on the digital book and participate as producers rather than consumers. The question is not which of these is *the* digital book of the future, but which approach towards digital texts will undergird a given project. In *Graphesis*, Drucker postulates that the book of the future will "arise from an analysis of the functions of each element of design for purposes of navigation, orientation, representation, reference, and commentary and then rethink the ways the capacities of networked electronic environments can extend these functionalities and encode them in an innovative approach to design" (175). Drucker's future digital book is one that attends to the niceties of design and the elegance of making meaning through visual media, but it lacks the attention to the reader that dictates the features of the digital editions of the Talmud. The book of the future inevitably depends on what kinds of experiences it wishes to provide for its readers. Sefaria is the book of the future, but it would be a mistake to think that Artscroll is any less invested in what digital books can do.

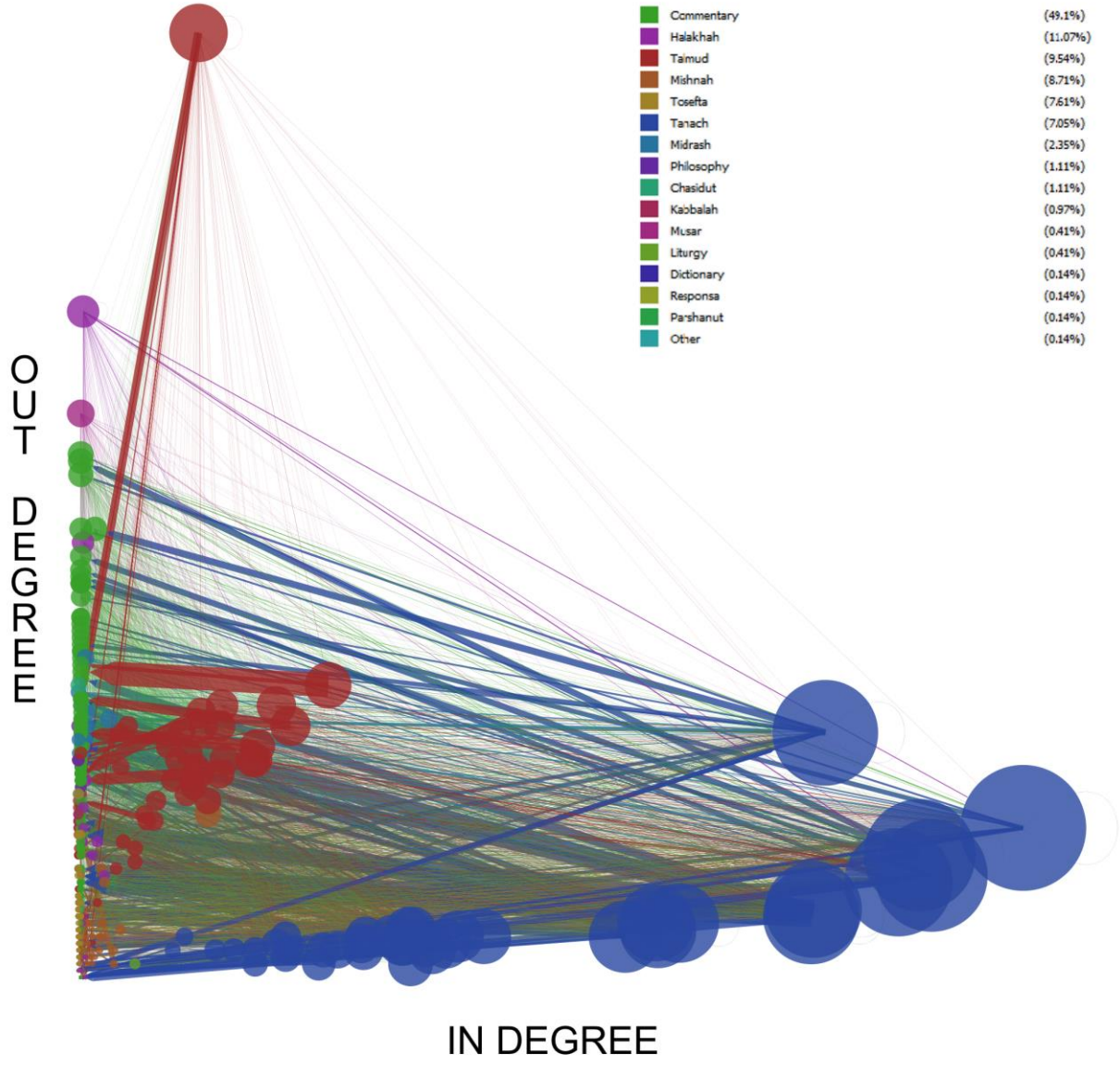


Figure 12. Each node in this graph corresponds to a single book rather than individual verse or section of a page. Otherwise, the contents are exactly the same as Figure 6. The notable Talmudic outlier towards the top of the graph is Tractate Sukkah. Sukkah has significantly more edges than any of the other tractates because it was used by Sarah Wolkenfeld, the director of education at Sefaria, to teach her students about the networked nature of the Talmud. As part of the class, they added a number of connections to the halachic literature that are found in the pages of the Talmud, but that have not been crowd-sourced for the other tractates.

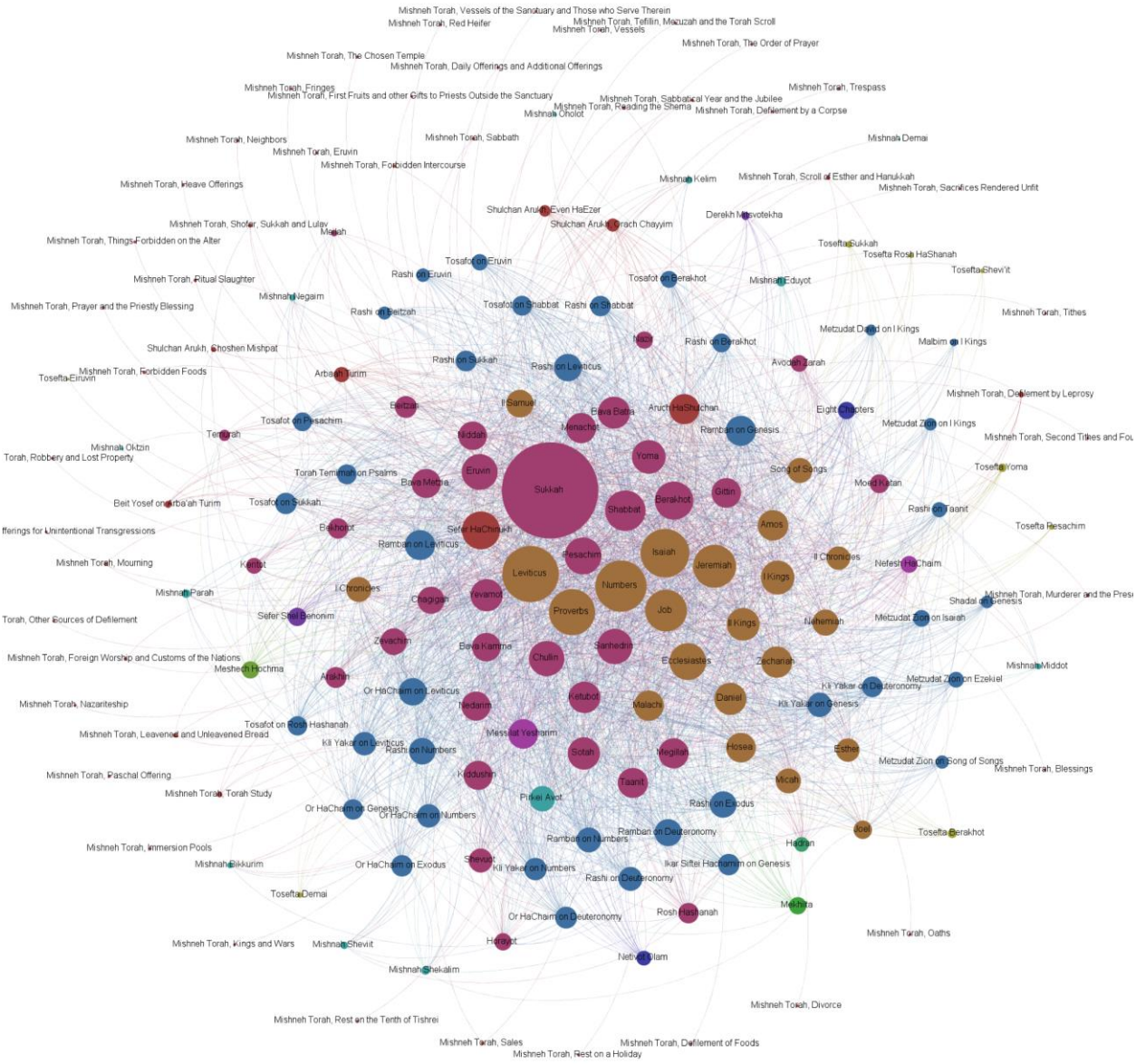


Figure 13. This graph represents all the texts referenced by a single tractate, Tractate Sukkah. I chose Sukkah because, based on the exigencies of the dataset, its network most closely resembled the actual links embedded in a standard tractate of Talmud. All nodes on this graph share an edge with Sukkah, which means they are refer to or are referenced by Sukkah. This layout, like all the others not on an isometric plane, relies on a force directed algorithm that treats nodes as if they have repulsive forces and edges as if they are springs.

## Chapter 3: The Affective Monster and Its Digital Progeny

The connection between the reader of a book and affect's role in fostering said connection depends on both the content and the intended use of the book in question. In previous chapters, I looked at how the emotions associated with the sacred and the sublime—two experiences that are linked in turn by how they produce affective response—structure the student's relationship with the Babylonian Talmud. Within this religious context, the relationship between reader and text develops as the reader negotiates her way through the complex pages of the Talmud, but is ultimately between the reader and the book-object rather than with any particular part of its content. The content still matters because it is the sacred text to which she connects through study and it provides the hook on which she hangs the connection to previous generations. At the same time, the content does not matter: the Jerusalem Talmud is a distinct version of the Talmud redacted earlier than the Babylonian edition and, despite significant differences in content and legal rulings, it shares the affective structures of its later, better known sister-text. To put it another way, the affects of the text remain stable across different pages. It does not matter if I am on folio 2 or 92 in Tractate Berachot; the experience of the text will feel the same[52]. The connection is with the book as object, as representation of God's law, as representation of Judaism's history, or as intellectual puzzle.

[52] This is not to argue that the text lacks any instances of non-SEEKING affects that occur when the reader engages with the content itself. Passages of *Aggadah*, the extra-legal narratives scattered throughout the Talmud, often illustrate the point of a text through narrative and occasionally provoke emotions beyond the satisfaction of SEEKing and discovering how they fit together. And, of course, this modern reader who identifies as a woman experiences RAGE, to use another of the basic affects that Panksepp argues structures our experience of the world, every so often as well. But these are exceptions, rather than the norm, and do not define the larger experience of the text in the way that SEEKing does.

Fiction and narrative, by their very nature, complicate this scenario. A story with plot and characters adds new layers from which affect can emanate and additional building blocks that both reader and text can use to forge a relationship. The text that affects through narrative poses something of a conundrum for cognitive literary studies: how is it possible that fiction makes us feel? Or, more precisely, what is it about our minds that allows us to dispense with the fictive nature of fiction and experience true emotions without undergoing the events in a text? Scholars of the literary experience, such as Richard Gerrig, Werner Wolf, and Norman Holland, suggest that we as humans have some special affinity for narrative that causes us to respond internally as though a story were real without acting as the story would demand. Part of the mind is subsumed into the narrative and believes in it, while the part responsible for, say, running away from danger, does not engage. So human beings can respond as if a narrative experience were real without acting accordingly. Antonio Damasio discusses this neat trick in *Looking for Spinoza* as an explanation for empathy.

> [T]he brain can simulate certain emotional body states internally, as happens in the process of turning the emotion sympathy into a feeling of empathy. Think, for example, of being told about a horrible accident in which someone was badly injured. For a moment you may feel a twinge of pain that mirrors in your mind the pain of the person in question. […] The presumed mechanism for producing this sort of feeling is a variety of what I have called the "as-if-body-loop" mechanism. (115)

The “as-if-body-loop” is how Damasio understands our ability to experience emotions because of events that happen to other people. Affect responds to the narration of another’s experience. As Holland puts it, “the mere fact that we are reading or hearing or seeing a sequence of words or images makes us believe in it—at least temporarily”(Holland 3).

I am willing to accept that our species enjoys fiction and that, whether by evolution, chance, or mischance, stories can create emotional experiences in readers. Something in the nature of stories catches our attention and, while it is interesting to explore what it is about the brain that makes such experiences possible, my interest lies in the other side of this particular coin: what sort of tools, styles, approaches, and structural choices lend a story its particular emotional clout? Taking ourselves and our responses as one half of this human-text dyad that constructs a story, we turn to the text and its design to seek the elements that invite specific kinds of emotional responses.[53]

In this chapter, I will explore how the transition from printed codex to digital book changes the affective capabilities of a narrative and how the same plot functions differently when recreated in a new form for a different medium. This transformation, though highlighted by the movement from paper to pixel, is better described by the movement from static texts to interactive texts. Interactivity, as Chris Crawford defines it in *The Art of Interactive Design*, is like a conversation between the reader and the text where the text changes in response to the reader's input. This chapter, though ostensibly about the

[53] Holland is adamant that the only reasonable explanation for how the experience of reading is constructed in the brain is the "reader-active model." Put simply, the reader does all the work in constructing the text. In response to that critique, I would argue that, while he is not wrong, the reader-active model is mostly irrelevant when it comes to answering questions about the tools that a text has at its disposal to evoke affect in a reader. His point is that those tools are almost all culturally constructed by the reader and her society. My point is that, having acknowledged that fact, we can still talk about the construction of the text—which also happens in a cultural context—as part of the bedrock of any analysis. Holland does this as well. When he discusses the expectation/payoff of one of Edward Lear's limericks, he does not preface the conversation with an acknowledgement that a reader either unfamiliar with the structure of the limerick or with the English language will not successfully experience SEEKing and reward in her reading. So while Holland would probably balk at my framing of the reader and text as a dyad in an intersubjective relationship, I maintain that it's an accurate portrayal of the experience of reading. The fact that the text is never the text as-such, but the text as-read is a problem of ontology. But it's not my problem.

development of *Frankenstein* from print to digital forms, focuses more specifically on how the text's capacity to affect the reader changes as it becomes interactive. *Frankenstein*, by Mary Shelley, is one of the most adapted novels (if not stories) in our cultural lexicon, and the story of the creature who turns on his creator has taken on a life of its own far beyond the boundaries of the text. Although leaving behind the exact narrative Shelley chooses to tell, *Frankenstein* still serves as the archetype for every narrative I will address in depth in this chapter. Moving from the original to early works of hypertext, digital books on the iPad and beyond, my goal is to identify what it is in the text—and, when necessary, myself—that engenders affective response to the story the text tells. Looking at the work as a whole, I identify the features of form, design, and language that interface design reads as relevant to constructing emotional response in the reader. I question how the book influences the reader's feelings about its contents and I look at how the reader's response to digital, interactive narratives is different from that of the more traditional book form[54]. Rather than reading any version of the text as ideal, my analysis explains how the form of the text plays a role in what kind of affective responses are possible.

[54] When I speak about the reader, I mean both the amorphous, anonymous figure receiving the contents of the text and the particular reader actually reading it (I.e. me). I speak often from the perspective of the reader, discussing what "she" feels and how the texts affects "her." So this reader is both generic and reflective of my experience: she is an invitation to my readers to feel the same way. This style, which is often adopted by scholars writing about the experience of literature, assumes that their own readers will, if not agree with the generic reader posited, at least sympathize with that reading. I try to be persuasive, but more importantly, I wish to demonstrate how to read for affective responses. In walking my readers through my reading, I aim to demonstrate my methodology even to readers who disagree with my conclusions.

**I. Framing Affect in Frankenstein**

Though I stand by my statement that there is no ideal form for "the book" (only forms better or worse suited to a given narrative), I still choose to begin my discussion of *Frankenstein* with the print codex in deference to both chronology and influence. The digital editions of *Frankenstein* are read, inevitably, against the original text.[55] In the original text, both the Romantic sentiments on which it dwells and the structure of the narrative itself are an integral part of building the reader's affective responses to the text. *Frankenstein* emphasizes the affective experience of the sublime, which plays a critical role in dictating the reader's feelings for the characters. In addition, the form of the text—the frame—works like an interface to exert control over how the reader responds to the narrative.In this case, the frame is part of the text rather than the metatextual layout, but I argue that both the sublime and the frame tell us how to allocate our identification rather than simply telling us which affects to share with the characters. The structure of the text makes it clear that we are meant to feel *with* the creature even if we feel *for* both him and his creator. This ongoing negotiation of affect between reader and text—what the text invites us to read into it and the responses it invites us to have—provide the building blocks upon which interactive, digital texts will expand.

I have chosen the following two examples of how affect functions in Frankenstein because I think they exemplify two disparate ways that texts create affective bonds with their readers. The first, which is honored more in the breach in *Frankenstein*, consists of the ways

[55] Original is something of a misnomer when dealing with *Frankenstein*, given that we have access to Shelley's early manuscript (with Percy's emendations), her 1818 edition, and her 1831 revision. Absent any other designation, when I say *Frankenstein*, I mean the 1818 edition.

in which the content of the text evokes feeling: the events of a narrative might please or anger the reader, yet the descriptive language can create the experience of wonder. In this case, the act of reading turns the book into a co-constructor of the reader's emotional state and, perforce, subjectivity. What I feel through reading becomes a part of who I am. The second example of fostering the experience of intersubjectivity through sharing affect is located in the characters. This is what I referred to above as "feeling with". In this case, the reader feels what the character feels—or a mediated version thereof. Here, the text almost fades away and the characters in the text become the locus of identification. This ability to generate a theory of mind, to imagine and understand that others have minds like we do, and to imagine their experience *as if* it were happening to us, is why we read fiction, according to Lisa Zunshine. "On some level, then" she argues, "works of fiction manage to 'cheat' these mechanisms into 'believing' that they are in the presence of material that they were 'designed to process, that is, that they are in the presence of agents endowed with a potential for a rich array of intentional stances" (10). Fiction allows the reader to take on the mental states of others, walking in their shoes for however many miles the book allows. It is, I think, a short jump from there to seeing fiction as activating Damasio's "as-if-body-loop". After all, an integral part of imagining other's mental states is attempting to embody their emotional mental states in one's own body. As readers, we "try on" the mental states of others and, in doing so, we inhabit a mediated version of them. Zunshine shows that the behaviors in which we engage when interacting with others—reading cues, imagining the mental states that match them, responding affectively and empathically to their mental states by feeling with them—are fundamentally applicable to the way we read as well. The mental state of the other is always mediated; reading just takes that one step further.

My argument here is reminiscent of another, familiar argument about fiction: reading bolsters empathy. This is, as my readers may remember, one of the problems of the digital book. The digital book does not evoke empathy to the same degree as the paper book, which implies that narratives are supposed to create an empathic experience where the reader does not merely feel for the characters, but feels along with them. This idea is often raised under controversial circumstances wherein reading as an exercise in empathy is often framed as a moral imperative to read in order to better empathize with other people. Suzanne Keen's book, *Empathy and the Novel*, expands on the problems with understanding reading through such a lens. Her work settles firmly on the idea that the novel is a place for readers to practice empathy and that is part of its appeal, but we should not expect empathic reading to translate to empathic behavior. Which is a roundabout way of recognizing that the book is often a vehicle for promoting empathy in the reader, but that empathy is limited to the characters in the book. Like Zunshine's view of mental states, Keen believes that we enjoy the empathic for its own sake.

Though I divided sympathy and empathy as separate ways that a text can affect the reader's emotional state, they are intertwined in a text. Often, it is impossible to disentangle my anger at the events in the text from the character's anger at the same events as they experience them. There are some exceptions, such as when I have information the character does not have, but identification with the character and affective response to the narrative often work together to make the reader respond. This interconnectedness is a feature of traditional narratives that is not always shared by interactive fiction and digital methods of storytelling that, rather than inviting the reader to share a character's mental state, turns the reader herself into a character who makes these choices. But this division, while harder to

find, still exists in traditional fiction. Parsing this experience is easier in the moments when identification fails, and when the affect is presented, but not accessible. That is, the moments when I recognize the character's feeling, but feel something quite different myself. Fortunately, *Frankenstein* relies on precisely such an absence when it introduces its readers to Victor's experience of the sublime.

To talk about the sublime is to talk about the ineffability of the sublime: of all the emotional experiences, this is the one that is most impossible to gesture towards through description. Joy, sadness, anger, and disgust are fundamentally accessible through description. This is the great puzzle of narrative, after all: we experience the triumphs and vicissitudes of the characters through the text despite only experiencing them through description. The sublime is the exception, it is an emotion that transcends the bounds of description. One might be able to describe the cause of sublime feeling, but one cannot, through description, cause another person to share in the sublime feeling. "The sublime, as an object of experience, is epistemologically inaccessible" (Richardson quoting Sircello, 22). So too, one could describe what it feels like to have a sublime experience—as Burke does, calling it "a 'sort of swelling' that proves, however violent, nonetheless 'extremely grateful to the human mind'." (Richardson 27)—and yet that experience is not shared through the description. From the perspective of the reader, then, the sublime is the least interesting emotion a character can experience. Tell me, as the archetypal reader I am pretending to be, of Frankenstein's horror at his brother William's death and I will feel despair along with him. But tell me, as Shelley does, of the storm atop the mountains of Switzerland and all the words in the world cannot bring me to share Frankenstein's experience of the sublime. "While I watched the storm, so beautiful yet terrific, I wandered on with a hasty step. This

noble war in the sky elevated my spirits; I clasped my hands, and exclaimed aloud, 'William, dear angel! this is thy funeral, this thy dirge!'" (Shelley 50). Frankenstein categorizes the experience as "beautiful yet terrific," an explicit reworking of Burke's sublime wherein the transcendence arises out of terror. My spirits are not elevated along with my narrator's; though I might feel the weight of William's death less, I have no access to the emotional transformation where the sublime takes one through fear into a place of momentary peace.[56]

In all fairness, neither does Frankenstein. In the very next sentence, his sublime elegy is interrupted when "[a] flash of lightning illuminated the object, and discovered its shape plainly to me; its gigantic stature, and the deformity of its aspect, more hideous than belongs to humanity, instantly informed me that it was the wretch, the filthy dæmon to whom I had given life." Terror has reinfiltrated the sublime. To put it in Burkian terms, if the sublime is mediated terror, then the sudden appearance of the creature removes the mediator, and Frankenstein is left with the immanence of fear. The creature appears and the possibility of the sublime disappears.

The resurgence of unmediated terror into the realm of the mediated sublime is often read as Shelley's critique of the Romantic Sublime, although the content of that critique and the specifics of the Gothic's destabilization of the sublime depends on the individual critic (as David Morris, Vijay Mishra, and Andrew Smith each explain in their own fashion). These writers focus on the impossibility of the philosophical project of the sublime; there is no

[56] As Alan Liu noted in response to this chapter, there is no good way to settle the question of whether my reaction is representative merely of a 21st century reader or whether Shelley's contemporaries would have found the evocation of the sublime equally inaccessible. My reading of the sublime would suggest the latter, although it remains something of an open question. The Rabbis in the Talmud have a phrase, "teiku," that they deploy in response to questions that are both academic and unanswerable. This seems like an appropriate place to use it as well.

transcendence beyond subjectivity, as Smith would have it (43). According to this view, Frankenstein's experience of the sublime breaks down in the face of the creature and, moreover, it was never there to begin with. This is precisely the experience that the reader has: the anticipation of the sublime creation that crashes into disaster is, for both Frankenstein and the reader, the experience of promised sublimity that shatters into all-too-real fear. On the other hand, Frankenstein's actual experiences of the sublime—nearly all of which occur in encounters with nature—are denied to the reader through the nature of the sublime. If, as Burke argues, the sublime is mediated fear that becomes aesthetic overflow and transcendence, what do transcendence and overflow become through mediation? There is no transcendence by halves, nor is there overflow dammed by mediation. The paradox of the sublime is that it is a mediated experience that requires immediacy.

Shelley's focus on the sublime or, more precisely, Frankenstein's experience of the sublime and his attempts to recapture that experience makes identifying with Frankenstein impossible. Frankenstein's driving influence is to achieve what Smith calls the "material" sublime. The narrative explicitly links these two experiences, mirroring the tale of Frankenstein's scientific discovery with descriptions, later on, of the storm atop the Alps.

> I paused, examining and analysing all the minutiæ of causation, as exemplified in the change from life to death, and death to life, until from the midst of this darkness a sudden light broke in upon me—a light so brilliant and wondrous, yet so simple, that while I became dizzy with the immensity of the prospect which it illustrated, I was surprised […] that I alone should be reserved to discover so astonishing a secret. (Shelley 31-2)

Frankenstein's ignorance yields suddenly as the oppression of the minutiae disappears

in the face of transcendent knowledge. Frankenstein describes it as wondrous, a word he often uses in concert with sublime when describing nature. The valley of Chamounix is "wonderful and sublime" (64), while Mont Blanc is "wonderful and stupendous," with "awful majesty" (67). And it is in the valley of Chamounix where he sees the sublime thunderstorm and the experience of light piercing darkness serves to transform fear and grief into an elevation of spirit. In that vein, Frankenstein's discovery is meant to evoke the experience of the Romantic Sublime.

After describing his discovery, Frankenstein then refuses to share it with Walton (and, through Walton, with the reader). Intellectual transcendence belongs to Frankenstein alone and we are thwarted in our desire to share that feeling of light piercing the shadows. Frankenstein makes it clear that he could share this knowledge and experience with us through words. He refuses to do so, preferring instead to allow this method of accessing the sublime to disappear. As it failed him, so too it will fail everyone. Over the course of the novel, and as more of his family and friends die, Frankenstein loses access to the experience of the sublime. It is notable that, when he sets out to create a female creature, Frankenstein has lost access to that blinding light that illuminates his work. There are no more descriptions of sublime creation; the reader and Frankenstein are—affectively speaking—both denied access to that light now.

In effect, all of Frankenstein's emotional peaks are inaccessible to the reader because they are all based on the experience of the sublime. Smith claims that *Frankenstein* critiques the universalism of Burke's sublime, and argues for an experience that is entirely subjective. And while the impossibility of conveying someone else's experience of the sublime can be read as part of that critique of objectivity, I find it more fruitful to think about the effects on

the text of inaccessible emotions. Shelley constantly distances us from her main character by making his positive affective experiences entirely unavailable. While Frankenstein himself may experience a roller coaster of sublime transcendence and immanent despair, the reader is only invited along into the valleys. In doing so, Shelley breaks the sense of identification between the reader and Frankenstein. By limiting her readers to Frankenstein's negative emotions, while making his positive ones inaccessible, the reader in turn pulls away from affective identification with Frankenstein.

Shelley's depiction of Frankenstein's emotional states disrupts identification not only by denying access to his positive emotions, but also by making his negative emotions distasteful to the reader. Near the end of the first volume, Frankenstein finds himself confronted with the creature's first act of violence and its repercussions. William is dead and Justine, their family servant, is accused of the murder. Frankenstein knows the true culprit, but feels he can do nothing to defend Justine and she is eventually executed. "I could not sustain the horror of my situation; and when I perceived that the popular voice, and the countenances of the judges, had already condemned my unhappy victim, I rushed out of the court in agony. The tortures of the accused did not equal mine; she was sustained by innocence, but the fangs of remorse tore my bosom, and would not forego their hold" (Shelley 56-7). As a reader, I refuse to believe that Frankenstein's inner turmoil is equal to the affective state of a woman wrongfully condemned to death[57]. More precisely, I refuse to

[57] This is one of those moments when it behooves me to remind my readers that these responses are grounded quite specifically in my traversal of the text. I find, for the reasons I am about to discuss, that this is the moment when I truly break with Frankenstein in terms of affective identification. And while I hope my account of that break, and the intentions behind it, are persuasive, I will add that my students consistently point to this scene as the moment in the text when they begin to dislike Victor Frankenstein. Yet I cannot prove that it is the

believe that Frankenstein has any real conception of Justine's affective state. Frankenstein calls into question his own capacity to theorize another's mind. If, as Zunshine argues, part of the novel's pleasure lies in how it lets us play with embedded mental states and imagine the minds of other people imagining in turn the minds of more people, Frankenstein ruins our enjoyment by being a poor theorizer of mind. Identifying with him and his thoughts deprives us of the chance to properly theorize Justine's mind. If we identify with his emotions, we cannot access hers in turn. On the other hand, if we reach past Frankenstein to identify with her, his emotional state is repulsive. Shelley has her readers in a trap and, from the perspective of a rewarding reading experience, it feels better to identify emotionally with everyone other than Frankenstein and to withdraw from feeling with him.

I realize it might seem odd to begin my conversation about the affective power of the text with this example of how a reader resists identifying with the characters in the book. While I will go on to discuss the ways in which this text does promote identification (just not with Frankenstein), I want to emphasize the role that distance and ineffability play in crafting this relationship. Much of the research on both reading and interface design focus on engagement and Mihaly Csikszentmihalyi's concept of flow—"the experience of being completely and pleasurably absorbed in a challenging task" (Murray 102)—a state that Murray associates with the immersion that accompanies reading a good book. The user should not be disrupted or disengaged from the created object by the object itself and the form and interface should provide positive affective experiences. And while this might be true in the realm of software (although I highly doubt it), works in the process of telling a

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text pushing me away from identification rather than my own unwillingness to identify that pulls me away from the protagonist.

story are just as dependent on what Sianne Ngai calls “ugly feelings” and moments of distance. Shelley could have asked us to identify with Frankenstein and made him a fundamentally sympathetic figure. This is the approach taken by most of the movies: Frankenstein creates life, is ecstatic at his achievements, works to teach the creature, but some innate flaw in the creature’s brain renders it a monster. The moral, such as it is, is not to allow Igor to put an abnormal brain in a seven foot gorilla. For Shelley, the flaw lies with Frankenstein. It is his failure to care for, to parent, and to properly identify with the creature that engenders the tragedy. The narrative blocks us from identifying with him precisely by showing how he fails to identify with everyone else. We may feel for him, but we can never feel with him.

The text’s refusal to offer Frankenstein as an empathic figure by foreclosing emotional identification has interesting implications for the way we discuss empathy in literature. And while I will return to this point in the context of the digital book, I find that my inability, as a reader, to fit inside Frankenstein’s mental state and match my emotions to his, does not interfere with my enjoyment of the text. Granted, the text still evokes feelings for the characters that run the gamut from sympathy to deep frustration. But *Frankenstein* provides a narrative where some of the affective appreciation for reading comes not from the reader empathizing with the main character, but from her refusal to do so. I try on Frankenstein’s mental state and discover that it does not fit and so I cast it off. It is a kind of negative identification: I am what he is not. What *Frankenstein* suggests, at least throughout the entire first volume, is that empathy is only one measure of how texts evoke emotional responses and that dis-identification and turning the reader’s own impulse to empathize back on herself creates a different kind of affect-laden narrative that is still successful.

*Frankenstein* is not content with de-emphasizing Frankenstein through empathic identification. In place of identifying with Frankenstein, Shelley instead offers the obvious foil. And just as the text is designed to distance us from Frankenstein, it points us in the direction of the creature as, despite appearances, the correct target of identification. This is a canonical reading of *Frankenstein* so I do not want to belabor a point already recognized by countless others. I want, however, to draw attention to the moments where Shelley provides the means for the reader and the creature to share emotions. Unlike with Frankenstein, the creature relates his experiences to the reader in a way that invites her to feel not merely for him, but with him.

Like his creator, the creature experiences moments when the beauty of nature gazes down upon him and lifts his mood. Unlike Frankenstein, however, the emotional tenor of his experience is not sublimity, but wonder. "Soon a gentle light stole over the heavens, and gave me a sensation of pleasure. I started up, and beheld a radiant form rise from among the trees. I gazed with a kind of wonder" (Shelley 70). This is the creature's first distinct aesthetic experience, the only thing he can distinguish in his early days of confusion and sensory overload. It is also his first positive affective experience, his first sensation of pleasure. The immediacy of the experience which requires no mediation nor interpretation provides an easy point of connection between reader and creature. Rather than the indescribable majesty of somewhere inaccessible to the majority of readers, Shelley invites her readers to share in an affective experience that is profoundly familiar.[58] Instead of the mediated terror of the

[58] This is not to say that the only emotions that can be conveyed are those that happen when one person has had the exact same experience and can draw on their affective memory of it. However, the contrast between the sublime "you had to be there" specificity of Mont Blanc and the wondrous universality of the moon is telling.

sublime, the creature finds refuge in wonder and in an encounter with nature that is grounded in perception. To read his reaction is to share in his wonder and take pleasure in it alongside him, much as a parent takes pleasure in the sight of an infant's wonder. The rest of this scene emphasizes the creature's infantile nature: he learns to distinguish between his senses, he learns to look at things other than the nearby lights, and he has the quintessential child's encounter when he is first intrigued and then burned by fire. The narrative places the reader in the position of attentive parent who can, in Daniel Stern's language, begin to attune herself to the creature's emotions. The entire intersubjective process of attunement is not possible, given that the character cannot acknowledge the reader in return, but Shelley does not need that full attunement with the reader in order to keep our affective attention on the creature. Instead, the text uses his ability to attend to the emotional experiences of others to reinforce our connection with him.

In contrast to Frankenstein's ineffable experience of the sublime and sheer inability to perceive the mental state of others, the creature's intense emotional experiences happen through correct perception of others' emotions. Living as an unrecognized guest in the home of the De Laceys, the creature has ample opportunity to become a student of human nature. He decides to observe the family rather than approach. He wants to know more about them and, as it quickly becomes clear, what he seeks to know is their affective state and how their feelings correspond to the life they inhabit.

> They were not entirely happy. The young man and his companion often went apart, and appeared to weep. I saw no cause for their unhappiness; but I was deeply affected by it. […] Yet why were these gentle beings unhappy? They possessed a delightful house (for such it was in my eyes), and every luxury; they had a fire to warm them

> when chill, and delicious viands when hungry; they were dressed in excellent clothes; and, still more, they enjoyed one another's company and speech, interchanging each day looks of affection and kindness. What did their tears imply? Did they really express pain? (Shelley 76)

The creature shows here both that he is capable of perceiving the emotions of others and, more importantly, that he is capable of feeling with them without either imposing his own emotions on them or dismissing their pain because he cannot comprehend it. He is "deeply affected" by their sadness, and it is specifically their sadness rather than his own wretchedness that affects him. Yet he retains distance from their affective states. They are shared with him, but he recognizes that their sadness is not his own and comes from some other source that he cannot yet comprehend. His response is to seek (or possibly SEEK) to better understand their minds. In short, the creature is reading the De Laceys. He theorizes them and their minds as entities distinct from himself, but that can think like himself, and tries to understand and predict what behavior they can do. As the reader reading *Frankenstein* sees them through the eyes of the creature, we are drawn into his point of view. We too are moved by their tears, we wonder at the cause of their sadness. We fully inhabit the mind of the creature in these moments because the text places both the creature and the reader in the same affective position.

This scene of the creature, peering through "a small and nearly imperceptible chink through which the eye could just penetrate" (Shelley 74) frames the creature's extended stay in the De Lacey's cottage. His knowledge of them is mediated through this frame—both the actual window frame through which he looks and the sense of distance from them that makes him the outside observer of their lives. This is the deepest level of nested narratives in

*Frankenstein.* The creature pieces together the De Lacey's narrative, which he tells to Frankenstein, which Frankenstein tells to Walton, which Walton tells to his sister and, implicitly to us. So the reader receives the story through multiple layers of mediation, even as those layers are often hidden. The creature is the only character who operates within every frame of the story. He breaks into the domestic bliss of the De Laceys, he is of course integral to Frankenstein's story, and his encounter with Walton after Frankenstein's death constitutes the closing scene of the book. The creature always exceeds the frame even as the frame attempts to mediate our access. And it is this mediation on which I wish to focus.

The frame provides a narrative interface through which the reader accesses the story. Here, I see Alexander Galloway's definition of the interface as "the point of transition between different mediatic layers within any nested system" (31) as applying to narrative layers as well, although I think it worth noting that there is also a shift between media as we move from reading Walton's letters to listening to Frankenstein's retelling of his life. Walton's letters mostly disappear while Frankenstein is narrating, although we learn at the end that the document we are reading was shown to Frankenstein and he "corrected and augmented them in many places; but principally in giving the life and spirit to the conversations he held with his enemy. 'Since you have preserved my narration,' said he, 'I would not that a mutilated one should go down to posterity'" (Shelley 151). Like an interface, the frame purports to reassert itself only in moments where its visibility adds to the experience rather than detracts from it. Frankenstein's emendations add to the narrative's veracity, alongside the letters from Felix and Safie, as an additional layer of media to which Walton's letters provide access. This is precisely what Lori Emerson claims the interface does: it gestures towards transparency and, in doing so, obscures its own mediation.

Like the interface, the frame narrative pretends to transparency and recedes from view in order to simply present the story. And like the interface, there is no such thing as a transparent frame. While it is easier for Walton to recede from view while one is reading Frankenstein's sections, it is impossible to entirely forget that Frankenstein is telling his story to an audience. He is performing his own tragedy for Walton. The creature is doing the same thing; he performs his life for Frankenstein in a bid to elicit sympathy from his creator. So the reader is simultaneously encountering a narrative with which she is asked to sympathize and encountering the narrative of someone else being asked to sympathize with that same first narrative. The frame functions like a tutorial in an unfamiliar interface, guiding readers along in their affective engagement by providing examples of how narrative is meant to move the characters. Even Frankenstein, who the reader already recognizes is terrible at feeling with others, is affected by the creature. "His words had a strange effect upon me. I compassionated him, and sometimes felt a wish to console him; but when I looked upon him, when I saw the filthy mass that moved and talked, my heart sickened, and my feelings were altered to those of horror and hatred" (Shelley 103). How fortunate for the reader that they can never see the creature except through the medium of words and so cannot have their empathy destroyed. Seeing—unmediated encounters—are the creature's bane, while mediation through narrative and words are, paradoxically, what allow M. De Lacey and the reader access to the true creature.

Interestingly enough, the frame narrative accomplishes the opposite goal for Frankenstein himself. The frame narrative draws attention to Frankenstein's sense of self as constructed. It influences the negative identification we have with him, leading us to question his self-representation in a way that a neutral and objective recitation would not. The

interference of the frame reminds the reader to question the knowledge she sees through it and reminds her that that which she sees through it may be distorted by the narrator. The same tutorial that shows the reader how to sympathize with the creature despite his appearances also invites her to question the appearance of Frankenstein's self-presentation. The narrative frame and narrative content work in tandem to bring about the dis-identification of the reader with Frankenstein.

In this respect, the frame as interface calls attention to questions of knowledge and truth in the text. Walton uses the letters from Felix and Safie to substantiate the narrative even though the reader, of course, will never actually see those letters because they do not exist. So the frame deposits the text in a liminal space where it is always making claims towards the truth and simultaneously undermining them, leaving the reader somewhat unsure. This may be the reason that frightening stories are told in a mediated fashion. To pick two examples that have also been adapted into interactive digital editions, Bram Stoker's *Dracula* relies on media to tell its story, expanding beyond letters into diary entries, newspaper clippings, and transcripts of audio to piece together the narrative[59]. Writing right around the third edition of *Frankenstein*'s publication, Edgar Allen Poe writes in first person, but often has his characters telling their stories as retrospective. "The Tell-tale Heart" is told from a distance, the narrator reflecting back on his "perfectly sane" behavior. *Frankenstein*, told through letters and through multiple retrospectives, engages in this same mediation: other people and their memorabilia are the narrative medium. The words on the page do not promise immediate access to the story, but the story is accessible only through the interface

[59] See David Seed's "The Narrative Method of Dracula," Jennifer Wicke's "Vampiric Typewriting: Dracula and its Media," and, if possible, the now sadly though understandably defunct iPad edition of Dracula published by PadWorX.

of another person and another text.

The hypermediated narrative that draws attention to its own mediation explicitly complicates any claims the narrative might have to truth. It deliberately muddies the waters by combining fictive narratives with the media that verify non-fiction. The man writing to his sister (Walton), the diarist on a journey (Jonathan Harker), the old and grizzled wedding guest with a sea yarn (Coleridge's Ancient Mariner, who also appears in *Frankenstein*) are familiar and seem real even as the experiences they describe are unearthly. The frame is reminiscent of Freud's uncanny and the reason for the horror is precisely because that which was settled becomes unsettled and unsettling. Frames muddle genres, so Walton's metaleptic encounter with Frankenstein almost functions as an interface between the travelogue and the supernatural drama. Like the creature, the uncanny seems to escape its narrative and creeps into the real world, which is itself just another layer of narrative and interface between us and it.

Thinking about interfaces brings up questions of affordances, which are usually phrased as asking what the interface allows one to do. The inverse question, what does the interface preclude one from doing and in what way does it limit one's access, is usually far more revealing. In *Frankenstein*, the frame limits affective access to the minds of the characters. The narrative always exists in a performed state. Even Walton does not give unmediated access to his thoughts (or the pretense of such through the medium of a diary). Instead, the frame works to distance the reader from each narrator so that she can question her willingness to feel with them. Each one asks for readerly sympathy in turn, while the reader is left to decide which character best elicits not merely sympathy, but empathy. The most sympathetic character is also the one whose affects cannot be contained by the frame

and who, as stated before, breaks into every other level of the narrative. In this sense, the limits of the narrative interface exist for the creature to transcend them. That which exceeds the interface, that which transcends beyond the limits set for it is also the source of our affective engagement with the text. We feel with the creature and we make its emotions real because it is also the only figure that can reach beyond the affordances of the frame. And, in doing so, we implicitly grant it the capacity to exceed the real interface, that of the book.

**II. Hypertext UX: Feeling Along With The Patchwork Girl**

From the grand perspective of history, *Frankenstein*'s success and, more specifically, the creature's success is not exactly surprising. As the affective core of the novel, he transcends his creator to such a degree that it is a point of pedantic pride to know that Frankenstein is the creator and not the creation. The movies certainly did not hinder this displacement: it is unclear whether *Bride of Frankenstein* (1935) is about a bride for the creature or for Frankenstein and, by the time Frankenstein met the Wolf-man in 1943, the popular concept was that of the monster and not of the man. Shelley's framing of the text as predominantly the creature's story worked; the readers feel for and with him and the overall affective experience of the text turns on the creature and not the man. Turning to the early digital works based on *Frankenstein*, the creature takes its entirely expected place at the center of the text.

Shelley Jackson's *Patchwork Girl*, released in 1993, tells the story of the female creature that Victor destroys. *Patchwork Girl* is one of the last texts in the canon of hypertext

fiction[60]. A small canon, it appears to begin with Michael Joyce' *afternoon, a story* and cycles through several other texts before closing with *Patchwork Girl,* itself already a shift away from earlier hypertext fictions. As Marie Laure-Ryan observes, *Patchwork Girl* tends more towards the "open archive" rather than the labyrinthine style of *afternoon.* She describes Joyce's narrative arc as "endless looping," a project of constantly revisiting individual pieces of texts to find the hyperlink that will unlock the mystery and reveal the hidden lexia (Ryan 147). Jackson not only provides a multiplicity of stories, she makes visible the network itself so that the reader can always find her way back out and can access the entire story. The Storyspace interface is kept visible for the reader and the paradox of interface works its magic. The very visibility of the interface makes it recede in the reader's mind as just an additional helpful tool for navigation. The narrative, not quite puzzle, not quite straightforward line, is stitched together through the reader's behavior in a way that mimics the construction of the Patchwork Girl herself.

According to this hypertext, Mary herself (re)builds the Patchwork Girl and sends her out into the world. The text itself has five sections: the act of writing (body of text), Mary Shelley's journal, a crazy quilt, the Patchwork Girl's story, and the graveyard of dismembered parts that were used to construct her. Each section is fairly self-contained and is navigable either using the hyperlinked words contained in each block of text (or lexia) or by checking the spatialized map of connections that Jackson leaves visible and available for the

[60] I am not, of course, making the ludicrous claim that no hypertext fiction has been written since *Patchwork Girl*. But if we think of it as a distinct genre with its own set of formative texts, *Patchwork Girl* is the final text in that canon. There are, as far as I can tell, no agreed-upon later texts that have either the ubiquity or influence of those mentioned above. Granted, there has been a nearly 20 year gap in productions of well known hypertexts, but they seem to be making a resurgence with newer compositional tools.

reader. The project of reading *Patchwork Girl* is the process of reconstructing the character and the story at once, reading the body that is the text to turn both into something that feels approachable as an other that can generate affect in the reader. Since the reader is not "just" reading the text in order, but constructing a new experience out of the spatialized text by hopping from one lexia to another, some of the usual methods by which narratives bring readers into their sphere are no longer effective. In the following pages, I explore the ways in which *Patchwork Girl* and other texts find methods better suited to these indeterminate narratives for conveying affect. Doing so, however, requires turning the conversation first to the "usual methods" that now fail the hypertext reader.

One of the critiques of hypertext asserts that such texts can never become more than an intricate puzzle and will never transport the reader into the narrative and permit the sort of identification one has with the creature in *Frankenstein*. Norman Holland's aside about hypertext is as follows: "Because the reader constantly acts on the work, the experience of being transported becomes impossible. The world cannot evaporate, nor can we feel transported into the world of the story. Instead, we are busy at the computer. I suspect this is why hypertext has never caught on with the reading public. We want that trance-like experience" (41). For Holland, the ideal reading experience is that of being enraptured, transported, swept away by the text in a way that makes it seem emotionally real and "as-if" it was really happening. Hypertext, he argues, is always about the self and the reader's choice, which prevents the moment when the text takes the reader over and makes the reader part of itself.

Holland makes two separate claims here. First, hypertext literature cannot bring about the experience of enrapture. Second, the appeal of fiction is in its ability to enrapture and, in

failing to do that, hypertext will never take off. Holland is not alone in this contention, specifically that the appeal of fiction is its capacity to transport. In *Experiencing Narrative Worlds,* Richard Gerrig argues that we perform fiction and, through it, are transported. He grounds his choice of language in the experience of reading; we feel we are enacting the text and, in doing so, we enter into it. For Gerrig, fiction's success lies in this capacity to take the reader away. Werner Wolf makes a similar case. "[I]t instructs us about how we and others would feel if recentered in such situations as emotional and thinking beings with certain potentials and limitations, what it would be like to act in certain ways or remain passive, and what it would feel like to experience the consequences that could arise for ourselves and others." Literature scripts the performance, literature instructs us how to feel. The mind's response to literature is to follow the latter's suggestion and not the other way around. These formulations of the emotional tenor of aesthetic experience are all predicated on the idea of the reader's reaction, rather than interaction.

In *Literature and the Brain*, Holland cites an article he co-wrote in 1984 as evidence that transport and enrapture play no role in hypertext. In that article, appropriately titled "Interactive Fiction," Neisz and Holland compare interactive fiction to more traditional forms, noting that the former presents the world as a puzzle to solve, while the latter promises a world that feels expansive and unknowable beyond the range of the text[61].

[61] Neisz and Holland use "interactive text' and "interactive fiction" as a catchall term for digital fiction where the reader has some agency in what comes next. There is no true consensus over what exactly constitutes interactive fiction: Nick Montfort limits interactive fiction specifically to texts where the reader inputs words and a parser in the text "reads" them to present the appropriate response. Other authors seem to use it the way that Espen Aarseth uses "cybertext" as a text with some form of information feedback loop.
For the purposes of this dissertation, I will use the term interactive text/fiction when discussing the larger genre. Despite all its inaccuracies and faults, it remains the clearest

> [A] reader, whether of Henry James or Charles Dickens, is likely to feel that the fictional world she has inferred from the novel, is in some final sense mysterious and unknowable, beyond her grasp, beyond even that of the most willing author. By contrast, the reader of an interactive text is likely to feel that she can know and master this fictional universe. She is likely, in other words, to experience the optimism of the scientist at least as much as the mystery of art. (122)

Holland and Neisz claim that the absence of the fictional world, replaced by the finite expanse of the interactive fiction where all remains to be discovered, prevents this sense of enrapture. As Holland and Neisz were writing in 1984, I cannot help but feel that their claim is premature, although consistent with what was available to them. More troubling is that Holland's more recent claim was made in 2009 while relying on research from twenty-five years earlier. It is unfair to the genre to state that it has remained unchanged in the past twenty-five years and that it cannot support readerly enrapture without providing evidence of such stasis. It seems as though Holland's critique is grounded in the premise that because interactive fiction had not successfully told an immersive tale by 1984, it never will. Moreover, the technology required to read and author hypertext was neither widely available nor cheap. It is only within the last decade or so that ebooks have become a reasonable method of consuming text and only within the last five years that systems for producing interactive fiction—the equivalents of the word processor—have become affordable and easy to use.

Leaving aside that objection, I turn to the problem of enrapture and transport as the

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signifier of the genre. When I'm referring to Interactive Fiction as a subset of that genre, I will either abbreviate it as IF or capitalize it.

critical feature of narrative. Here, all these authors privilege the experience of imagining a secondary world and immersing oneself in it fully as the ideal form of literary engagement. This is a view of narrative that emphasizes identification—a model of fiction that turns on our capacity to feel with. It is easy to slip from arguing for the appeal of such print narratives to presuming that stories in other media that provide other methods of engagement are unappealing. There are any number of texts that fail to transport the reader into narrative spaces; it does not follow that such texts are beneath notice. A work may need rapture to be popular, but it certainly does not need it to be good. I would also point out that learning to critique literature is a life-long exercise in setting aside enrapture in order to regain distance from the text and be able to assess its aesthetic power. One cannot read critically and with rapture simultaneously. To read critically is to set aside immersion, for a moment, but if the purpose of reading is enrapture, then the critical reading becomes a lesser and less valued method of engaging with a text[62]. One also, incidentally, can rarely read a text for the express purpose of determining whether one is enraptured by it. The awareness of one's personal interest in the feeling of immersion makes experiencing the actual state extremely difficult. So even if these claims were true and interactive texts cannot provide the experience of transport, that is only one mode of experiencing texts among many. Holland may focus on

[62] One could speculate on what it would feel like to read with both absolute transport and a keen critical eye in the same moment. Would the act of highlighting or note-taking break the illusion? This thought experiment almost works with poetry: I can imagine reading a short poem and both being transported by the language and being aware of the words that make the transport possible. I'm fairly sure I can only imagine it, though. Maintaining that dual awareness for the length of even a short story beggars belief. One might argue, conversely, that returning to the text after having been transported by it is the ideal method of approach. To steal William Wodsworth's description of poetry from his Preface to Lyrical Ballads, "it takes its origin from emotion recollected in tranquility." Perhaps literary criticism works the same way.

transport as the fundamental feature that makes print narratives so appealing, but there is no reason to assume that digital fiction is subject to the same rules.

To put it another way, interactive texts have multiple ways of building affective rapport with the reader and drawing her into a relationship where the reader has the experience of being affected by the text. To frame this in terms of the distinction I made earlier in this chapter, works of interactive fiction are extremely good at creating narratives that evoke feeling, but they are ill suited for crafting narratives of identification. For example, one of Interactive Fiction's favorite conceits is the second person narrative that speaks to the reader and announces that you are in the narrative world and making choices. Narratives that address the reader in the second person implicate the reader in the narrative. The reader enjoys placing herself in the world posited by the text, rather than living it vicariously through the characters. The disconnect found in being simultaneously a character in the story and a reader outside of it prevents the experience of transport, but one can experience a story and even attune oneself emotionally to it without necessarily being transported by it. These are the kinds of fiction/game structures that Michael James Heron and Pauline Helen Belford call empathic puzzlers. They are "games that offer free-form exploration within a narrative" and they argue that such games "can be said to test our empathic understanding and awareness of social and physical context." Heron and Belford are more interested in making a case for specific instantiations of these slow-building, affective experiences as games, but the term "empathic puzzler" is a profoundly useful one for understanding the kind of emotional experiences that hypertexts not only provide, but also excel in presenting. Interactive texts and games allow us, as readers, to try on scenarios and entire worlds radically different than our own and experiment with how we would

react[63]. Like Zunshine's argument about why we read fiction, "our enjoyment of fiction is predicated--at least in part--upon our awareness of our "trying on" mental states potentially available to us but at a given moment differing from our own" (17). Heron and Belford argue that we read and play interactive narratives in order to experience events, mental states, and emotions that are still our own, but inaccessible in the ordinary course of events.

To be clear, this is not an argument that paper books always engage in enrapture and identification or that books must do so in order to be good. Especially outside the novel genre, but even inside it as well, some books choose not to take this route and are successful for other reasons. The transportive book is not the only book, but it is the fictional narrative that we discuss with the most feeling. The books we love are often the books in which we lose ourselves and come back only reticently. Since interactive books—such as digital books—seem to be quite bad at this kind of affective engagement, it makes sense to turn towards alternative methods of generating affective experiences that depend, instead, on what interactive books do best. Instead of being enraptured by the text, we wrap ourselves in the text and take over.

As an illustrative example, I want to discuss a work of hypertext that takes advantage of the reader's ability to interact with the text to generate an emotional experience in the

[63] Heron and Belford make a very strong case for not recategorizing the objects they study. They emphasize that the narrative and exploratory elements of these objects should not preclude them from being considered games. They are correct, although that does open up the question of what is a game and what is a digital book. The distinction I think most valuable lies in how the reader engages with the object. Does she explore the play space by looking at it or reading about it? The former is a game. The latter is a book. Game or book is a question of media, not simply the medium in which the the narrative is presented, but the way that the narrative is mediated. That is, words or images.
All of the games that Heron and Belford discuss are visual puzzles. All the works I discuss use written language to convey meaning.

reader. Zoë Quinn's "Depression Quest, A Work of Interactive (non)Fiction"[64] positions the reader as the person in the story to whom everything is happening, giving her the chance to make the choices that a person with depression faces.

> Depression Quest is a game that deals with living with depression in a very literal way. This game is not meant to be a fun or lighthearted experience. […]The goal of this game is twofold: firstly, we want to illustrate as clearly as possible what depression is like, so that it may be better understood by people without depression. Hopefully this can be something to spread awareness and fight against the social stigma and misunderstandings that depression sufferers face. Secondly, our hope is that in presenting as real a simulation of depression as possible, other sufferers will come to know that they aren't alone, and hopefully derive some measure of comfort from that.

Told, like many works of interactive fiction, in second person, the text begins by giving "you" as both reader and character some information about your life and, in doing so, already weaves in the low levels of self esteem, lack of motivation, and ennui characteristic of depression. As the text progresses, you are given choices as to how you can handle ordinary events such as going to a party or doing work. Notably, the "healthiest" option is always in a red font and struck through with a line, indicating that it is unavailable. You can never just "Let [your mom] know that you've been feeling down lately, and that you appreciate her concern." You can only ever "Change the subject" or "Tell her that everything is fine." As the game progresses and depending on the previous choices you made, fewer of

[64] Quinn's title is a perfect example of the slippage of meaning between hypertext, IF, and other forms of digital fiction. Though it does not meet Montfort's criteria for IF, *Depression Quest*'s subtitle reads perfectly as a description of what this textual object is.

the links are actually available for you to choose, further limiting your ability to make choices that can lead to recovery. The narrative is upfront about your feelings, informing you that you feel anxious for letting your significant other down or bad for lying to your mother. While the interface performs the experience of depression through showing the ideal choices without ever providing access to those choices, the lexia themselves contain simple descriptions of "your" mental state and hopelessness. This style of description, so typical of interactive fictions, is part of what allows the reader to be the "you" of the text.

Though the reader is not (and is not meant to be) transported, "Depression Quest" manages to convey the emotional experience of having depression. The act of working through the text and the way that the reader both creates the narrative and is fundamentally frustrated by it is a feature of interactive fiction (Holland and Neisz 121-2), but Quinn et. al. turn that frustration into the fulcrum that makes their narrative possible. Depression, unlike sadness that can be cathartic, meets Sianne Ngai's criteria for an "ugly feeling" or feelings that are "explicitly amoral and non cathartic, offering no satisfactions of virtue, however oblique, nor any therapeutic or purifying release" (6). For Ngai, these feelings produce "art that produces and foregrounds a failure of emotional release" (9). For the reader who must explore every single facet of the finite interactive fiction and who, usually, sees these works as puzzles to unravel, the harsh red of the options you cannot take provides precisely this emotional buildup with no chance of release. "Depression Quest" is designed against the ideas of good design: it is frustrating to play, it is inscrutable (how come I couldn't call the therapist yesterday, but I can today?), it presents options the user can't access. At the same time, it manages to capture the experience of suffering from depression in a way that achieves the dual aims stated in the introduction. It makes the experience of depression

accessible to someone who does not have it by creating what amounts to a depressed interface to a narrative about depression. The choices in the interface come to represent "your" inner state. Yet the text resonates strongly with those who have experienced depression, transforming the ugly feelings into nearly joyful ones through the message "you are not alone". The text functions as an empathic subject for the reader; it knows how you feel because the "you" of the text feels the same. The shared experience of depression transcends the actual affect of the text, co-creating a more positive experience through its interaction with the reader. And, at the end, the text is not designed to make the reader feel utterly hopeless in the face of depression. Sometimes, if everything goes just right, there is no catharsis, but there is a future.

Reading interactive texts requires recognizing that it is a different literary animal than its non-interactive predecessor and that it invites a different kind of identification. The reader is supposed to exist simultaneously as self and character, rather than be subsumed into the characters' psyches and the experience of reading. This is the appeal of the empathic puzzler, the interactive narrative that asks the reader to imagine scenarios. Agency does not replace transport, but it fulfills the same role of making the reader identify with the narrative and its characters. The "you" who is the main character responds to the reader's choices and, to a degree, does the reader's bidding, but the text that addresses me in second person does not really address me. It is another mechanism by which the "as-if" loop can work, but the "as-if" in question relies on pretending to be in a specific scenario, rather than trying on a set of mental states.

*Patchwork Girl,* which has a main character independent of the "you" often addressed by interactive fiction, complicates this idea somewhat. *Patchwork Girl* still uses the second

person of interactive fiction, but sparingly. The opening lexia provides several ways for the narrative to begin. Under the title, subtitle, and authors, there are five places where the text can begin (fig.). Provided the reader begins with the first link she can select (a fair assumption as, absent any other directions, we have learned to begin at the beginning), she is first taken to a black and white image of a puzzle of body parts scattered haphazardly and, with another click, the lexia "I am buried here. You can resurrect me, but only piecemeal. If you want to see the whole, you will have to sew me together yourself" (title page/hercut4/graveyard). This is the project of *Patchwork Girl*.

Taken solely as the construction of a person and her narrative, the affective measure of the text differs little from that of the Talmud. The reader is the SEEKer and the text is the puzzle. The goal, the affective joy of the text lies in exhuming the individual pieces to understand what happens. Insofar as the goal of the text is to make meaning, the process of uncovering the text and digging into the disparate pieces that Jackson offers up as the stories of becoming has already been discussed. *Patchwork Girl* functions as a metaphor for both lived experience and digital composition (Hayles) or a "parable of writing and identity" (Landow 234). Jackson provides her own gloss on the text she "wrote" (for lack of a better term).

> I would like to introduce a different kind of novel, the patchwork girl, a creature who's entirely content to be the turn of a kaleidoscope, an exquisite corpse, a field on which copulas copulate, the chance encounter of an umbrella and a sewing machine on an operating table. The hypertext. (Stitch Bitch 7)

Jackson's novel is one that returns focus to messiness and embodiment. It revels, as she says, in the discomfort and search for meaning. Hypertext does not always reward the SEEKer

with simple answers, but the pleasure of the text is in its construction. There are, however, affects in this text beyond SEEKING. Jackson tells the multivocal story of the Patchwork Girl and all her disparate limbs. Those vignettes, buried in the graveyard, are also affective (which is to say effective) while creating this sense of a person. How, then, does *Patchwork Girl*, despite or because of its form, build a character for the reader to relate to and with whom the reader can share emotional experiences?

*Patchwork Girl*, as a work of hypertext fiction, resembles a very structured conversation between the I of the narrative, Scraps the Patchwork Girl, and the you of the reader. The reader is the Patchwork Girl's audience and clicking on the lexia replicates less the experience of turning a page than asking a question. Those questions tend to take the form of selecting a word to move the narrative forward, as if asking "what comes next?" and selecting a word to ask for more information about it, as if asking "what do you mean?" These actions turn *Patchwork Girl* into a conversation between the reader and the text, which is, to return to Chris Crawford, the defining feature of interactivity. "[I]nteraction: a cyclic process in which two actors alternately listen, think, and speak" (Crawford 27). *Patchwork Girl* works as a conversation on both the level of the text and the level of the processes. Crawford glosses listen, think, and speak as input, process, and output respectively when they occur in the realm of computation and asks the designer to think of listening, thinking, and speaking as metaphors for what each interactor can do. The software "listens" to the reader's input of the selection of a hypertext link, "thinks" about what to say next by processing the click to invoke the next lexia, and "speaks" by showing that lexia to the reader. The effects of that interaction in the story replicates those of the conversation when the reader requests more information and the Patchwork Girl considers what to say next

before providing that information. Reading *Patchwork Girl* is like meeting a person for the first time and getting to know them through careful questioning.

The narrative opens with a conundrum: “I am buried here” and “You can resurrect me”. There is an I, it is inaccessible, and it is your job as the reader to find me. The graveyard is the most IF-esque portion of the text; it rewards the careful exploration that characterizes Interactive Fiction. At the same time, the clicking through to new lexia also generates new body parts that belong to the speaker and moves the narrative from a spatialized exploration of a graveyard to that of a person newly risen from it. I click around in order to explore and build a person, not to find out what happens next. The hyperlinks act like conversation forks, letting the reader choose what to discover next.

> My birth takes place more than once. In the plea of a bygone monster; from a bloody hole by corpselight; from a needle and from a pen.
>
> Or it takes place not at all.
>
> But if I hope to tell a good story, I must leapfrog out of the muddle of my several births to the day I parted for the last time from the author of my being, and set out to write my own destiny.

Jackson’s solution to the “problem” of hypertext—how to tell a good story—is to perform the story through her main character. *Patchwork Girl*’s narrative is disjointed, complex, fitted together out of individual parts by the figure of an author and by herself and by the reader. The reader is not, as early proponents of hypertext suggest, the transcendent figure who authors for herself a new text (Ryan 12), but rather a figure ultimately constrained by the presence of another trying to do exactly the same thing, but with many more resources. The creature, birthing herself by writing her narrative, imbricates the reader into the narrative as

the story's midwife. According to Christopher Keep's analysis of *Patchwork Girl*, "[t]he text presents itself as more than a variety of malleable materials to be arranged at will; it has a robust alterity that persistently draws attention to itself, which addresses the reader, and compels her awareness of the text as a productive force in its own right, calling itself into being as much as it is called into being by either author or reader" *Patchwork Girl* is an actor that acts with or against the reader but, most importantly, as an independent figure who can interact with the reader.

In helping Scraps come to life, the reader is positioned by the narrative as listening friend. In this respect, *Patchwork Girl* is a version of Heron and Belford's affective puzzler that, while possessing a narrative, is interested primarily in locating the reader in the text as a correspondent. The lexia and hyperlinks are how the reader interrogates the text and the autodidactic text writes back (or has already been written back). Jackson, like Shelley before her, succeeds in creating a person at the heart of the text whose emotions are made accessible to the reader. *Patchwork Girl* speaks to both itself and the reader, the persistent use of "I" as the author attempts to make sense out of events alongside the occasional address to "you" to help or witness mimics the experience of reading a journal or a letter. Again, Jackson follows Shelley in using the form of letter writing to distance the reader from the text and, in doing so, to make the presence behind the text feel more real. *Patchwork Girl* invites the archeology of a person where the prime joy comes from the nature of SEEKING and discovery, but which secondarily rewards the reader with scraps of knowledge that, in turn, are stitched together to make a whole person. As the sense of the person grows, so too does the reader's affective connection to her. That is, as the story goes on, the reader attunes her emotions to those of the patchwork girl through the give and take of self-discovery. In

bringing her into being, the reader is placed in a position to share in her emotions as if participating in actual dialogue.

As Katherine Hayles sees it, hypertext leaves us not with the dyad of reader-text, but the triad of reader-computer-text. The computer is the substrate in which this archeology of a person happens. “Because electronic hypertexts are written and read in distributed cognitive environments, the reader necessarily is constructed as a cyborg, spliced into an integrated circuit with one or more intelligent machines” (“Flickering Connectivities”). The text is mediated by the machine, as all texts ultimately are, but *Patchwork Girl* revels in its own mediation through the use of cut-up images of the body, quilts made of lexias, and meditations in the text about the nature of the medium. In doing so, we begin to believe in the immediacy of the figure behind the mediation. For the duration of the text, we take for granted that the third author of piece along with Mary/Shelley is, as the attribution at the beginning of *Patchwork Girl* states, “herself”.

*Patchwork Girl*’s medium is what allows the text to succeed originally, but it is also what dooms it to obscurity. When Katherine Hayles discusses the importance of Media Specific Analysis in her article on *Patchwork Girl* as well as elsewhere, her focus is primarily on the medium as the object that informs the specificity of an object’s affordances and designs. The flip side of such an analysis is the limitations that, while not inherent in new media, are inseparable from early works of hypertext fiction. Reading *Patchwork Girl* in 2016 differs significantly than reading it when it was released (I surmise) as what was once state of the art has become commonplace and as it becomes more and more difficult to find a machine on which the original *Patchwork Girl* can run.

Early in 2016, Eastgate Systems, the publisher behind many early works of hypertext,

finally updated these classics to run on modern machines. This new edition of *Patchwork Girl* has evolved aesthetically to match the current trends. (Fig. 14) Fonts have become smaller, windows have become less prominent and the software overall has a "cleaner" look to it. This edition also lacks much of the functionality of the original. Unlike in the first edition of *Patchwork Girl*, this one has no option to make the links between lexia visible, nor does it provide access to the "guts" of Storyspace for the reader to trace her path or see the tree that led to her current lexia. All of the features of the interface that Jackson deliberately left in the original are gone. It has become like *afternoon* in its inscrutability and obtuseness to the reader. The threads that stitched together the lexia in the original map are gone, leaving free-floating blocks that seem unconnected[65]. The second edition of *Patchwork Girl* is a different text than the original.

While the shift towards a more 21st century aesthetic is appreciated, especially by those of us who have learned to look upon the relics of 90s design with disdain, the original *Patchwork Girl* is the definitive version and is growing increasingly more difficult to run. The 2011 MacBook Air on which this dissertation was written, itself not a new piece of hardware, cannot run the original anymore. Using a 2007 MacBook, the oldest computer to which I have reliable access, I can just barely make it work through emulating an earlier Windows operating system. As a reading experience, *Patchwork Girl* leaves much to be desired. It is slow, clunky, not to mention ugly to modern eyes precisely because Eastgate updated the design. In bringing the design more in line with contemporary choices, Eastgate

[65] I've been informed that this is a bug and should be fixed at some point, but that the tree and chart views are now reserved only for the Storyspace composition application and not the reading one. (email from Mark Bernstein)

drew attention to the original as a work of design, rather than simply the way things are[66]. *Patchwork Girl* works best as a period piece even though that period is only a little more than twenty years ago.

To return to Hayles' concept of the triad, *Patchwork Girl* suffers from the breakdown of the computer's machinery. The cyborg cannot construct itself properly. The layers of the interface have made themselves too visible and actively interfere with the reading. The text becomes defined not by the interaction with its contents, but by frustration with its interface. This is a different quality of frustration than that brought on by attempting to solve the game's puzzles and feeling stymied. Like finding that the pages of a book have been stuck together or torn, the physical medium intrudes into the reader's awareness and makes reading difficult. The machine, an object considered broken and buggy when it is slow to respond, no longer works as imagined. Reading *Patchwork Girl* feels impossible and requires a kind of conditioned "unlearning" that goes against all the familiar rules of human computer interaction. Depending on the edition in question, the text is either aggravatingly slow or missing features. While there are texts that rely on intentionally slow processing or deliberately obscuring links, *Patchwork Girl*'s history and development suggest that these are not intentional features. If they were, I would expect to see them in both editions of the text. A better interface would have the features of the original with the effacing aesthetic of the recent release. Or, better yet, would preserve the original as a form of historical hypertext. In

[66] The recent edition of *Patchwork Girl*, so obviously redesigned to fit in with the clean lines and translucent grays of mid-2010s computing aesthetic, sends the message that the actual interface is important only insofar as it looks inoffensive. It is meant to efface itself and blend in with every other piece of software on the computer. In doing so, it calls attention to the original design as an artifact of earlier design choices rather than a natural part of the text. The redesign suggests that the interface doesn't matter, but its failure to successfully port the text and all its affordances only highlights how important the interface actually is.

the same way that we do not update the language of the 19th century novel to reflect the evolution of English, we would do better to treat old works of hypertext as representative of their time. Painfully slow load times and all, it is better to read *Patchwork Girl* in the same interface that Jackson used to compose it.

**III. Touching the Monster: Frankenstein on the iPad and Beyond**

The figure of Mary/Shelley/Jackson's creature embodies (pun intended, naturally) the stitched-together narrative that is digital, interactive literature. Though *Patchwork Girl* was manifestly not the end of either interactive fiction or hypertext literature, few subsequent texts are as ambitious in their attempts to both write and critique the genre in which they find themselves. Still, the creature who embodies the medium echoes across other versions of *Frankenstein*. In the New York Public Library's digital exhibition on *Frankenstein* (see chapter 4 for an in-depth discussion), explicit connections are drawn between the monster and digital literature, the base child of the book who threatens to overcome its creator. Romantic scholar Andrew Burkett posits that "The novel suggests that thinking about media in terms of monstrosity often necessitates the invention of dynamic media systems that are beyond a given creator's control" (584). *Frankenstein* appeals to creators both as a narrative to discuss the threat of technology and as the source of a figure who embodies the need for new media forms to even have this conversation.

*Frankenstein*, then, is the narrative of uncomfortable affect. The new media that Burkett talks about serves as a coping mechanism for the monstrosity. Though Burkett emphasizes that the dynamic systems put the text beyond the creator's control, the digital systems perversely bring the creature back into the realm of the reader's control. The digital texts provide the multiplicity of options, many of which work to make the creature less

monstrous in the eyes of the reader (and sometimes the text as well). *Patchwork Girl* certainly works in this fashion, the excesses and body parts add up to a surprisingly human person. More recent texts take a similar approach in using interactivity as a way to deal with the monstrousness of the monster and make his experience more available to the reader as an empathic figure. Dave Morris's *Frankenstein* adapts the original as a work of hypertext for the iPad, using the branching structure of the hypertext to explore the role that empathy plays in controlling the events of the novel. While the surface level hyperlinks that the reader can see provide choices that predominantly are about the events of the story, the underlying code is a system designed to provide different choices based on the levels of empathy the characters appear to possess. At its heart, Morris's *Frankenstein* is an interactive text that runs on affect.

Morris's *Frankenstein*, released for the iPad in 2012, greets the reader with the image of a red book resting atop sheets of paper. The papers are covered in anatomical drawings, while the red cover shows the shadow of a looming figure. If the reader does nothing, the book begins to pulse slightly with a whitish glow. Immediately, the all too familiar metaphor of the digital book that looks like a physical book is called to mind. It is an image I have seen so many times that it almost loses its capacity to signify that the object in question is a book. Now, the rendered book is itself a sign of the digital book. The ominous book asks to touched and, when the reader does so, it opens to a sheet of paper with the table of contents. This is the first of many sheets of paper, all of which arrange themselves at the reader's touch. The paper, rendered with slightly foxed edges and the look of an old and discolored object, is the background of each individual lexia. This is not simply a book, but a book with history. It already calls to mind the kinds of books about which one is meant to feel affect: books that

are old and leatherbound and with textured pages. This is not just a book, but a codex or a book object, a thing to be touched and explored.[67]

Conversely, the navigation system assumes the reader immediately recognizes that this is a hypertext and that the prime mechanism for traversing the text is the hyperlink. Each option for the reader to choose next appears at the bottom of the screen as a sheaf of pages. Once the reader chooses, the sheaf rises up and is connected to the previous lexia with a metal pin. Jackson's sewing metaphor from *Patchwork Girl* reasserts itself; the pages are pinned in order to be sewn together into a life. Each chapter of the narrative turns into one long scroll, held together using pins, which are the tools of the surgeon and the seamstress, to create this life (Fig. 14). The pages of *Frankenstein* are not meant to feel like the experience of reading a book, but to evoke the sense of writing one. The metaphor of pinning one page after another, of selecting individual pages and making them into a single book, creating one story out of many possibilities emphasizes the way that the reader drives the narrative forward. By adding this sheet, rather than that one, you-the-reader have changed the outcome

[67] The codex in the digital realm is also often a magical book. In MYST, one of the early graphics-based narrative games for the PC, the books are also magical portals to elsewhere in the game and interfaces through which one can watch short videos that advance the story. Books as portals—the literal narrative transport—is a recurring trope not merely in video games, but in fantasy overall. I first encountered it in Michael Ende's Neverending Story, although my favorite version comes from Jasper Fforde's Thursday Next series where characters can literally read themselves into works of fiction and change the endings. The digital book draws on multiple ideas of the magic book such as the book's ability to transport or to rewrite reality (as hypertext fiction does before the reader's eyes) or contain far more information than a book that size *ought*. The archetypal example that comes to my mind is The Young Lady's Illustrated Primer from Neal Stephenson's *The Diamond Age.* The primer is all of the above and explicitly digital besides. While few digital books are explicitly referencing these magical codices, some undoubtedly are and some readers are likely to call them to mind in a way that informs their relationship with the digital metaphor. They—I—have been trained to expect digital books that mimic print books to be ever so slightly magical.

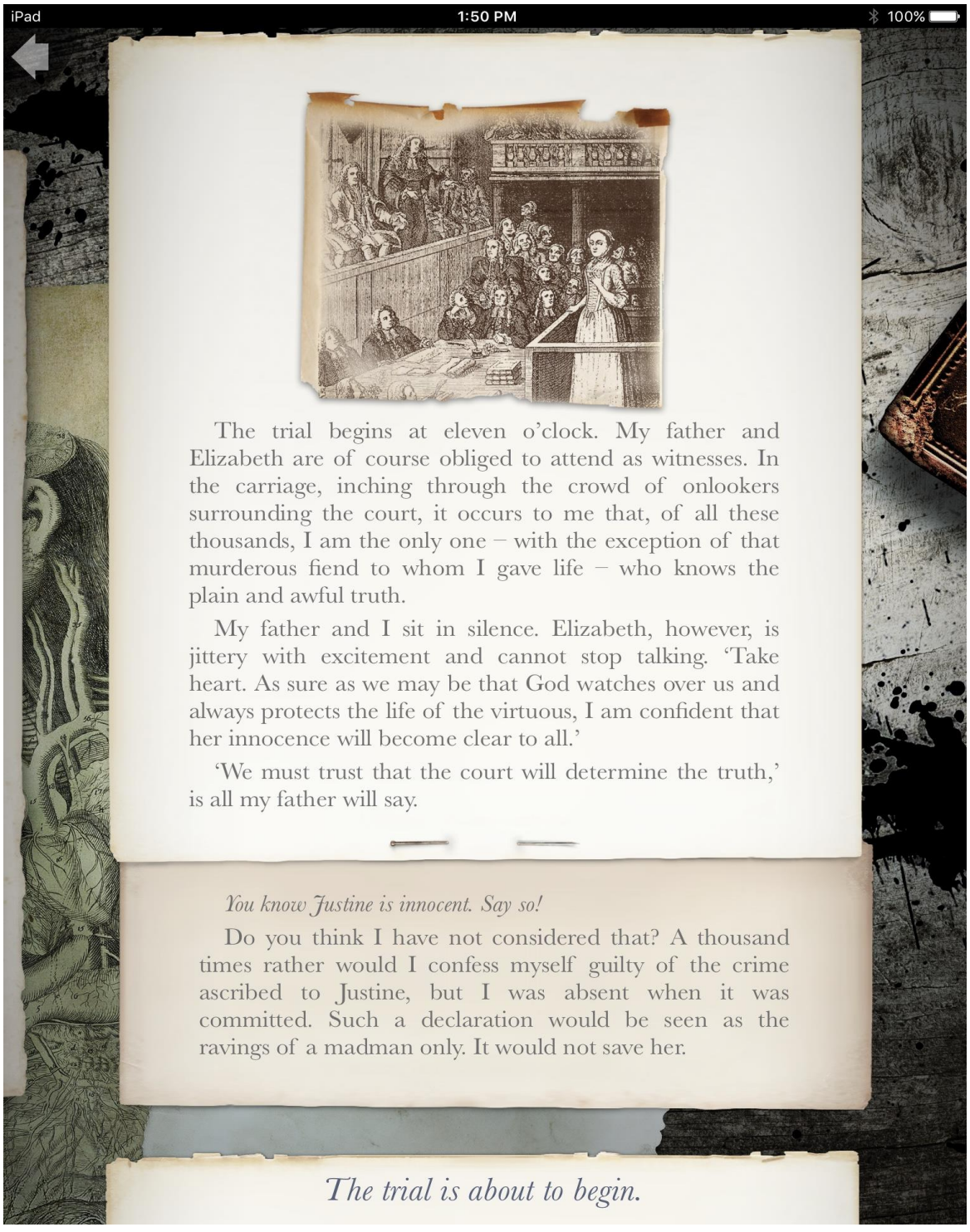


Figure 14. Screenshot of Dave Morris's *Frankenstein* near the end of Part 3. Used with permission from Profile Books.

of the narrative. The text draws attention to the agency the reader has, rather than how limited that agency actually is.

In addition, *Frankenstein* uses the figure of the reader as a character in two specific ways, both of which are meant to highlight the reader's role in shaping the story. Echoing the framing narratives of the original, this text also divides itself based on who is telling the story. The book opens with Victor's narrative and the reader is an unnamed interlocutor engaged in conversation with Victor. The reader's responses consist of things that she can say to Victor rather than actions to take. *Frankenstein* makes explicit the implicit dialogue of *Patchwork Girl*. Drawing on both IF and hypertext, the story is structured as a dialogue between the reader and Victor that takes place in the book's present. Set against the backdrop of the French Revolution, Victor brings his creature to life with the reader as both observer and adviser. The reader is complicit in the events of the narrative; choosing to move forward implicates the reader in the creation of the creature even when no other choices are offered. Though Victor is still the creator, the interface makes it seem as though the events are influenced by what the reader chooses.

Once the creature comes to life and Victor falls ill—as he does in the book—the point of view shifts. The narrative is suddenly being told from the second person perspective of interactive fiction.

> An incessant pattering hiss from above: surrounding, smothering, a continuous falling sound that is soft and sour. The taste of noises. […] This is not the warm wet that *you* knew all that time in the tank. It rattles off the ground, sluices your body – cold, dark, uncomforting. In your hand a soft thing, snatched from a hook. You wrap it around you, shivering. Everything at once. It's too much. These are separate sensations that

need to be sorted so that the world makes sense. (Morris, B_One, ital. mine)

The reader was with Victor Frankenstein. The reader *is* the creature. In this sudden switch, Morris emphasizes the experience of being embodied, the sensations of suddenly existing. He uses the device of telling the reader what she feels in order to place her in the frame of the creature's mind. As with "Depression Quest", the goal is to imagine oneself into the experience. "You" are not meant to feel the overwhelming sensations, but to imagine that you did and to act accordingly. Morris replicates the play of identification in the original, but uses the genre of IF and its associated conventions to do so. The identification occurs as the reader takes on the responsibility of being in the fictional world and enters further into the book as an empathic puzzler. Her choices as the creature shape the narrative to a greater degree than hers as Victor's adviser, particularly because Victor has a tendency to assert his own will and ignore the reader's advice. Technically speaking, the reader has the same amount of control in both cases—choosing from a list of pre-written lexia—but the text is designed to make the reader feel more responsible for the creature and more attuned to his affective experiences. There are moments when the text asks you how you feel, asking the reader to embrace being the creature for a moment and attempt to identify your/his own emotions. The text asks the reader to take on the experience of being monstrous. But the experience is minimized by the nature of interactive fiction that prevents the experience of transport precisely because the experience of being the creature is so terrible. Morris asks the reader to imagine what the creature's situation is like and, crucially, the degrees of freedom that the creature has in terms of its choices.

One significant obstacle in retelling *Frankenstein* as a work of interactive fiction is that *Frankenstein* is ultimately a single story unsuited for a branching narrative structure.

Though it exists as a series of nested narratives, the events are only so malleable before it is no longer a retelling of *Frankenstein.* Victor must create the creature and then abandon him; William Frankenstein, Henry (Henri in this version) Clerval, and Elizabeth Lavenza all must die; and Victor must chase the creature to the north pole. So while the hypertext interface appears to invite agency and experimentation, the story Morris tells is one of frustrated agency. The hyperlinks will only shift so far from the original text; the reader cannot tell Victor to forget this creating life nonsense and have a cup of tea. And even in the moments when the links appear to provide such agency, as when the reader strongly suggests that Victor go upstairs with Elizabeth on their wedding night, Victor responds incredulously "And lead the monster right to her? What are you saying?" (Morris, E_5_6b). This is consistent with Victor's character as established elsewhere in the text, but it also provides a frustrating reading experience for the reader who is interested, first and foremost, in alternatives to Shelley's story.

The opacity of the interface is a mixed experience that depends predominantly on whether the reader frames the text as a game to be completed or a story to be read. Echoing the window frame of the original that both opens up and completely controls the creature's access to the De Lacey family and the narrative frame that constrains the reader's access to the narrative, the hypertext interface is yet another frame that works like a window in even as so much of its work is to delineate the boundaries of what can be seen. The reader can only guess what the results of her choices will be and while certain choices—such as asking Victor to speak to the newborn creature instead of telling him to destroy it (Morris, speak_how)—will affect the narrative in an obvious fashion, it is unclear throughout the text which choices are the most important and which, if any, will substantially change the story. This touches on

the distinction between interactive and traditional fiction proposed by Niesz and Holland, where the former implies a limited world that must be entirely explored, while the latter suggests a boundless world to which the reader can only access a small part. Reading Morris's *Frankenstein* through the former lens is a frustrating experience; the interface is designed to make it impossible to go back once a choice is made and the pinned together pages have a kind of narrative momentum to them evocative of an unrolling scroll. The story, for all its choices, feels inevitable. Reading it through the lens of the latter, however, transforms Morris's *Frankenstein* into an exploration of the sometimes-sympathetic figure Victor Frankenstein.

Following many of the conventions of IF in its shift away from puzzles to people (Heron and Belford), Morris's *Frankenstein* provides an interface that is as opaque as another human being. There are six parts in this text, five of which are told from Victor's perspective. Moving through the text and trying to make the right choice relies on understanding Victor's psychology and discovering how to speak to him as a person open to influence, but also extremely set in his ways. Positioning the reader as a character in the text who has nothing more than the persuasive power of her words to influence Victor, the book emphasizes the empathic puzzle. To whit, how do I affect Victor Frankenstein in such a way that his actions, in turn, affect the reader's response to the book? The interface remains silent.

Of course, the reader could cheat and break the frame that constrains her access (see Appendix 1 for how to disassemble an iOS application). The main code responsible for the narrative portion of the application is a single JSON file. JSON, JavaScript Object Notation, is a language agnostic data format that is designed to be easy for both humans and computers to read and write. With a little bit of patience, an intrepid reader could read the same story in

the file as she could in the text, but armed with the knowledge of the code that defined the textons (to borrow Espen Aarseth's word for the portions of a cybertext that are generated and made visible to the reader). For example, in response to the aforementioned reader suggestion that Victor tell Elizabeth everything, the interface shows me the following response. "Not yet. If my adversary keeps his promise, she will know everything soon enough. So why cloud her hopes of our future life together?" The corresponding code for that portions looks like this:

```
"E_Four_6a":
    {
    "content":
     [
       {
       "doFuncs":
        [
          {
          "func":            "SetVariable",
          "params":
           [
        "trust_you",
          {
          "func":            "Subtract",
          "params":
           [
          {
          "func":            "GetVariable",
          "params":
           [
        "trust_you"              ]
          },1            ]
          }
           ]
          }
           ]        },       "Not yet. If ",
       {
       "condition":
        {
        "func":           "FlagIsSet",
        "params":
          [
```

```
"demonize"              ]
  },
"then":
  [
  "the monster"
  ],
"otherwise":
  [
  "my adversary"
  ]
},       " keeps ",
{
"condition":
  {
  "func":           "FlagIsSet",
  "params":
    [
"demonize"              ]
  },
"then":
  [
  "its"
  ],
"otherwise":
  [
  "his"
  ]
},       " promise, she will know everything soon enough. So why cloud her hopes of our future life together?”,
```

Readable, when it comes to natural language based computer code, is a sliding scale rather than an absolute value, but this collection of objects and arrays is not that hard to parse. On the level of the code, choosing to tell Elizabeth everything first causes the system to run the function where it retrieves the specific numerical value currently assigned to variable “trusts_you” and subtracts one from that number. The variable “trusts_you” is at 0 when the story begins and moves up and down based on the advice you give Victor. Evidently, Victor disagrees with the reader here. Certain options elsewhere in the game are only available if “trusts_you” is above or below a certain numerical value, most commonly 4 and -1. This is

one way that the game changes the lexia available during specific readings, by encoding trustworthiness as a value and using that value as a proxy to determine how Victor should respond to the reader.

After the system subtracts one "trusts_you" point, so to speak, it generates Victor's response. Though the response seems static in the interface, the specific words used will change based on the "demonize" variable. When the variable is set to TRUE—i.e. when the book is set to have Victor use language that "demonizes" the creature—then he is "the monster" and "it" rather than "my adversary" or "he". In the specific read-through that this example was taken from, I had not activated the "demonize" variable, which is set to FALSE at the beginning of every reading. There are certain choices that will cause the file to set it to TRUE and, later in the game, a few chances to reset it back to FALSE. The bulk of the variable's appearance in the code, however, is the way it appears above. Checking the code object's state determines the nature of the text. Is the creature he or it, monster or adversary? Person or thing? Like "trusts_you," "demonize" is a variable that generates the specific appearance of the text. The interface never tells the reader explicitly that the creature is now being demonized because of her choices. However, there are roughly 700 instances in the text when the state of the "demonize" object is checked. In many of those cases, the call is to determine whether to use "it" or "he". One could also call this code-object "subject" as it determines the degree to which the creature has subjectivity in Victor's narrative and whether Victor and the reader can see him as another subject. The degree to which intersubjectivity is possible in this text is written into the code that generates it.

There are three main variables that control the bulk of the options for the text[68]. They are “victor_empathy”, “alienation”, and “trusts_you”. The first two are the most significant both in terms of how often they appear and how much of the text changes when they are called. “Victor_empathy” is a measure of how empathic Victor Frankenstein is capable of being. Beginning at 0, the choices made by the reader either raise or lower Victor’s empathy. There is no indication in the text that this is happening and it is often difficult to understand, even once the reader knows that a specific hyperlink adds or subtracts empathy, why certain choices make Victor feel more for others. For example, insisting that Victor “have some respect for the dead” only makes him insist more stridently on how little the dead and their families matter, which makes him less empathic. On the other hand, pointing out that the creature’s “strength will make it intimidating” adds an empathy point because Victor’s response is to attempt to see the world through his creature’s eyes. “He will awaken as a stranger in a strange land. Everything will be a wonder. Think if the world had been created just this morning. Imagine how you would regard a rainbow or a lightning storm if you opened your eyes with no memories of an existence before this moment” (Morris, intimidating_big_lug). Though the reader does not realize it, her actions force Victor to imagine being the creature (as the reader will in turn) and doing so, the book contends, makes Victor better able to perceive the feelings of others and feel with them. This, in turn, influences which lexia are available for the reader to choose and is the mechanism behind many of the variables that alter specific words in the text. The example above, “demonize”, switches to TRUE if “victor_empathy” is -1 or below when the creature is awakened for the first time.

[68] See Appendix 2 for a full list of variables found in the text.

The other variable, “alienation”, is a mark of how alienated the creature feels by everyone else. The creature’s affective state is a mirror version of Victor’s. Rather than measuring his ability to feel for others, the text measures how much he feels as though others can empathize with him. As with Victor, the choices available to the creature are defined predominantly by this variable. This was the variable that interested me the most, as it answered my most pressing question about this book: how much could I alter the story? My goal, in my early readings, was to try to keep the creature from killing William and prevent the tragedy of *Frankenstein.* I could not succeed, which led me to wonder whether it was even possible. My conclusion, based on those earlier readings, was that I could not and that the book was uninterested in materially changing the narrative. This frustrated me as a reader familiar with hypertexts that actually allow the reader to “choose your own adventure” rather than “choose your adventure that will inexorably lead to the death and destruction of every character in the book”. Reading the code, I realized that any chance I had of saving William relied on the “alienation” variable. Could I save William by ‘un-alienating’ myself-as-the-creature enough?

No. William Frankenstein must die. What I could do, I discovered, was prevent the creature from killing William. If the variable “alienation” is -4 or below, the creature has the option to not seize hold of William and choke him to death. If “alienation” is 1 or below, the creature must seize hold of him, but then has the option to let go. In my earlier readings, I did not run across those options; killing William was always inevitable since I apparently had my creature choose alienating options every time. Guided by the code, I reread the book taking care to never choose options that increase “alienation” and to choose those that decrease it when I could. That time I was successful. Instead, I read about how William runs away and

Justine Moritz murders him after all. The same is true of Henri Clerval, who is either killed by the creature or down by the docks under mysterious circumstances.[69] There is no way to save Elizabeth Lavenza, though. The creature always kills her.

In the most trivial sense of the term, the code behind Morris's *Frankenstein* is affective computing. Emotions are translated into numerical variables and, based on the value of a variable at a given point in time, the narrative changes. *Frankenstein* translates affect into numbers as a way of thinking about the role that feeling for others plays in the text itself. It is, quite literally, an empathic puzzler that uses emotional variables as a proxy for understanding the role that empathy plays in the Frankenstein narrative. The two variables that play the largest role in informing which story the reader will experience, "Victor_empathy" and "alienation," are measures of not simply of affect, but of affects caused by others. If, the code claims, Victor could just experience enough moments of empathy, he might not reject the creature out of hand. He would name him "Adom" and "speak to him as a friend," which is one of the lexia available when "victor_empathy" is above 4.[70] Still, the only link available at the end of that lexia is "This abomination can never

[69] The text implies, though I cannot find a lexia in which it says as much outright, that Clerval is attracted to men. If "henri_rolled" is set to to TRUE, then Clerval dies when assaulted while visiting some of the more insalubrious parts of the city, presumably in search of someone with whom to have sex. As an excuse for killing Clerval at hands other than the creature's, it works. As yet another example in media of a (by modern standards) queer character dying to further someone else's grief, it leaves what to be desired.

[70] The text notes that Adom is the Hebrew word for red, which is true. Morris is playing with the similarities between Adam and Adom - man and red - but also calls to mind Edom, another name for Esau, who was called Edom for his ruddiness. In the Bible, Esau loses his birthright to his brother Jacob and threatens to hunt him down and murder him for the theft. Like Adom here, he is a mistreated family member in search of vengeance. Edom is also the term used in Rabbinic literature to refer to the Romans and their conquest of Judea. The name again evokes a figure of overwhelming strength and destruction. It is unclear whether Morris intended these parallels, although he references rabbinic literature elsewhere in his

fit in." No matter how high Victor's empathy level, the reader must remind him that his creation will forever be an outcast. The code performs the possible empathic moves given the circumstances, but cannot change the outcome in any meaningful sense.

Yet these changes in empathy should not be dismissed merely because they cannot derail the eventual story. These changes let Victor and the reader reflect on their choices and alter the text on the level of affect rather than plot. Victor becomes a sympathetic figure in his own right, critiquing the selfishness of the original Victor without entirely changing the character. To whit, Victor's reaction to Justine's imprisonment is contingent on his empathy levels. When the level is below -1, Victor responds exactly as he does in the book, stating that "the tortures of the accused do not equal mine. Unhappy victim though she is, Justine is sustained by innocence, while I feel the fangs of remorse tearing my bosom, that will never forgo their hold because my guilt is real."[71] If, however, Victor's empathy levels are above -1, he leaves the trial saying "I am sickened by self-loathing. I should have the strength to remain and give her what comfort I can by my presence, but I cannot. Guilt overwhelms me" (Morris, C_Twelve_8n). This change alters the reader's perception of Victor; he shifts from being affectively distant to closely aligned with the reader's own feelings. Especially to the reader familiar with the original, Victor's sudden capacity for empathy and recognition that emotions are not a game of one-upsmanship encourage the reader to feel for him. As a reader, I recognize his guilt and I think he is right to feel it, but his manner of expressing it and ability to empathize with Justine transforms him, in turn, into a figure with whom I can

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book when Professor Waldman quotes "Ethics of the Fathers," so it is not too farfetched a reading.

[71] The original text of Shelley's *Frankenstein* reads as follows: "The tortures of the accused did not equal mine; she was sustained by innocence, but the fangs of remorse tore my bosom and would not forgo their hold."

empathize. The affective tenor of the text shifts within the confines of the same plot.

In some respects, Morris's *Frankenstein* is a fascinating and ultimately successful reimagining of the Frankenstein narrative. While Shelley focuses on one version of Victor and his creature, Morris creates multitudes. Each iteration is slightly different in its capacity for empathy and appreciating the subjectivity of other people. And while the more empathic Victors draw attention to the callousness of the original, Morris also uses the characters to envelope additional versions of *Frankenstein* into the book. If the reader successfully creates the female creature, she responds much like Elsa Lanchester in *Bride of Frankenstein* with her horror and rejection of the male creature (which is accompanied by a staggering +4 alienation). Not one version of Frankenstein, but all of them. Morris's book performs the role that empathy and affect play in narrative, iterating the same story over and over again to determine how different it can be within the same parameters. The affective measure of the story encoded into the variables in each read-through determines the emotions available to the reader to simulate and influence. In other words, this book is about all the different ways in which the Frankenstein story can play out. And those variations, this book contends, occur because of affect. The differences between a demon and a creature who does not kill are based on how the reader, through choosing, changes the emotions of the characters and open up the possibility of change for the characters themselves.

However, it would be better to say that the JSON file is a fascinating and ultimately successful reimagining of the Frankenstein narrative. The digital book itself reveals none of its affective secrets to the reader, no matter how it is probed. It is an opaque interface: the reader can try to guess which of her selections might change the text, but the book never tells her what effect her choices will have. Morris's *Frankenstein* suffers from a version of what

Noah Wardrip-Fruin calls “the *Tail-Spin* effect.” Named after a computer program designed to generate digital fiction, the *Tail-Spin* effect happens when an interesting system “creates a surface illusion of system simplicity—which the available options for play, if any, can’t alter” (Wardrip-Fruin 146). The opacity of the interface prevents the reader from recognizing the role that her selections play in determining the available choices or even from recognizing that there is a method to the seeming randomness of available options. If the book is meant to be an exploration of how affect shapes the Frankenstein narrative and, particularly, the way that Victor and the creature change even within the confines of the plot, obscuring the technical hypertext mechanism does little to promote that. It is impossible to tell what Morris is trying to do with the text without delving into the code, while the preponderance of affective variables in the JSON file itself makes it difficult to believe that I am misreading the text and that affect is irrelevant to the story Morris is telling. Emily Short, in her review of the book, voices similar concerns. “Since so much of the meaning of an interactive work lies precisely in the rules — the structure of how one choice opens or closes another — the relative lack of clarity about Frankenstein‘s structure makes it harder to evaluate as a whole.” One can use the text to reflect on *Frankenstein* as each choice provides the reader with another opportunity to think about what the creature is doing, what Victor is doing, and what happens next. But the revelatory experience where the reader understands the framework of the digital text and experiments within that framework cannot happen without exiting the world of the book and using an entirely different interface to read the text. As an interface for providing access to an unpredictable narrative, Morris’s *Frankenstein* works excellently. As an interface to examine the role of empathy and feeling for in the Frankenstein narrative, it ultimately fails to provide the framework necessary to understand what the text is doing.

**IV. Progeny Proliferate: The Genre of the Digital Book**

Though not fully successful, Morris's *Frankenstein* is a suggestive example of what digital books are capable of doing. *Frankenstein,* like *Patchwork Girl*, plays with the role of empathy in fiction. To return to Suzanne Keen's book on the subject, she posits "that fictional worlds provide safe zones for readers' feeling empathy without experiencing a resultant demand on real-world action. This freedom from obligation paradoxically opens up the channels for both empathy and related moral affects such as sympathy, outrage, pity, righteous indignation, and (not to be underestimated) shared joy and satisfaction" (37). Feeling for and with the characters in a text is a space to experiment with empathy without guilt over the inability to act or shame over the choice not to act.[72] And though digital and traditional books take different approaches to what constitutes empathy, both options seem to have the same goal in mind: the cultivation of affective response.

The distinction between the traditional and digital book turns not on which method is better for building this affective connection, but on which method best suits a particular project. Because interactive books involve the reader differently than non-interactive books, it stands to reason that inducing emotions through agency rather than transport would suit the former, while the latter would benefit from enrapturing narratives. As Shelley's *Frankenstein* transforms into Morris's and the text takes on an interactive element, the methods through which the book calls on the reader's affect changes. Shelley frames her narrative around the creature to ask the reader to empathize with him and not his creator. Morris's narrative is far more preoccupied with the question of Victor's empathy and what Victor needs to do to

[72] This is why Keen argues that empathy and, perforce, reading is not about fostering civic engagement, but about practicing affective experiences.

become a figure who both possesses and engenders empathy. Shelley emphasizes feeling with the creature and making a monstrous figure sympathetic so that, after the last page is turned, the reader can think about the mind into which she was transported. Morris emphasizes imagining the feelings of the other characters in order to direct their actions, which constantly reinvokes the reader as a separate entity. The digital book as seen here uses the device of readerly agency to nearly remove empathy as the process of feeling someone else's feelings from the equation. Because the reader is in the text and feels responsible for the choice she makes—despite those choices being scripted in advance and highly constrained by the author—the need to empathize with the character's actions in order to feel affect because of the results disappears. I, as a reader, feel for what I did precisely because I did it. When I tried to save William over and over again it was because, despite knowing it was a book, I felt complicit in choosing to grab hold of him. I was angry at the text for giving me no other choice. And when he died, I felt responsible for not having saved him. This is not quite empathy—feeling what the creature feels—but it is its own kind of affective experience. Calling it an empathic puzzler may be somewhat incorrect; perhaps affective puzzler would be better.

This book still functions as an affective puzzler as the reader learns more about the characters who inhabit it. Through making different choices and trying to change the outcome, the reader learns more about Elizabeth, Henri, and Victor himself. *Frankenstein* is, as Heron and Belford say about games with this format, "an environment in which the player can explore an emotional connection with an environment and its characters and allow an opportunity for a player's emotional intelligence to be stretched and strengthened" (23). Interactive fictions thrive not on enrapture, but on the reader's constant awareness of and

reflection on the events of the book.

Using the principle that choices drive affect, there have been additional successful experiments with digital books. After *Frankenstein*, inkle books has published additional iPad digital books. Most notably, they produced a version of Jules Verne's *Around the World in Eighty Days* titled *80 Days.* The reader plays as Passepartout, the somewhat hapless valet to the main character, Philius Fogg. More game-like than its predecessor and better suited to the branching narrative structure, *80 Days* offers multiple methods by which the reader can subtly direct Fogg around the world and, crucially, the text keeps the reader up to date on how Fogg feels about his valet. The affective variables that dictate the visible textons are now part of the interface in a way the reader can use. *80 Days* garnered far more attention than *Frankenstein* and was declared the Time Game of the Year in 2014. It has since been released as a desktop computer game, which certainly complicates any discussion of it as an interactive fiction. This muddy boundary between game and book is not only limited to inkle's productions. In Japan, and to a degree globally, the genre of "visual novel" has become popular[73]. Illustrated with fairly static backgrounds, visual novels function much like hypertext fictions. They provide the reader with several choices of what to say or do that create branching narratives and, depending on the choice, the reader will reach a specific ending. Many of these novels are romances; the reader chooses the character with whom they

[73] The visual novel is a hybrid of the Choose Your Own Adventuire books and manga (Japanese graphic novel) that takes advantage of its digital medium to create many more branches on the narrative tree than a printed choose your own adventure book could support. Some of the wildly succesful ones have been translated into English and the genre is slowly taking root here as well as online video game distributors like Steam have started to sell them alongside more traditional games. Like interactive fiction, visual novels are often classed as games although they are primarily written, branching narratives. Visual novels currently constitute a majority of the games sold in Japan.

wish to form a romantic relationship and success in the game turns entirely on affections. In these narratives, the emotional payoff is found in constructing a relationship, in successful seduction and, in the erotic sub-genre, in the climax. The point, in both inkle's additional experiments with iPad literature and the burgeoning genre of the visual novel (which now has its own, open-source writing software), is to create affect through choice.

For most of this chapter, I have been ignoring the main affect associated with the digital book: SEEKING. Everything I said about the digital editions of the Talmud and the Talmud itself hold true for digital fiction as well. The delight found in unraveling a puzzle, in uncovering meaning, and in solving a mystery makes SEEKING the dominant affect associated with many digital books and explains why so many of them center around mysteries. On the other hand, those books that do not include an element of SEEKING seem to disappear from the market. This is why all the texts I discuss here are forms of interactive fiction and, more specifically, the descendants of the hypertext. Between the time when I first conceived of this project and its completion, a number of "enhanced" editions of books were released for both computer and tablet and subsequently were removed from circulation. They offered music, illustrations, and even puzzles. Some versions of Frankenstein give the reader the opportunity to solve several puzzles to bring the creature to life. All of those have been pulled from the App Store and can no longer be purchased. Unless one had already bought a copy and backed that copy up to an external hard drive, they are gone.[74] I treat interactive

[74] This is technically not true. There is one remaining version of Frankenstein that invites the reader to assemble the creature. In Babylit Frankenstein Build-and-Play, by Little Miss Shelley, I can build and dress my very own monster. The narrative portion is about five pages long and ends with the creature moving to the North Pole and building a greenhouse to grow strawberries. My one year old daughter is a bit young for it, but she thinks the chomping sound made by the creature eating fruit is amusing.

fiction as synonymous with digital books because, at least in the case of fiction, it is the dominant form and the form that appears to work as fiction. All the books that have survived and the genres that seem to be thriving again employ interactivity in the service of SEEKING.

Having looked at multiple iterations of both fiction and nonfiction, of digital and paper, I wish to draw attention to the chain of linkages between non-linearity, interactivity, and SEEKING. Non-linear texts are texts that require more conscious interaction from the reader, which shifts them into the realm of interactivity. Interactive texts are texts that, based on my ongoing approach to how Panksepp's affects work in literature, are grounded in SEEKING as the dominant, underlying affects. Designing a successful digital book, I would argue, requires designing a successful interactive text. The reverse is not necessarily true; there are some excellent interactive texts that still take place on paper. The digital book that is grounded in the affordances of its platform and attentive to the specificities of its form should be interactive. And it should be designed—like the Talmud, like Jackson's *Patchwork Girl*, and even like Morris's JSON file—to reward readers with the delight in discovery that activates because we are, at heart, SEEKERS.

What the reader SEEKS for is also a key element of the digital book. In nonfiction, we usually SEEK knowledge or the pattern of how that knowledge fits together. This is simplistic, as binaries often are, but illustrative. In nonfiction, the need for additional narrative affects is less relevant as the SEEKING itself is really its own reward. In fiction, however, the progression of emotional experiences within the text is a fundamental part of the reading experience. This is the appeal of the empathic/affective puzzler where the purpose of SEEKING is to experience the affects available in the text as the reader discovers

more information and follows different branching paths. Like reading a traditional book, SEEKING motivates the reader's desire to know what happens next even as the overall affects are modulated by the content of the text. The key difference turns on a distinction between empathizing with the characters and interacting in the fictional space of the characters. The narratives that succeed as digital books are those that invite this interaction, and that reward careful reflection on one's own state of mind. The ideal digital book is not one that sweeps the reader away from herself, but returns the reader to herself and her own feelings.

## Chapter 4: Feeling in the Archive

The three chapters that preceded this one have discussed all the reasons why the digital book must differ from its paper counterparts. They have emphasized the need for the interface and design choices to take advantage of their own affordances to build feelings and make affective meaning. With that out of the way, I also want to acknowledge the reality that there are many circumstances where reinventing the book is neither possible nor desirable. The most obvious of these scenarios, and the one to which this chapter is devoted, is digitization. The goal in digitization is not to rewrite or reimagine a codex, but to present a representation of it when the original is too delicate to be handled, already disintegrated, too expensive to access, or merely less convenient. The capacity to both read and manipulate digital versions of texts is a crucial part of the 21st century scholar's repertoire and, particularly when digitization is the only option for accessing a work, it is a necessary component of the work we do. From the perspective of the redesigned digital book, digitization could be read as a necessary evil, albeit one with a long history. The printed book filled with facsimiles is no less a part of the researcher's toolkit and I imagine that, to pull an example out of a hat, I am not the first researcher to wish she could see and handle the original manuscript of *Frankenstein* rather than just look at a reproduction thereof. I do not require access to the manuscript for my work, but the encounter itself would be really cool. It would, to be more precise, be a deeply affective experience.

This chapter circles around again to the problem of reproduction and the question of how to present books that were not born digitally. Unlike books written for the digital platform, digitized or compilations of digitized books are meant to work with the affordances of their original media. Remediating them into entirely new books—like Morris does to *Frankenstein*—is helpful in creating a book with emotional resonance, but less useful from

the perspective of a reader who wished to read Shelley's *Frankenstein*. It is particularly useless for the reader who wants to see the original manuscript. The more the reader is interested in the original and the originating object, the less useful a transformative digital edition can be.

In this chapter, I address this problem of presenting digitized editions and examine what steps can be taken to create a positive and compelling experience for readers who need to access them. This chapter focuses on the objects that cannot be fully remediated, the ones that must retain as much of their original medium as possible in order to have their effect. I look at manuscripts, letters, and notebooks that are presented to the public as part of an effort to make these texts accessible outside of the libraries and research centers where they are held. These objects complicate the problems I have discussed up through this point. On the one hand, they are texts that cannot be fully remediated to best take advantage of a new platform. On the other hand, they are also texts where the experience of encountering the original is a meaningful and transformative experience. They are books where the physical object is an original, rather than one among thousands of printed copies. That is, the difference between seeing the original manuscript of *Frankenstein* and a facsimile thereof is, I believe, qualitatively different from seeing a printed edition of *Frankenstein* and that same edition in ebook form.

Because of my interest specifically in unique objects that engender affective experience when encountering them rather than exclusively through reading them—objects that have Benjaminian aura—I do not intend to discuss the print book that is digitized and

released as an ebook except in order to dismiss it[75]. If Mangen and Kuiken are right in their study of reading digitally, then the ebook reading experience will not quite hold up to the print reading experience, although it will come close in some respects. My one quibble with their research is that their work, for reasons of experimental validity, cannot acknowledge the role that readerly desire plays in affective reading. The reader's own desire to read a story may invest the ebook version of a text with the capacity to transport her as if she were reading a print book. I know my ability to focus on a book is more dependent on whether I want to read it than whether I am reading a digital or print copy, although I have noticed that I find it particularly difficult to read digital copies of books I have no interest in reading.

More to the point, I also want to recognize that the decision to read an ebook or a print book is often a calculus of exigencies. It may be that readers would read all books in print, except the ebook is free, or the library only has the ebook copy, or the ebook is accessible right now while the book can only be delivered in a week. Ideally, I would read all my books as hardcovers with a mug of tea, a blanket, a very comfortable couch, and a dog. However, I do a significant portion of my reading on public transit or in short bursts between building a tower of blocks with my daughter, and I do not own a dog. Whether a given hour of reading is the ideal reading experience and whether the book is as affective as it could be under these circumstances is a preposterous question: not all reading must be ideal. This is the logic of the ebook; when all that matters is the text, merely moving the text from one container to another is good enough enough of the time. The slowly declining market share

[75] Despite my use of the conventional terms "print", "digitized," and "ebook" here, those terms do not accurately reflect the publishing landscape. Most books written today either begin life as manuscripts or as digital documents. They are not digitized, they are printed out. When writers write and editors edit on screen, is not the book really an ebook that has been printed out rather than a codex that has been digitized?

of ebooks in 2017 in response to a growing focus on creating beautiful physical books seems to answer the question of how good and for how much of the time (Preston). However, as all four chapters of this dissertation have shown and continue to show, many books contain far more than their textual content and the process of remediating them must also account for the relationship between form and emotion.

I admit, this way of thinking could apply to curating digitized collections as well: these are the necessary compromises that scholars must make if they want to read manuscripts from the comforts of their own homes or if they want to access multiple collections housed all over the globe. Thus, there is no need to bother with designing a better interface to access them. Such an approach ignores all the ways in which experience is an integral part of visiting literary artifacts. I think it is a mistake to dismiss the emotional component of scholarly research and to treat access to materials as purely a matter of uploading the materials and letting the reader sort it out. The curated collection, the museum archive, and the library are all places of bookish affect and the feeling of holding the manuscript in one's hands cannot be captured and digitized.

Despite this challenge, the digital collection can still be a locus of emotion and pleasurable experience. As museum exhibition designers know well, part of creating an effective aesthetic experience involves careful curation and organization. The design of the exhibit, the organization of the art book, and the interface of the digitized collection are all ways of negotiating the visitor's affect and helping them experience meaning through feeling. When considering the digital exhibition—itself a digital book of digitization—the same interface elements and interactive markers of agency that brought affect to hypertext readers and made SEEKING enjoyable to Sefaria's scholars can be used to effect an experience that,

while both distinct from and less exciting than visiting the collection in person, is still affective. Like the sublime, which marks the transformation of one affect into another through the process of mediation, the affects of the digital collection could be read as mediated and thus transformed versions of the affects found in the physical collection. And as we do not read the sublime as a form of "lesser terror," but instead as an experience to be evaluated on its own merits, I argue we should do the same when considering the digital collection of mediated objects. Rather than look at these digital objects and see the affects they fail to convey, I challenge the reader to read them instead for how they do engender affect.

This chapter is perhaps the most personal and perforce subjective of all four. In it, I move through the multiple different ways that the manuscripts housed in the Carl H. Pforzheimer Collection of Shelley and His Circle at the New York Public Library have been presented to the public. From the library's website to their curated application to the collection itself on the top floor of the Stephen Schwartzman Building on 5th avenue and 42nd street, this chapter constitutes a record of my own journey through this collection as a researcher and also as a tourist or visitor interested in these manuscripts. The two are difficult to separate unless one imagines a researcher entirely devoid of any feelings for his research. I believe that such research misses a crucial element of scholarly reading and the emotions we feel for the texts we research is a valuable part of the research experience. As visitors to the collections, as wanderers in the archives, we are subject to its affective capabilities and it behooves the digital versions to find ways to create affective and engaging experiences of their own. In this travelogue through the Pforzheimer collection's different instantiations of its materials, I will explore how the digital book works as an exhibition and as an exhibition

catalogue and explain the ways in which it uses—and very often fails to take advantage of—the affordances of the web page and application interface in the process of presenting digitized materials.

**I. Exhibiting Affect**

The Carl H. Pforzheimer Collection of Shelley and His Circle at the New York Public Library is housed in what I imagine an updated recreation of Carl Pforzheimer's study should look like. The walls are dark wood, the desk is old and ornate and, naturally, topped with a large iMac. Books line the shelves and, though some are tucked away behind glass, others are sitting out and available. It is, simultaneously, a library and the ideal of a library. The Pforzheimer Collection specializes in works by and related to the Shelleys, as well as other Romantic poets and authors who were either connected to them in some fashion or simply interested in the same things. "Today, the Collection continues actively to acquire books and manuscripts relating to major and minor figures of the Romantic era, as well as works that illuminate the social, political, and cultural history of the age" ("About the Pforzheimer Collection"). Though I first visited the collection in the winter of 2017, I was already familiar with both its mission and some of the manuscripts contained in its carefully climate controlled interior. In 2012, the New York Public Library put on an exhibition of some of the collection's brightest gems alongside the original manuscript of Mary Shelley's *Frankenstein* on loan from the Bodleian. The exhibit came down at the end of that year, and the library simultaneously published an iPad application entitled *Frankenstein: The Afterlife of Shelley's Circle* (henceforth *Biblion: Frankenstein*) that was part journal, part interactive forum, and part digital exhibition. In fulfilling that last role, the application included high resolution digital images of the entire first draft of *Frankenstein*, Percy Shelley's Esdaile

Notebook, friendship albums, and additional correspondence and miscellany from the collection. *Biblion: Frankenstein* is a book about books; a digital book about digitized books that models the ways in which books can present texts. It is, to be blunt, a mess, but interesting precisely because of what its messiness says about the digital book and the roles it tries to serve.

The NYPL calls this imprint "Biblion: The Boundless Library" ("Biblion: Home"), suggesting both that this digital application can bring the contents of the library outside the bounds of its walls and that the application itself is, unlike a book, boundless in its scope and its lack of binding. Even before opening the application, this digital book defines itself against the physicality of the codex. It is uncontained and unmoored from space. It embraces the fantasy of the library that contains all the books in the world, but it also emphasizes the accessibility of the library to the average person who lives more than a subway ride away from the NYPL's research division. The library unbound is also the library miniaturized, digitized, and brought to your hand. The dual interpretations of unbound create some confusion as to what the application is supposed to be. Is *Biblion: Frankenstein* about unbinding the book in order to provide multiple reading paths, multimedia, interactivity, and interactions between readers? Or is it about opening up the library to new readers by making the manuscripts exceed the boundaries of the library's walls? *Biblion: Frankenstein* encompasses these two models of what the digital book made up of digitized books can be and, in trying to do both at once, does not fully succeed at accomplishing either.

In claiming that *Biblion: Frankenstein* is a mess, I mean that first and foremost on the level of intention. This book has no sense of its audience, what it seeks to convey, and what kind of experience it wants to create for its readers. To return to Chris Crawford's metaphor

for interactivity: if we are engaged in a conversation, this is a book that has a tendency to babble. Crawford's understanding of design as dialogue, while usefully succinct in its articulation, is written predominantly for designers rather than for the user. The user is an imaginary figure, one who is necessary for design purposes, but not the main audience of his book. For a digital book like *Biblion: Frankenstein*, which feels much more like a spectacle or a digital flaneur's paradise, thinking in terms of productive conversations—that is, interactions with the computer that produce a desired response—is inherently unhelpful. One is immediately forced to answer the question of what *Biblion: Frankenstein* is trying to produce when it is unclear whether the book aims to produce anything. The best I can offer for what the book produces, at least without performing a reading of the application, is an experience. Crawford's frame for understanding HCI is simply unsuited for the purposeless, directionless exploration that *Biblion: Frankenstein* seems to invite.

Instead, Brenda Laurel's articulation of the poetics of HCI and her vision of interactivity as a performance suits this book much better. In *Computers as Theatre*, Laurel uses the metaphor of theatre to articulate the experience of engaging with an interactive computer object. For her, the metaphor is useful both in its familiarity and its capacity to evoke a situation in which multiple different actors engage in representation. Laurel invokes Aristotelian poetics to describe an instance of human-computer interaction as a performance. She links each of Aristotle's six causal elements—plot, character, thought, language, melody, spectacle—to elements of interacting with a computer. Many of these elements map directly, though one or two require Laurel to gloss Aristotle's meaning somewhat: The plot is the whole action of an interactive session, the characters are the human and computer agents with their own intentions, the thoughts are the internal processes of both human and

computer that explain the choices made, the language is the range of semiotic phenomena available to convey the thoughts, the melody is the pleasurable arrangement of sensory phenomena, and the spectacle is the phenomena themselves. As with Aristotle, "[e]ach element is the formal cause of all those below it and each element is the material cause of those above it" (58-9). One can both read the causal elements individually and analyze their interrelatedness; how pleasurable are the sensory patterns and how well do they convey their meaning through language?

Laurel also takes the notion of "interactivity" and, rather than focusing on the actions taken by the user, emphasizes the way that the reader engages with the text.

> Engagement "has both cognitive and emotional components. It implies sustained attention as well as a degree of emotional involvement that is shaped as the plot unfolds…Engagement, as I use the concept in this book, is similar in many ways to the theatrical notion of the "willing suspension of disbelief," a concept introduced by early 19th-century critic and poet Samuel Taylor Coleridge. It is the state of mind that one must attain in order to enjoy a representation of an action" (139).

For Laurel, the degree to which the user interacts with the book is less important than the degree to which the reader engages with it and invests in it. To put it another way, the important part of the interaction is the user's willingness to experience affect at the behest of the computer. This affect, whether pleasurable or cathartic, promises to be a good return on emotional investment, even if it does not necessarily rely on SEEKING. Similar to ideas of immersion, Laurel's engagement rests on the construction of a relationship between the user and the application. HCI is built on trust: the user trusts the application to reward emotional investment and her own experimentation, while the application (or its designers) trust the

reader to appreciate everything from the spectacle up through the entire action of an interactive session.

That is the ideal scenario. As with so many circumstances, reading Human Computer Interfaces is a matter of identifying the misses as well as the hits, the places where the user disengages, the pattern loses its pleasure, the characters become inscrutable, and the action of the piece is stymied. Laurel's use of engagement and her poetics of HCI provide an in-depth rubric for understanding the moments where *Biblion: Frankenstein* is successful—where it works to engage the reader and provides enjoyable and fulfilling actions—and where it does not—where the reader loses interest, becomes frustrated, and finds the larger action of the book either out of reach or inscrutable. Reading *Biblion: Frankenstein* as a performance, an interactive experience shared by reader and book, allows one to understand and critique the application without framing its lack of clear purpose as a design flaw from the outset.[76]

*Biblion: Frankenstein* opens cinematically, first with the publisher's imprint of the Boundless Library, then shifting to the title, "The Afterlife of Shelley's Circle" above a progress bar informing the reader that it is "loading source documents".[77] After loading the source documents, which are the digitized manuscripts, the application then shows what

[76] Which is not to say that the lack of a coherent action is not a flaw. But at least such an approach allows me to begin with the application as nothing more than an interesting experience without expecting it to do something further.

[77] On more recent iPads (a 2016 iPad Pro, in this case), the loading screen is interrupted by a notification informing the reader that this app may slow down the iPad and has not been updated in quite some time. The app runs perfectly normally and about as well as it always did, but compared to the responsiveness found in apps designed for this piece of hardware, it is slow. Running *Biblion: Frankenstein* on a modern iPad is still infinitely preferable to running *Patchwork Girl* on a modern computer, although—to the best of my knowledge—the application will not be updated in order to comply with the requirements for iOS 11, and so will become unusable on any device running iOS 11 or later as of September 2017. While *Patchwork Girl* feels older, *Biblion: Frankenstein* is far less future-proof.

appears to be an animation of the source documents loading. The documents are arranged in a spiral with individual leaves of the books broken out from their bindings to create a slowly rotating cylinder of information (Figure 15). Finally, the title appears again with what looks like four books set in from the source documents, each of which is a themed collection of essays, interviews, and media. The whole experience is meant to make the reader feel as though the essays have emerged from the source documents, resting atop them as both a symbolic culmination of what the sources have created and as a gateway into the sources through the information they can provide (Figure 16).

The opening of *Biblion: Frankenstein* is about spectacle, both in the sense that Laurel/Aristotle use the word and in the more colloquial sense. The application uses the aesthetics of film and game design in its opening visuals, evoking both a cinematic credit

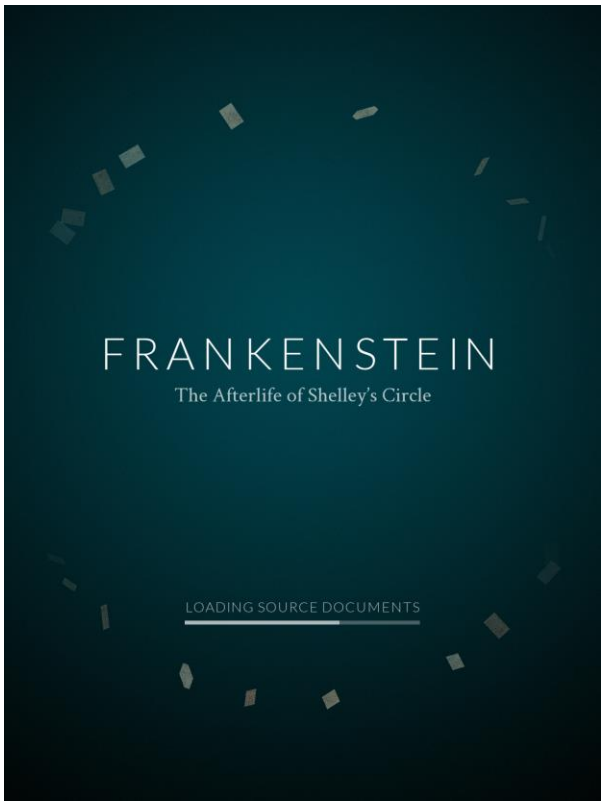



Figure 15. Loading Screen.

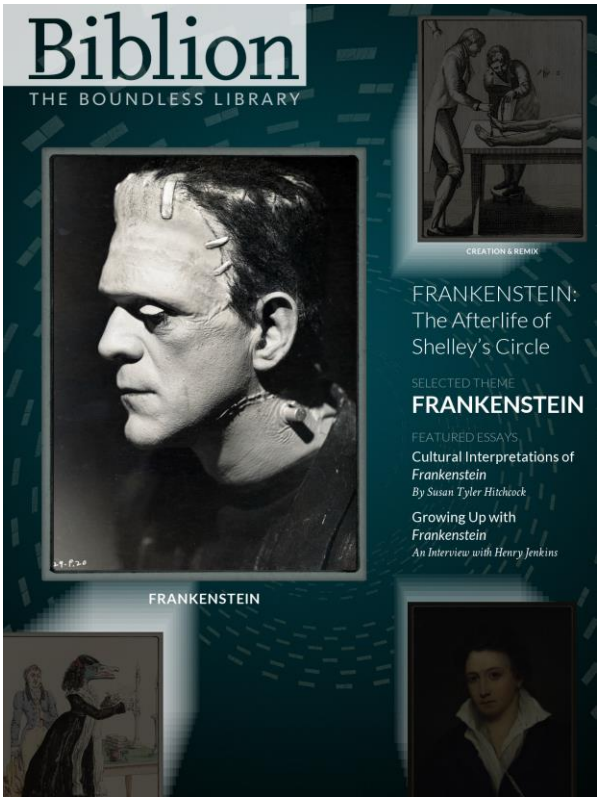



Figure 16. Home Page

sequence and the loading screen of a game. The background is a dark teal, a static space for the source documents to reside as they flow in. The screen begins at its least interesting and, as the loading progresses, adds movement, then color, then finally dynamic visuals that respond to gestures. Unlike either a film or a game, there is no sound.[78] The opening spectacle is purely visual, already preparing the reader for a predominantly visual experience. The documents of the library are unbound, organized, and shuffled into neat, digital piles for the reader to peruse at her leisure. Again, the "boundlessness" of the library informs the presentation.

After the opening sequence, *Biblion: Frankenstein* proceeds like an ordinary digital book. It provides some minimal instructions when the reader first uses the application: tap on a themed collection to view the essays it contains, swipe to move through the individual essays to select the one you want, scroll down to read the essay, and so on. Even in 2012, when the application was first released in the iOS App Store, these gestures had already become part of the interactive lexicon that most users could be expected to know. Apple's Human Interface Guidelines tell developers as much and *Biblion: Frankenstein* uses the same basic gestures to which tablet users have accustomed themselves ("iOS Human Interface Guidelines"). In this respect, the tactile elements of reading this digital book are only interesting insofar as the tactile elements of reading anything on a screen are interesting.

[78] Despite how many times I have read through *Biblion: Frankenstein*, this fact always takes me by surprise. I always assume there is sound and I just do not hear it because, like any sensible person invested in the transportive reading experience, I don't have my iPad set to make audible noises while I'm reading. I find music in digital books annoying, distracting, and ridiculous, which makes *Biblion: Frankenstein*'s lack thereof delightful. This is a text that recognizes that the appeal of the library is in its silence and uses the absence of sound far more effectively than most books use sound effects.

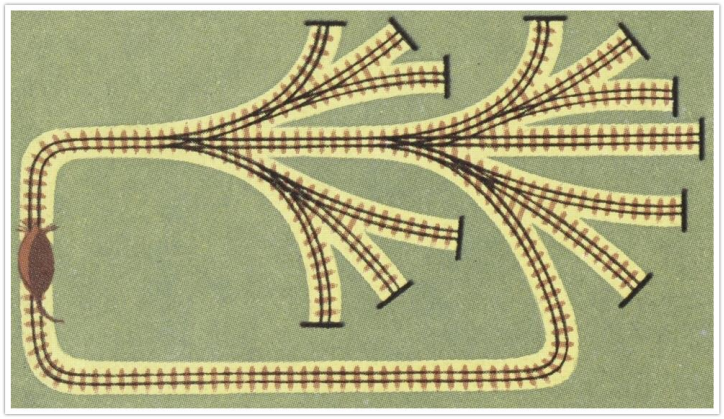
CREATION & REMIX

## The Modern Prometheus: Pushing the Limits of Creation and Remix

*An Interview with Henry Jenkins*

**AskBiblion**
Should copyright apply to remixes? What does "the Modern Prometheus" mean?

**LinkBiblion**
Jenkins' childhood memories of *Frankenstein*



"Teaching a machine to think" (ca. 1935–1938), a cigarette card insert that illustrates an early experiment in artificial intelligence. NYPL, George Arents Collection

**NYPL:** You've talked about how different monsters over time each represent "a vehicle that speaks to contemporary issues." What about *Frankenstein* and technology today?

**JENKINS:** Stories about Victor Frankenstein, Dr. Jekyll, and other mad scientists are often centrally concerned with the limits of knowledge and the disruptive potentials of technology, about the war between science and religion. After WWI, *Frankenstein* was interpreted as about being half human and half alive, at a time when many were returning from the conflict crippled and mangled. Today, the story is often inflected to speak to issues of genetic engineering.

*Frankenstein* has been considered both a key contribution to the horror genre and a defining early text in the emergence of science fiction. They are often described as diametrically opposed: horror is about

SOURCE: Mary Shelley's Handwritten Draft of *Frankenstein*

Figure 17. Interview with Henry Jenkins from *Biblion: Frankenstein.*

*Biblion: Frankenstein* combines the two main modes of handling text on a screen—the page turn and the scroll—with the former selecting between articles and the latter advancing text within an article. *Biblion: Frankenstein* does not fall into the trap of over-referencing the paper book and trying to find ways to bring the bookishness of the codex to the digital book, but its mode of conveying information is also not predicated on reinventing how readers read on screens. Their approach is familiar to anyone who has ever tried to read a webpage on a tablet. The pleasure is meant to be found in the arrangement of words on the screen and the accompanying images. The gestures are in line with the operating system's guidelines and their very boringness makes them intuitive and distraction-free. Provided the iPad is neither too fast nor too slow for the application, it just works.

The same cannot be said for the larger interface. Every article takes up most of the screen, with a slim, grey-green bar on the left side and, when relevant, small, colorful boxes that remind the reader of post-it notes on the right (Figure 17). Tapping on the bar or on the notes or swiping from the edge of the screen towards the middle will cause a previously hidden column of text to unfold (quite literally like a map) and push the article off to the side. It is, incidentally, very easy to do this by accident if one is used to turning pages by swiping. Such accidental motions are good for discoverability, but not quite as good for readers who would prefer to get on with actually reading.[79] On the left side, the greenish bar unfolds into

[79] Discoverability refers to how easy it is for a user to discover a feature or action in an application. Ideally, iOS interfaces should be designed with features that are unobtrusive, yet easily discoverable. The balance between the two is tricky, as developers often realize to their chagrin when trying to explain to users that the features they are requesting are already present in the application (Arment). As touch device usage grows, the lexicon of gestures expands and becomes more familiar to users. This simultaneously makes design easier for developers as they can assume their users are familiar with certain basic concepts, and more difficult as the range of possible things you can do with a finger on a screen is limited and

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navigation pane, showing the reader where she is in the article collection and allowing her to jump to another article if she so chooses. It also provides navigation buttons for returning to the home screen, going back, and accessing settings. On the right side, the pane that unfolds is called “connections” and its content depends on the color of the little post-it style objects. The notes, which evoke one of the many ways we take notes in physical books and link thoughts in the book to other ideas, may provide links to related articles in the themed collections or questions that are more or less related to the original topic to which the reader can write a response that will appear in the digital book. As of writing this dissertation, five years after the application’s initial release, there are about twenty questions with no more than ten answers for any given question. The links note is more useful, although it is not found on every article and can be fairly limited. For example, after reading the article about “Frankenstein on the Silver Screen,” the connections pane suggests that another article of interest would be “Frankenstein on Stage.” After reading “Frankenstein on Stage,” the connection pane suggests that the reader return to “Frankenstein on the Silver Screen”. The pattern of interactivity seems useful, but it fails to provide new and interesting paths for the reader to use to wander through the text.

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once “pull down to refresh,” for example, becomes the norm, a developer will have a hard time convincing the muscle memories of their users to do something else instead. (Pull to Refresh is not a random example; it was pioneered by Loren Brichter in his Twitter client and, over the next year or two, it became part of the basic Twitter interface and then part of Apple’s approved gestures. This is how the gestural lexicon grows.)

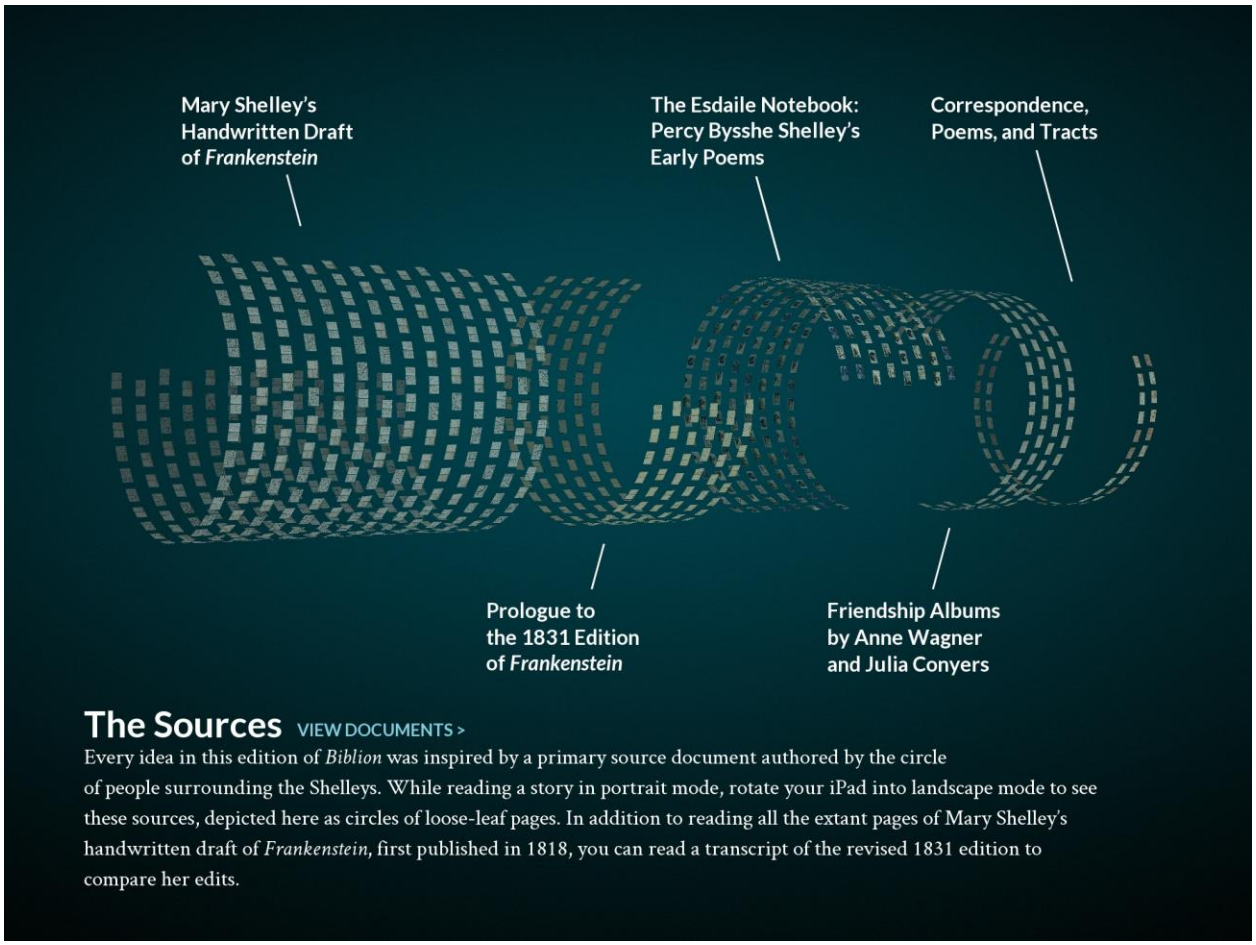


Figure 18. *Biblion: Frankenstein* in landscape mode with the source documents displayed.

The most interesting gestural, or perhaps tactile, feature of the application is its response to a shift in the iPad's orientation[80]. When held in portrait mode, the application functions exactly as described above. When turned to landscape mode, the entire application as the reader knew it disappears and is replaced with a different interface. The spiral of manuscript leaves from the loading screen returns and the reader is invited to click on a piece

[80] Features like this are what Apple calls custom gestures and are an example of elements that the current Human Interface Guidelines (HIG) suggests can be used well, if sparingly. In this case, *Biblion: Frankenstein* follows the guidelines to a tee: the usage functions as the reader would expect it to, it does something new and easy to remember, and it does not interfere with normal operating patterns for the interface. This feature, as envisioned by the designers, seems like the sort of thing programmers should be looking to include.

of the spiral to see the sources that inspired the articles (Figure 18). If the reader turns the iPad with an article open, the application will automatically take the reader to the source that inspired that particular article. It is impossible to view the article and their sources at the same time. Nor does the system work in reverse: selecting Shelley's Esdaile Notebook and then turning the iPad back into portrait mode does not provide me with a list of articles inspired by the notebook. Instead, it causes the application to crash. The software was clearly not designed to work this way. This feature appears to have been conceived as yet another pane that the reader can call up to explore and dismiss to return to the articles. It is meant to serve as one more resource; a neat feature to enlighten the reader who wishes to see the texts that inspired the articles. It operates like a museum exhibit: the manuscript pages are something to look at (under glass) and admire before returning the iPad to its proper, portrait orientation much the way one admires an object under museum glass before strolling on.

From this experiential sketch of *Biblion: Frankenstein*, we can turn back to Laurel's articulation of the six causes and examine this performance of the digital book of digitizations from the bottom up. On the level of spectacle, *Biblion: Frankenstein* is quite successful. The sensory elements of the digital book take into account the kinds of sensations one might wish to experience when reading a book and focuses predominantly on the visual and, to a lesser degree, on the tactile. Learning to read this digital book is a bit tricky: in articles with visual elements, the images or movies at the top of screen sometimes switch when the reader reaches a new paragraph, but there is no indication in the text that there is a new image to see. For readers who are used to print books and only look at the illustrations when told to do so or when first looking at a page, many additional images will pass unheeded. Though I know the images are there, I still fail to notice them as they shift; years

of blocking out external distractions while reading have left their mark and it is difficult to adapt my reading process to a new paradigm. *Biblion: Frankenstein* is least successful when the design and layout of the interface work against the reader's natural instinct. As *Biblion: Frankenstein* relies predominantly on the book as its metaphor—rather than, say, film or game—any element of the interface that does not conform to the reader's learned instincts will either pass unnoticed or frustrate the reader. In many respects, relying on the reader's familiarity with digital reading is successful: the scrolling articles, the swiping through to reach new pages, the ability to progress through the book linearly or via hyperlink, register as intuitive methods of experiencing the book. But in the moments when *Biblion: Frankenstein* breaks from that paradigm, the book becomes significantly more difficult to read.

As Laurel warns, it is often difficult to separate the causal elements and discuss, for example, the spectacle without shading into a conversation about the melody/pattern it produces. In this case, the pleasurable pattern of use comprises both the aesthetic design of the application and the tactile rhythm of tapping, swiping, flicking, and rotating. When it works, it is delightful, especially the act of rotating the iPad so it seems to shift from a book to a museum artifact. The screen turns, the image turns with it and, while rotating, it blurs and becomes something else. Rather than reading an essay about monstrosity, one is now looking at the scene in Shelley's manuscript where the creature first comes to life. Turn again and the action happens in reverse. *Biblion: Frankenstein* is still the only digital book I have come across that becomes a completely different book when turned on its side, which means this pattern remains an interesting novelty that distinguishes this digital object and adds to its appeal. It certainly succeeded in drawing my attention to and interesting me in this book in the first place. Having said that, the break in the pattern is just as important to the reader's

experience as the pattern itself and the book's tendency to crash when the reader starts in landscape mode, and rotates the iPad back to portrait mode interferes with the pattern (although, having done this enough times to make sure the error was consistent and replicable, it has almost become a pattern in its own right). Navigating via touch is a kind of dance, one that still requires more attention than turning a page, but that is also more interesting and returns the reader's attention to the book and its images rather than the text. The interruption of reading to navigate is itself part of the pattern of usage and, while not ideal from the perspective of long-form immersive narrative, is suitable for short articles where the break to use a different gesture coincides with the break between articles.

The relationship between reader and book is complicated further up Laurel's ladder of six causes. The next two are language and thought—the semiotics of the application and the actions from which thought may be inferred[81] as well as the language we use to speak to the

[81] Laurel argues that, when we talk about thinking in this context, the question of whether the computer can think is irrelevant. What matters is whether our mental representation of what the computer does is enough like thought. Did it "understand" my input, infer my intentions, and do what I wanted. if yes, the computer thinks enough for the purposes of human computer interactions (72).
To an extent, I agree with her. In most circumstances, our ability to understand how the computer "understands" our input in order to produce the correct output is irrelevant and the metaphor that the computer understands our selection and does what it is told to do works. The problem arises when the computer "misunderstands" the user: without knowing how the computer functions, it is difficult to fix. This problem only gets worse on tablets like the iPad whose operating systems put significant limits on what the user can know and access in the computer. In dismissing whether the computer thinks in favor of whether its representation of what happens "succeeded in getting me to make the right inference about its 'thoughts' [and] also succeeded in representing to me that it made the right inferences about mine," Laurel leaves no space for what happens when the representation fails, as all representations do for someone at some point (68). She appears to think that truly good design—proper treatment of the element of thought—will prevent these kinds of mistakes from happening by providing a framework for the entire medium and mitigating the degree to which a user can misrepresent the computer. I disagree: there is no application that can be made user-proof. Sooner or later,

application and our own intentions. This is where *Biblion: Frankenstein* begins to falter. This book has two levels of semiotic content: the texts or digitized objects and the application itself. On any given page, one will see the language of the text—the contents of the article—and of the application—the little gear that signifies settings. When well designed, the language and thought processes of the book application should complement the book's intentions. The language of design should speak to the language and visuals in the text. This is where I believe *Biblion: Frankenstein* runs into trouble. The crowdedness of the page and the brightness of the connections steal the reader's attention away from the information in the articles. The lack of indication when the embedded, digitized images shift is a space of silence where language should be. The book should tell the reader that there is something new to look at. To personify the application, it is so excited about everything that it can do, that it tries to do everything at once. Every page provides the option to read something new, to see something new, to turn the page and explore the manuscripts. It becomes a cacophony with no clear message. Based on the About page, the goal of this application is "to show how themes present in classic works of literature, such as Percy Bysshe Shelley's formative poems in the so-called Esdaile Notebook or Mary Shelley's novel *Frankenstein*, persist and continue to inform new works being created today." The articles echo this theme, looking at depictions of the creature in theatre and film, the idea of the monster and monstrosity, the role of creation and remix in art, and other topics. But the design of the application makes it difficult to explore these topics or these digitized objects in depth. The rotational dance between manuscript and article makes it difficult to focus on either as the reader turns back

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someone will end up trapped in a comedy of errors with all the errors and none of the knowledge needed to get the joke.

and forth to read about the object and look at it. There is too much to see and do to really focus on either the manuscript or on its descriptions. The spectacle is there and the language is there too, but it does not cohere into thoughts that allow the reader to infer intentions. Even after reading the application many times, I am still not sure what it is saying.

This lack of coherence naturally extends to the agent and action elements of Laurel's metaphor as well. Laurel tends to use software with actual agents as her examples (game characters, computer assistants, Clippy the reviled Microsoft paper clip), which adds some difficulty when one tries to extrapolate to a piece of software with no obvious personality in which to locate the agent status. However, I would read *Biblion: Frankenstein* as having an implied albeit absent "docent" agent who presents the material to the reader and suggests connections and other interesting features. This imaginary docent bears the hallmarks of its material cause and shares the same disorganized, unclear intentions that come through in the thoughts, to continue using Laurel's language. The docent and application are the same thing: they direct the reader's attention, provide the information, attempt to guide her through the exhibition all in the service of the main action: encountering the source documents and learning about the long shadow they cast. And yet, the fullness of the experience is lacking. The application design is too busy; it focuses on quantity rather than moments of significant engagement. Every gesture has the potential to change the images or to bring in new connections before the reader is ready. As Laurel would put it, the application does not provide an opportunity for the reader to engage.

Such an experience is very different from visiting the manuscripts in situ. There, the books themselves are the main features, with all of the additional information waiting for the reader to show interest. This human-paper interaction, facilitated by another human, is the

reverse of *Biblion: Frankenstein.* Here, the goal is to focus on the manuscripts and experience them fully and, only then, to ask questions and discover more information. The main action is the same and the agents have the same tasks. However, the agent at the Pforzheimer Collection was the curator, Elizabeth Denlinger. Artificial Intelligence still has a very long way to go before it can function like an expert in a field and visiting the collection under the guidance of a curator provides a far more fine-tuned approach than simply throwing what appears to be a reasonable number of connections up on the page and hoping some of them speak to the reader. A person can provide more nuanced suggestions and can also make connections that would be outside the realm of what the software might think to suggest.[82] The goal of visiting the manuscripts is to visit the manuscripts; to see and experience them. We are still conditioned to the value of being in the same room as a piece of history or a work of fine art. Though Benjamin argues that "what withers in the age of the technological reproducibility of a work of art is the latter's aura" and that "reproduction detaches the work from the sphere of tradition" (22), my experience is that returning to the work in its place, a situated object contextualized by its tradition, the aura of the work returns. Paradoxically, the closer we come to the original, the more the aura and the sense of distance returns. To touch Percy Shelley's Esdaile Notebook is to simultaneously be aware of one's closeness to history and to feel the weight of it distancing the person from the manuscript. The protocols of handling a rare book reinstate its aura. The feel of pages made from rags rather than wood pulp, the marks on the page that could be stains from a careless

[82] While I was visiting, Denlinger brought out George Eliot's research notebooks for Daniel Deronda where Eliot kept all of her research on Judaism and Jewish customs. Though far outside the stated purpose of my visit - to see in person the collection featured in *Biblion: Frankenstein* - I found the experience of seeing these notebooks and marveling at Eliot's diligence to be deeply affecting.

author or a not-careful-enough reader, and the heft of the book itself are all sensory experiences utterly different than the pinch and zoom and rotate of the digital book. The reproduction absolutely loses its aura, but the original holds on to its history and context and aura.[83]

It would be inappropriate to judge *Biblion: Frankenstein* for not being the experience of visiting the manuscripts in person. Yet *Biblion: Frankenstein* makes little use of the manuscripts at all: they are the backbone of the book as suggested both by the visuals and the stated intent of the project, yet they remain poorly integrated into the book and often turn into a distraction. They are difficult to appreciate in app form as the manuscript leaves are utterly dislocated from their context even as book objects. This is a case where the boundlessness of the library works against the application. I cannot engage with the leaves as book objects, but the book itself provides no indication of how I am meant to engage with them. The book instead leaves the reader questioning her own engagement with the text: Should I read Shelley's original manuscript? What am I looking for in the Esdaile poems? Why are the friendship albums interesting in the context of Shelley and *Frankenstein*? The digital book tries on a book-like atmosphere where the images and text balance one another and the latter elucidates the former, yet the design of the book hinders true engagement, promoting instead a kind of digital desultory browsing. The reader must muddle through.

*Biblion: Frankenstein,* part of a young-ish genre on a very young platform, lacks a

[83] In fairness to Benjamin, he provides examples of objects that have been reproduced and decontextualized to such a degree that even the originals have lost their aura. HIs main example is the Mona Lisa and, having never been to the Louvre, it is difficult for me to argue that going there and seeing it in person is not influenced by its reproduced ubiquity. Few objects, however, have suffered that kind of auratic degradation and it seems like too much of a stretch to take the most extreme example of technological reproduction and call it paradigmatic.

robust method that the reader can use to turn its database of materials into a coherent narrative. Hypertext fiction, in contrast, may provide a multiplicity of paths, but the actual act of reading through and choosing has a structure and rules that the reader can follow. The very act of reading constructs the narrative out of the database of possibilities. When N. Katherine Hayles discusses the complementary roles of narrative and database, she explains that "Because database can construct relational juxtapositions, but is helpless to interpret or explain them, it needs narrative to make results meaningful…if narrative often dissolves into database, as [Ed] Folsom suggests, database catalyzes and indeed demands narrative's reappearance as soon as meaning and interpretation are required" (How We Think 176). *Biblion: Frankenstein* functions as a database of materials, but the interpretive structures that help the reader make narrative meaning out of the database are either lacking or sometimes, in the paucity of linkages, actively work to resist these connections[84]. Books have reading protocols; we know how to read a book. Digital books, though they need not and often should not follow the same rules, have a structure for reading as well. As the genre develops,

[84] There is an argument that *Biblion: Frankenstein* is, perhaps unintentionally, preserving the manuscripts through this lack of narrative. In *How the Page Matters*, Mak emphasizes that digital facsimiles in particular are imbricated into new narratives by their inclusion in collections, and their deployment alongside like (or unlike) facsimiles in databases. The facsimiles are not the things themselves, but new objects that are inextricably linked to the originals while also possessed of their own histories and receptions (71). The lack of coherent narrative in *Biblion: Frankenstein* keeps open the ways in which the facsimiles can create meaning. Of course the inclusion of these pages, rather than other books or letters, in *Biblion: Frankenstein* already locks the facsimiles into a particular historical narrative. There is no real way of avoiding this problem while still publishing annotated digital editions. I think Mak would find such a solution as unpalatable as I do. Her argument and thus mine emphasizes awareness. As readers, we can take the contextualization done for us for granted and fail to recognize that the inclusion of, for example, the friendship albums in a series of articles about creation and remix is an argument about their provenance, their historical place, and their relation to *Frankenstein*. Or we could attend to it and interrogate it. Such awareness should inform any reading of them as digital texts.

the paradigm of the digital book will concretize. Though—to my mind—an interesting and important look at what digital books can attempt in the process of presenting material, *Biblion: Frankenstein* fails in its capacity to rise above the sum of its parts. It just does not work.

*Biblion: Frankenstein*'s failure is tied to its muddied intentions and, perforce, to its inability to clearly articulate how it moves its reader. The language of emotion—to affect, to move—is both the language of alteration and the language of journey. Though the reader does not need to be transported, the works that affect us create some kind of embodied change in us as readers. We are moved by them. Whether we are moved to a new emotional state that causes us to linger in sorrow or joy over a text or moved by excitement to learn more, books are meant to change the embodied experience of the self. Some books have even moved me to throw them across the room in disgust. As Sianne Ngai discusses, both negative cathartic emotions and ugly feelings that offer no catharsis have their place in literature: one is sometimes asked to sit with an uncomfortable feeling that provides no resolution and, in doing so, the reader achieves a kind of ironic distancing (10). Such feelings have an aesthetic purpose.

Human Computer Interface Studies has no theory of ugly feelings and does not accommodate the desire to provoke the user in its design principles. Designers caution against frustrating the user with examples ranging from Donald Norman's doors to the eject disk operation on the early Mac on through the current Human Interface Guidelines for iOS.[85] "Aesthetic integrity represents how well an app's appearance and behavior integrate

[85] Norman doors, named for Donald Norman who first described them, are doors that do not clearly indicate by their design whether a person is supposed to open them by pushing or

with its function. For example, an app that helps people perform a serious task can keep them focused by using subtle, unobtrusive graphics, standard controls, and predictable behaviors" ("iOS Human Interface Guidelines"). A spreadsheet application that distracts the user from accounting is poorly designed. A novel with stylistic flourishes that distract the reader from the narrative is making a critical argument in that those flourishes are meant to inform and alter the reader's understanding of the text rather than merely interfere with her reading comprehension. Or so we assume and are trained, as literary critics to assume. We see the frustrations of literature as themselves a form of semiotic content, while we see the frustrations of the interface as a mistake.

In trying to determine what distinguishes between a frustrating book that is perceived to have aesthetic value and one that is merely irritating, I first assumed it was a matter of content versus container. The text can frustrate and, in doing so, provide a rewarding experience as the reader delves deep for meaning. The codex should not frustrate, should not require the reader to cut open the book or attempt to read missing text through blacked-out ink. Except that is precisely what books do. To pick two contemporary examples, *S.* by J.J. Abrams and Doug Dorst and *House of Leaves* by Mark Z. Danielewski respectively do those very things. We read and enjoy them nonetheless. Moreover, texts written for the computer can behave in a similar fashion. William Gibson's poem in *Agrippa: A Book of the Dead* is

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pulling. Most such doors have handles on both sides rather than a handle on the "pull" side and a push plate on the "push" side. This is an example of poorly designed everyday objects that do not clearly convey to the user how they are meant to be used. They are also an example of an easily solvable problem that nevertheless goes unsolved because many designers do not spend enough time thinking about the lived experience of real users. Ejecting floppy disks on a Mac once involved dragging the disk to the trashcan icon. This took some users time to adjust to as it broke the metaphor of the trash can as delete/discard. Naturally, when Apple changed this operation, users were just as upset.

designed around one of the great frustrations of computing—the text that cannot be saved—yet its frustrations also fold themselves into the reading experience and constitute an aesthetic and critical argument. There is space for negative affects in these interfaces because they are deemed integral to the experience. The divide is not between interface and content (a spurious divide in any event), but between that which seems to belong to the experience and that which does not. Cutting apart the leaves of a book is integral to the experience, while carefully peeling apart the pages of a book that fell into the bath is not.

So while the distinction might be framed as integral versus ancillary to the experience, it might be better to call this the difference between intentional and unintentional interface elements. Here, intentional refers not only to the designer, but to the user. For a text like *House of Leaves* or *Agrippa* to evoke the positive and negative readerly affect that one hopes it will, the reader must also be convinced of the relevance of these emotions to the reading experience. That is the crux of the problem when it comes to emotion in design. As readers or gamers or users, we grant certain objects the capacity to delight, to frustrate, to intrigue, and to anger us. Books, video games, hypertext fictions, and movies are all objects that we believe ought to cause a wide range of emotions and so we are receptive to those emotions; not merely to feeling them, but to granting them meaning and believing they are an integral part of these experience. Not so with managing finances in an Excel spreadsheet that will not format the data properly or a word file that will not save: we believe such features are always mistakes and always the result of computer errors or poor design. There is no space for a theory of the frustrated user when design theory tells us time and time again that users do not want to be frustrated or angered. We are told that users do not want to be annoyed and so as users, we internalize this. The iPad should "just work," to use one of Steve

Jobs' favorite sayings about Apple products. We should not need to read the interface to develop ironic distance from the book we just want to peruse. We do not intend to experience those emotions.

*Biblion: Frankenstein* is an example of how incoherence in intent leads to incoherence in design and confusion on the part of the reader. its design choices and their effects strike me as unintentional on the part of the designers but, perhaps more importantly, the digital book does not adequately convince the reader that its design frustrations are intentional or productive. The experience of desultorily perusing the book is fine, but it frustrates any sustained or serious engagement, especially with the digitized manuscripts. It is fun to play with at first, but the manuscripts are uninteresting to the layman who is not yet invested in them, while the articles are written precisely for that layman who lacks prior knowledge of the field. With the exception of *Frankenstein*, the articles are much more likely to use the manuscripts as springboards to discuss contemporary media and culture rather than focus on their contents. This is not a problem in and of itself, but it does leave one wondering why so little attention was spent on providing the interested reader with the tools and knowledge that would explain the objects. The book is a frustrating read, despite its visions of seamlessly bringing the library to the reader.

Both fairness and a momentary shift towards a less subjective viewpoint require me to acknowledge that my disappointment with the application may reflect a mismatch between what I believe the book ought to be and what the book actually is. As someone interested in the manuscripts, their provenance, and the research surrounding them, some of the flaws I read into *Biblion: Frankenstein* may be that this book was written for someone with vastly different interests than mine. To some extent, the reviews agree with this assessment. Writing

for The Verge, Adi Robertson finds that "the new material is generally very strong. Some is standard annotative stuff […] It's not anything that couldn't be conveyed in printed text, but the link-based organization makes it more approachable. There's also a wealth of criticism and commentary." Having said that, Robertson agrees with my sense that "the interface is rich, but a bit confusing," and the Kirkus Review agrees that there is simply too much and the features are difficult to find. Robertson also finds the manuscript difficult to read and study in any detail, though he, like I, thinks that the book that becomes a new book when orientation shifts is a fine idea if lacking in execution.

One could, I suppose, argue that even the disorganization and the information overload is intentional and meant to cultivate a distracted, disordered reading that encourages the reader to move around and draw on hyper rather than deep reading skills (see Chapter 1 where I discuss N. Katherine Hayles and hyper reading as a way of establishing the shape and breadth of a large field of knowledge). The reader is not meant to engage deeply, but to always be darting through the book in search of bite-size chunks of knowledge before flitting away again. That strikes me as a misreading of this book for two reasons. First, the book is not designed for hyper reading either and, second, I cannot imagine the New York Public Library deliberately trying to frustrate deep reading. As a digital book, *Biblion: Frankenstein* makes some desultory moves towards building links between texts and connecting the texts to their manuscripts, but the links themselves are neither prominent nor ubiquitous enough to function as an alternative approach to reading. It is easy to flip through the article titles, but hard to move between articles and next to impossible to return to one's earlier place in it. The app lacks the thoughtful organization needed for serious hyper reading that accounts for the reader's movements as they try to construct their knowledge of the field. The articles

themselves are very clearly meant to be read from beginning to end rather than in small chunks with links to similar articles. And, to repeat myself, deliberately designing for distracted reading does not strike me as plausible behavior for a library deeply invested in its collections. While providing features for hyper reading in addition to deep reading might be a wise choice, the cluttered page, hidden navigation, and use of media as distraction actively disrupt deep reading. And even if the library had chosen such an approach, the lack of robust tools for hyper reading would not materially change my argument that the book is unsuccessful.

The other critical component of this analysis is that *Biblion: Frankenstein* constitutes an early foray into making books for the iPad. It is the second (and last) publication put out by the Boundless Library imprint. As a young work in a young field, *Biblion: Frankenstein* suffers from many of the flaws inherent to working out the semiotics of a new genre. It has to decide how to speak to readers, rather than drawing on a long tradition of how such works make meaning. That the app only draws somewhat on its sibling genres of web pages, interactive fiction, and books is a testament to the desire to do something new and interesting on the iPad, but also a reminder that it is not enough to break away from earlier designs; the book must also offer a new paradigm.

When it was first released, my thoughts on *Biblion: Frankenstein* were more charitable (Shayne 6). I was intrigued by its set-up, charmed by its rotational gestures, and optimistic about what it suggested for the future of iPad books. The digital books that followed in its footsteps, such as the enhanced and annotated editions of T. S. Eliot's *The Waste Land* or James Joyce's *The Dead* and *Ulysses* successfully position the text itself at the center of the digital book. These are books designed to facilitate reading where the articles

and annotations lead the reader deeper into the text in contrast to *Biblion: Frankenstein*'s approach of keeping manuscript and paratext separate. They differ in design from *Biblion: Frankenstein* because they differ in intention. *Biblion: Frankenstein* does not, in its design, show care for the original manuscripts and their contents. It professes to do so, but the actual arrangement of the application marginalizes those texts rather than showcases them. Because *The Dead*, for example, makes explicit its interest in the text of Joyce's story and positions the text of the book and the audiobook version at the front and center of the application, while ensuring that all the ancillary details relate back to the original text in an obvious fashion, the interface design meshes with the goal of the application. It is, at least to this seasoned ebook reader, easy to use. But it is also a book that treats one famous story. The scope of *Biblion: Frankenstein* gets in the way of it having such a cohesive design; it is not itself a cohesive thing.

In contrast, *Summer of Darkness: 1816* by Anindite Basu Sempere and Andrew Sempere is a much more cohesive performance of the life, if not the afterlife, of Shelley's circle. Released in May of 2016 in honor of the 200th anniversary of that famous summer in Geneva, *Summer of Darkness* (hence *Summer)* catalogues the events from May 1816 through to early September, beginning with a prologue and ending with an epilogue that discusses the backgrounds and fates respectively of the five principal figures whose lives are catalogued therein: Byron, Percy and Mary Shelley, Claire Clairemont, and John Polidori (Figure 19). The book is designed along a timeline. Each day contains a title and brief explanation of the events, followed by an excerpt from the correspondences, diaries, or other writings from one of the five. The excerpts are digitizations, but present only the text copied out of the original books. When the application was originally released, each day's excerpt would only become


Figure 19. First page of *Summer of Darkness: 1816*. Used with permission from Digital Scenographic.

available on its 200th anniversary so the reader could experience the summer in "real time" albeit 200 years late. The previous days remain available for those who started late and wished to catch up. Now that the 200th anniversary is over, the reader can choose to read *Summer* like a book where all the pages are completely available or in "notification mode" when the application releases new content each day so that the reader can follow along at the original pace.

*Summer* is far more streamlined than *Biblion: Frankenstein* and, in Laurel's terms, executes a much more coherent performance. When read in its original form, *Summer*

succeeds in presenting short snippets and brief moments of encounter. Rather than deep or hyper reading, *Summer* relies on serialized reading where the reader is only expected to encounter the text in short bursts. The application makes clear how it intends itself to be read by its reliance on the timeline. Of course, the reader could choose to unlock all the content at once if she so wishes, and the application, like other serialized forms, supports "binge reading" as well as breaks between daily episodes. Because *Summer* draws on a serialized form already deeply embedded in contemporary culture—the short story in tweets, the serialized novel and the television series are all designed to be consumed piecemeal while they are released and in one giant gulp afterwards—its readers need not think about how they are meant to engage with it. The Semperes have adopted a familiar approach and modified it for their digital book. Linking serialized reading to historical reading is new and this particular way of accessing the contents of manuscripts is very different than *Biblion: Frankenstein,* but *Summer* is much less ambitious in how much it wants to cover and what kinds of innovations it wants to produce. Perhaps unsurprisingly, its willingness to limit itself in scope is what allows it to succeed. The Semperes have created a book that capitalizes on short attention spans and notification-based engagement. While I rejected a reading of *Biblion: Frankenstein* as designed for distraction, I think that description accurately assesses *Summer*'s relationship with its readers. The serialized and, crucially, time-bound narrative justifies the shortness of the encounter, but also frees the reader from being overwhelmed by the material. It it a momentary reminder that, 200 years ago, Polidori and Byron left for Switzerland and Polidori wrote about it in his diary. The reader engages with the event through the frame of history and the specificity of time and then stops. Unlike in *Biblion: Frankenstein,* where the reader has a multiplicity of choices, but no direction, *Summer*

engages for a moment and then tells the reader to back away. The frustration lies instead in anticipation. And the application is small enough and linear enough that one could read it in one sitting without getting lost.

Another feature that differentiates *Summer* from *Biblion: Frankenstein* is that the former is much more invested in providing the contents of the manuscripts for the reader. *Biblion: Frankenstein* sees the manuscripts as museum artifacts and situates them as historical curiosities and the fertile soil from which the articles grow. Not to belabor the point, but the manuscripts as backbone or soil also make them invisible. The design of the application disincentives reading the manuscripts. *Summer* takes the opposite approach. It uses the words extracted from the manuscripts and published works to present the text absent the facsimile of its origins. *Summer* makes the text easy to read and situates the text using the timeline to preserve the historicity of the text without preserving the digitized facsimile that attests to that historicity. It lacks the aura of the originals, yes, but no more so than the digitized and uploaded versions. If the goal is to bring the manuscripts and the story of the year without a summer to a wider audience, the Semperes have pared down the book to what they feel are the critical components—the content and the flow of time—in order to produce something with a cohesive design narrative and the capacity to induce affect in the reader through the short bursts of anticipation and reward that constitute notification-based reading.

My ideal application would be a combination of the two books. Though *Summer* is the more successful in articulating its intentions through its design, I would like to have the actual digitized manuscripts visible in addition to the extracted text. There is still something interesting about seeing the letters as they were sent and the diaries as they were written. And, as Mak notes, transcription is always an act of editorial decision making (66). I

understand why *Summer* lacks these features: leaving aside aesthetic and legibility issues, there are significant issues both with acquiring the rights to publish these images and with the size of the application. In its current form, *Summer* is a modest sized book. *Biblion: Frankenstein,* on the other hand, is the largest non-game application on my iPad and the third largest application overall. Many graphics-heavy games still take up less space than all the digitized images in *Biblion: Frankenstein.* Space is a non-trivial consideration for many readers and, even if I have enough space to download the application in the first place, I might delete it soon afterwards. Yet for all its failings, *Biblion: Frankenstein* was a noble experiment in how to use digital interfaces to engage the digital reading public in the contents of the archive.

**II. Researching Affectively**

Judging by the design of so many digital and enhanced editions of great works, from *Biblion: Frankenstein* to *The Dead* to *Shakespeare Pro,* one might easily come to the conclusion that the manuscripts do not matter. At best, they are marginalized within the digital book. At worst, they are entirely absent. Many books fall somewhere in between by offering the extracted text without the image of the manuscript. The reason is probably practical: high quality, legible images take up orders of magnitude more storage than the text they contain and few people will read the content of the images. Even books like *Biblion: Frankenstein,* which includes these images, take the approach of the museum exhibition catalogue where the images are for looking rather than for reading and the act of meaning making takes place in the explanatory material. The reader might appreciate the image, but the image often functions more as visual reference for the larger project of the exhibit. The major affective experiences of SEEKING knowledge and taking pleasure in finding occur

outside of the images.

This distinction between the text that is to be read and the facsimile thereof is one that Yin Liu explicates in his article entitled "Ways of Reading, Models for Text, and the Usefulness of Dead People." Liu argues for four approaches to the text: the material text instantiated in the facsimile that exists to be seen, the structural text meant to be stored or transmitted that is instantiated via transcription, the semantic text that is meant to be read and instantiated through editions that explicate how the text should be read, and the data-based text[86] that is instantiated in the visualization and designed to be processed. The relationships between these models of text undergird some of the tensions found in earlier chapters of this project: Sefaria understands the corpus of Jewish literature as data-based texts, while Artscroll is deeply invested in the facsimile that exists to be seen. No model is inherently better than the other, although one model could certainly be preferable for a given use case. Conversely, examining a specific instantiation of a text invites the reader to ask which method of reading was this particular text designed to facilitate?

In the case of digital books, they seem to be based predominantly on the model of the semantic text while eschewing that of the material text. That is, creators of digital books assume that their readers are invested in editions rather than facsimiles. Given how few readers of any books are interested in reading reproductions of the original codex rather than clean print, I have a hard time disagreeing. The book, for most readers, is understood to be fungible. While certain specific books may become set apart as particular objects that have accrued affective meaning through use or through authorial signature—rather in the way that

[86] The play on database is both intentional and illustrative of the way that texts are often transformed into visualizations.

objects are made unique and thus become sacred through separation—a reader cares about the semantic text, not the material text. If I lend a copy of a book to a friend and said friend loses the book and purchases a replacement copy, I am still satisfied to have gotten my book back. Conversely, those invested in reading the material text are, as Liu says, invested in viewing rather than reading. Insofar as they are reading, they are reading the codex object or this codex in conversation with other codices. They are likely already familiar with the text.

For scholarship like this, researchers benefit from digitization practices that emphasize the manuscript objects. Scholars of the codex are the exact opposite of the imagined audience for the digital book; they are the people who need access to the manuscripts, who want to examine incunabula, and who stare at the binding of notebooks. They are, in short, those who benefit most from digitized images and those who most need access to the objects themselves. I addressed the relative trade-off between digitized and physical books in the introduction and I want to return to that dichotomy now through the lens of a particular question: what makes a digitized codex "good enough"?[87]

Let us take as given that the manuscript, its print facsimiles, its digital facsimiles, and its transcribed contents are all distinct objects with equally distinct provenances and materialities. This is Bonnie Mak's argument in *How the Page Matters* and I take my reading

[87] Though not explicit in this analysis, I realize I have borrowed the language of good enough from D. W. Winnicott's discussion of the good enough mother. For Winnicott, the good-enough mother is the mother who begins by adapting herself to the child's developmental needs and gradually pulls away as the child grows more competent to deal with the frustrations of having her desires remain unmet (14). For Winnicott, the language of good enough emphasizes the practicality of care-giving rather than aspiring to perfection. Good enough, as a way of thinking about literary objects, captures this sense that the object need not be ideal in order for the readers working relationship with it to flourish. It also accepts that, like with parenting, frustrations and limitations can be an integral part of that relationship.

of the importance of distinguishing between different versions from her. The encoded digital facsimile, for example, may be more different from the print facsimile than the latter is from the manuscript itself on the level of its material construction. Moreover, all of these objects exist in a network, whether that network is of like objects, of similar images, of artifacts exhibited alongside them, or of poems from other collections with which they are anthologized. Without acknowledging that each of these objects is a distinct object, linked to all the others, but also possessed of its own history and future, one makes the mistake of reading them as the same thing. This is an understandable mistake—there can be something uncomfortable about the idea that two readers have not read the same book even though they have read the same text—but it remains true that the media specificity of the object informs our reading experience. For this reason, I only want to ask what constitutes a "good enough" digitization and clarify the way in which good shifts given the circumstances.

If we think of digitized codices as replacements (in some, although not all, cases) for accessing the physical book, then the question can be rephrased as what would make them acceptable reproductions of their originals in a given use case. To some degree, this is a question of affordances: what kind of information needs to be embedded in and accompany the digitized image? One might want to see every page in the book, including blank pages and covers. One might want details about size, weight, and materials. One might want annotations explaining what scholars who have seen the object in person believe a particular stain to be. In another sense, this is a question of making do: what needs to be available so that a scholar who cannot access the codex in person feels they have adequate information with which to discuss it nonetheless? When might a scholar benefit from the digital rather

than the material edition?[88] Finally, in what way does the qualitative experience of the digitized manuscript differ from that of encountering the physical copy and in what way does that distinction matter?

There is no good way to answer such questions without going to a collection or archive to compare one's experiences. At the same time, if I am researching the experience of visiting the collection, the actual manuscripts and codices fade from view. Though materially present, they are also strangely immaterial. To solve this problem, insofar as it can be solved, I will use my visits to the Jewish Theological Seminary to see the first printing of the Vilna Talmud and to the Pforzheimer collection to view the contents of *Biblion: Frankenstein* as my test cases. Both of those visits were undertaken as part of a larger research project that, on the one hand, engages with the books as objects and, on the other hand, engages with their digital reproductions as distinct books. I will address the Vilna Talmud, Percy Shelley's Esdaile Notebook, and Anne Wagner's friendship album in their material and digital forms to evaluate what the objects themselves provide that the digital versions cannot. I will, where I can, make suggestions that could improve the interface and better capture an affective experience similar to, though manifestly not the same as, physically encountering the object. My goal is not to replace the physical with the digital, but to understand what changes when that substitution is made and, with that knowledge, suggest ways that the digital experience can be more fruitful.

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[88] I realize that the shorthand of digital in opposition to material is both simplistic and incorrect, glossing over the countless servers needed to store high quality images, the wires needed to make them accessible, the thumb drives needed to collect them, and so on. They are no less material than their paper and vellum counterparts. And yet, our experience of the manuscript and the printed book as real, material objects in a way that their digital versions are not remains (perhaps in part because we persist on using such language to describe it).

Though the reproduced image itself is at the center of inquiry, much of what makes a given reproduction helpful is determined by its metadata, the information that surrounds and accompanies the thing itself. In this respect, the digital reproduction is no different from the manuscript. The more information that can (preferably unobtrusively) accompany the object, the better. Like a museum artifact catalogued, accounted for, and meticulously described, the digital manuscript gets reinserted into its historical and contextual place with the help of the metatexts surrounding it. This is the inevitable effect of any collection: the book becomes an entry in a database along with all the information that the database was designed to hold. So the record substantiates certain kinds of information like weight and paper type, and occludes other knowledge, such as the sensate experience of the book. There is no database entry for the pebbled texture of a cover or the smell of an old book. The selectivity of the collection's database already circumscribes research to those who are interested in the information that the database holds.

For the reader interested in this context, the manuscript fades into the background. The data is presented on the screen and, since the reader both need not and cannot pick up the object itself in order to learn more, the object itself really does disappear. Reading that a book weighs one kilogram or that a piece of paper is the size of a folio is very different than lifting one kilogram or holding a folio. The metadata quantifies the experience and gives the reader the necessary objective language to discuss that experience absent the book, but the encounter with the book itself allows the manuscript to enter into the reader's understanding with more, for lack of a better term, solidity. Anne Wagner's friendship album is 8 x 12.5 cm. That is to say, it is fairly small. But examining the high resolution digital images on a computer screen entirely fails to convey to the reader just how small that is. Even if she

happens to have something of roughly equal size (such as a 7 x 14 cm iPhone) to provide a sense of scale, the experience of holding the actual album and marveling at the detail is very different. Holding it in one's hand invites the reader to imagine what constructing and creating the friendship album would be like and what kind of work it would require. It returns the reader inexorably both to the materiality of the multi-media object and the sense of it as the authors' handiwork, the quite literal work of the author's hand. The object becomes an experience.

One could imagine trying to fix this problem through interface design, although one would quickly realize that the problems are not as easy to solve as one might wish. Trying to display, for example, the friendship album's pages at their actual size independent of the device used to view them is a surprisingly difficult exercise[89]. Trying to show the album's dimensionality is equally frustrating as even the highest quality digital images fail to convey the tactility of the metal foil stamps attached to the page or the slight shift in texture between the pages of the book and the rice paper images purchased for insertion. The problem is simply that these objects were created and designed to be used in three dimensions. Until the technology for virtual reality exhibits becomes feasible and commonplace for archives—which, realistically, will be long after virtual reality becomes commonplace in games—there is only so much the interface can do to provide the reader with the experience of holding the book in her hands.

[89] I would argue that the best approach is the one I came up with: the interface should tell the reader to pick up a smart phone and use that as a decent approximation of the size of the album. Of course, this presumes the reader has a smartphone, but it does help convey the actual size of the album by grasping an object of similar size.


Figure 20. Page from Wagner's album featuring illustrated swan, rice paper coral, and preserved insect. Photograph and annotation mine.

For such a singular object as Wagner's friendship album, with its cut-outs, paintings, inscriptions, pressed flowers, and even the occasional insect preserved for posterity (Figure 20), reading it remotely proves quite a challenge. Not, though, an insurmountable one. The ideal situation would be for the reader to visit it once at the Pforzheimer Collection in order to grasp its size, shape, texture, and artistry. With that experience of wonder under her belt, she could then turn to the digital reproductions and read them in minute detail at her convenience. The digital edition allows her to compare non-facing pages of the album simultaneously should she, for example, wish to look at every page that either mentions or was written by Felicia Hemans, Wagner's niece. Or every page that depicts an animal. Digital

Figure 21. Wagner's album, closed. Photograph mine.

recombination expands on the possibilities already inherent in the scrapbook style production of the original, allowing the reader to engage with the book through the book's own artistic methodologies and create new knowledge out of new combinations. With the webpage, I can deform the book and learn through PLAY. Cutting up the original, one imagines, would not go over well.

It is worth noting that this approach only works on the NYPL's website and not in the *Biblion: Frankenstein* application. Not all digital interfaces are alike and reading Wagner's album in the app and on the website is already a stunning example of how important interface design is when dealing with a text. The *Biblion: Frankenstein* version is taken almost completely out of context. It has a short introduction that mentions very little about the album's owner and nothing about the physical object itself. The webpage, on the other hand, is filled with metadata that describes what the album is, its historical interest, the physical media from which it was crafted, its dimensions, and other information to which a reader

would quite reasonably wish to have access ("Anne Wagner Album, 1795-1834"). The website also allows the reader to view the pages in order or sorted and filtered. One could, for example, look only at the pages with watercolor paintings. The website images are also free to download and use, should the reader wish to do more with them than possible on the website. The website somehow manages to provide more information while allowing the reader more freedom. Though both the application and the website are the exact same digitized images, the interface through which they are accessed determines not only what the reader can do with these objects, but even whether she is inspired to try.

Such an approach, however, still benefits from having seen the book in person. Having done so, I can recognize the difference between paintings that were painted in the book itself, those that were pasted in, and those that were purchased to be painted.[90] I can remind myself of how small and fragile the book is and the effort needed to preserve it. Bound, the book feels like the other scrapbooks I have handled and it retains this sense of precariousness, as if it could fall apart or exceed its bindings at any moment (Figure 21). It was an object meant not merely to be used, but to creating a record of affective encounters. The album is filled with sketches made by friends and notes from acquaintances that preserve the momentary emotions of friendship by writing them into the page. For Wagner, her album is a tool for recalling, of making absent friends feel present through their textual presence. Conversely, the digital facsimiles of the album pages are objects designed for preservation

[90] Though entirely irrelevant to this discussion, there was a thriving market for what we would classify today as scrapbook materials marketed (like today) almost exclusively to women. The Pforzheimer Collection also contains an advertisement for such an emporium, S. & J. Fuller's Temple of Fancy at 34 Rathbone Place, where a woman like Wagner could have purchased the coral-shaped cut-outs and and stamped metallic foil that appear scattered throughout her album.

that highlight the pages themselves and not the affects stored therein. The precariousness of the original is gone along with the sense that it preserves affect. There is no real way to make the experience of handling the book, from the use of the velvet snakes that hold it open to the simple ritual of washing one's hands, extend to the digital versions.

One wonders about the feasibility of digitizing the experience of reading the album in person. Especially for a book like this, filled with discrete snippets of content that do not necessarily flow from one to another, might one film the experience of a reader reading the book? Such an addition, short though it would likely be, would provide an actor with whom the reader could sympathize and whose behavior and emotion the reader could take for her own. Enacting the reading provides a much better context for scale and for the reader to watch someone else touch the object that is out of reach to them, reifying it through viewing the performance of reading. This is the approach taken by the Pathfinders initiative, headed by Dene Grigar and Stuart Moulthrop, in preserving the early works of hypertext literature that either are or are soon to be obsolete. Grigar and Moulthrop interview the creators and then film them as they move through their works, capturing individual reading paths and the authors' reflections as they read. Something similar could be done for works like Wagner's album. The sheer materiality of the album makes a straight transfer to a digitized form without the attendant context difficult. Having seen it in person, I can relate it to other objects in my life (such as my phone, scrapbooks, or albums I have made as a child), but only after that first visit in person.[91] Watching someone else manage the album provides a mediated

[91] There is a degree to which this experience is gendered: scrapbooking, not to mention friendship albums, are coded feminine and constitute an engagement with recombinant art that tends to be overlooked. Elizabeth Denlinger, the Pforzheimer's curator, has recently started sharing her work on the album and I am deeply grateful to her for introducing me to it

experience of reading it; that experience is not the same, but it would be, I think, good enough. The act of reading the book is remediated alongside the book and both together constitute the reading experience.

The benefits are evident: creating a narrative of the experience lets the reader take advantage of all the ways in which cinematic narratives provide mediated experiences. And yet the drawbacks are still present. Filming a singular encounter runs the risk of turning one individual's experience with the text into the definitive reading of the text. As Bonnie Mak points out in her discussion of digitization, choosing to digitize only one version of the text suggests that it is the correct edition, rather than one among many (67-8). Filming an individual's encounter with the text runs the same risk of creating not just an example of what reading looks like, but a protocol against which all other readings are an aberration. It makes official something that neither needs nor should have a singular approach.

Additionally, there are some practical concerns with video content. Videos take up a significant amount of space: the same problem with using images instead of text applies to using video instead of still images as well. Videos need to be filmed, cut, processed, and uploaded. Would this labor intensive process need to be repeated for every book in the collection or would it suffice to have some exemplary objects that define the reading experience for the rest? There are many different albums in the archive, ranging from small

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in person. But encountering the object without some familiarity with how women create these books will add to the reader's difficulty in picturing the digitized version accurately. One would naturally hope that any scholar seeking information about this book would be familiar with the practices, then and now, surrounding its creation, but it is worth emphasizing that this album exists in a larger network of like items and that familiarity with the kind of book that it is helps tremendously in reading it and is another way for a reader who cannot visit the book in person to appreciate what the experience of seeing it would be like.

friendship albums like Wagner's to large sketchbooks. Choosing between them would itself be a complex task.

Nevertheless, such an addition would make for a better reading experience than the one currently provided. In the same way that looking at a page of the album online is significantly better than looking at it in the *Biblion: Frankenstein* application even though it is not a patch on seeing it in person, adding additional materials to help the reader imagine the experience of visiting the collection would further narrow the gap between being there and not. Watching another experience wonder at the size or intricacy of the album or take delight in the humorous juxtapositions of scrapbook art and preserved insect reminds the reader to relate affectively to this material. Wagner's album is interesting not because of who made it, but because of the work and time that went into making it and the way in which it records Wagner's emotional experiences with her family and friends. Wagner's album, like Shelley Jackson's stitched-by-hyperlink hypertext quilt and her description of Mary stitching/writing long into the night to create her creature, is a work of recombination and of craft. Wagner's album is doubly interesting because of the circles she moved in and because she had the diligence to create something that spanned years of her life (which, as anyone who has ever tried scrapbook-making for a week can attest, is quite an accomplishment). The main thrust of the work is the album as a work of affective craft, a bound object made by human hands that glues together the pages of a life. Under such circumstances, any attempt to exhibit the album without also exhibiting the experience of the physical album cannot do it justice.

For this reason, Wagner's friendship album is a singular kind of book. Because its value is located in its production and media, the text itself cannot really be divorced from the

book itself. There is no transcribed edition for there would be no point in creating one. And because Wagner—and, sadly, Hemans—is not particularly well-known, the book lacks the cult of personality that surrounds works by famous authors. The better-known manuscripts—like Mary Shelley's *Frankenstein* or Percy Shelley's Esdaile Notebook—function rather differently. In Percy's case, the notebook is not all that interesting as a codex. The interesting portion is the fair hand copy of his early poems and what these early works are like. The text matters far more than the codex. The codex itself is not a work of art or of craft: the craft lies in the semantic content. So for a work like this, digitization is a very different animal.

Having the Esdaile Notebook digitized and available is useful as a reference for readers curious about the poems' provenances, but the digitized copy is not all that different from the original and they are mostly fungible except from an affective perspective. There is not all that much that a reader can appreciate about the notebook that cannot be appreciated by the digitized leaves, especially as the notebook has been transcribed and annotated in Kenneth Neil Cameron's 1964 edition. Though there may be some information not contained in the annotated version that a particularly assiduous scholar of notebook production in the early 19$^{th}$ century might need, the book itself has already been situated within Shelley's life. The research already done locates the text within a history that is, on the one hand, the responsibility of the researcher to familiarize herself with and, on the other hand, an enclosing of knowledge around the book that restricts what it can be used to mean. It has a place in history, which also confines it to its history. It is in the realm of affect, of going to the library and holding Percy Shelley's actual notebook, where the codex escapes the confines of its own historical place. The reproduction lacks the aura, while the notebook itself is still the book that belonged to the poet. Digital humanists are as susceptible to the

aura of the poet as anyone else and Henry James was onto something when he wrote "The Aspern Papers."[92]

If the only purpose of visiting the Esdaile Notebook in person is to reach out and connect, for a brief moment, with the afterlife of Percy Shelley, there seems little scholarly reason to insist on doing so. Unlike Wagner's friendship album, which is constructed out of a multiplicity of materials that are not easily digitized and obscure enough that it has received little scholarly attention, Shelley's notebook has already been studied and remediated into objects designed for scholarship. The work of uncovering and discovering was already performed and, though this means the reader reaps the benefit of previous work, it does raise the question of what remains to be gained through pilgrimage to the Pforzheimer collection. While I grant that it is a moving experience to hold the book that was held in turn by one's object of study, that affective movement does not take the reader anywhere. It is movement for the sake of being moved, connection because connection is possible. It does not offer access to the poet in the way that reading his poetry or studying his life offers. It is, at best, a recognition of the embodied nature of both authors and readers and it facilitates a moment of imagined connection between reader and author, scholar and book. It is quite an experience, though that experience does not automatically serve a scholarly purpose.

The replacement of the manuscript with the digital reproduction assumes that the digital reproduction is as complete as the printed one. In the case of *Biblion: Frankenstein,* the Esdaile Notebook suffers from the same lack of context and explanation as Wagner's

[92] "The Aspern Papers," James' 1888 story about a collector obsessed with getting access to an elderly woman who supposedly possesses the papers of the fictional poet Jeffrey Aspern, was inspired by the misadventures of a Shelley-enthusiast, Captain Silsbee and his attempts to access the papers held by the aging Claire Claremont and her niece (James, 395).

Friendship Album. The additional information found in Cameron's edition does not yet exist in ebook form—which is unfortunate, given that this is just the sort of object that would benefit from becoming an enhanced digital book like *The Dead* and *Summer of Darkness*. The audience is quite small, though, and so digital reproduction bows to the practical concerns of creating it. The necessary reproductions exist, both of the digitized pages on the NYPL's website and of the transcribed and annotated text, but they have not been combined into a single, digital object. Such an object, especially if it attends to questions of design and uses the Cameron annotations to present information as metadata that returns the reader's engagement to the poems themselves, would rise to the level of "good enough" and present a compelling emotion-laden reading experience.

In asking what makes a digital reproduction "good enough," I try to balance the conflicting impulses to say that the manuscripts are marginal and the manuscripts are irreplaceable. Both are, to a degree, true, and the scholastic context that defines the nature and needs of a given reading of the book are also critical when determining whether the available digital resources will meet one's needs. Though obvious, the more information available about a given work, the less the reader needs to see it in person. The truly obscure works are the ones that most need digital reproductions, as they have not yet been found and included in the larger catalog of objects available online.[93] As the works become replaced by

[93] In February 2017, a graduate student made news after discovering a new short novel by Walt Whitman ("Grad Student Discovers A Lost Novel Written By Walt Whitman"). His discovery consisted of cross-referencing names in digitized databases and discovering that this novella had existed and been digitized, but written under a pseudonym. This is not to diminish his accomplishments, but to recognize that they exist only because librarians and archivists put in the effort to scan and transcribe these sources. It is only possible to discover something in the archive, as Michelle Moravec observed on Twitter, if someone else already performed the labor of placing it there in readable form.

their digitizations and metadata, they become more like the Esdaile Notebooks and less like Wagner's Friendship Album. This is a positive development in the larger project of making cultural artifacts accessible to researchers who cannot see them in person and to lay people who wish to learn more about them. There is no value in refusing to digitize in order to preserve the fantasy that the ideal form of an encounter is the only available one.

Even my use of the term "best" is questionable. For a researcher who needs to compare different textual witnesses of the Babylonian Talmud from its first incunabula to the definitive Vilna edition, digitization lets her lay them all out side by side on a screen. She can place books that exist on opposite sides of the globe on top of one another and compare sizes, shapes, and editorial choices. The best reading experience is not to stack five priceless tomes atop one another, but to make use of digital tools like the Saul Lieberman archive, which are designed for this task. The pilgrimage to hold the physical codex remains the most affectively fraught approach to reading and research, but the digitized books that free the reader from that very fraughtness are the most amenable to experimentation and manipulation. A digital interface with the appropriate metadata lets the reader take ownership over the digitized book and is almost always good enough.

If the reproductions of the Esdaile Notebook and the Vilna edition are not "good enough," then no kind of reproduction will be. The Esdaile Notebook's function as the locus for the sacred connection between the reader and the dead author is impossible to capture in digital form because it is precisely the aura of the author, separated by distance and death, that clings to the object and is lost in the remediation. Neither digital nor print reproduction can have this aura, nor does one need it in order to be a scholar. One might argue that it is better to research without the affective connection to the writer and the text in order to

maintain critical distance. I think such an argument goes too far; there is value in studying objects that do not merely interest us, but delight us. There is value in loving our research objects and a kind of caring for them that we perform by doing research. The physical moment of handling the manuscript is part of that larger relationship that we build with our texts, but it is only one method of strengthening the bond between researcher and research. We need not touch the objects of our studies in order to hold them dear.

The specter of the pilgrimage to the codex nevertheless hangs over this conclusion. If I own several copies, in multiple different sizes, of the Vilna edition of the Babylonian Talmud, why should I care to visit the original? The text is no more nor less holy in one edition than in the other. Though my research led me to understand how the aura of the Talmud grew vested in this specific layout, I am surprised every time to find myself susceptible to it. Despite my willingness to use other editions and staunch refusal to limit myself only to reproductions of the Vilna edition, I still stand in awe of the massive volumes of the first 1880 printing. The size, the crispness and the color of the ink, the agelessness of the volumes rebound for preservation succeed in restoring the layout's aura, even for me. Holding the book is a reminder of the work that Romm and Feigensohn put into creating it and my own fascination with the story of its genesis. The physical book is itself a network of associations and memories. And the haptic encounter with the codex produces a more layered network of affective associations than the visual encounter with its copies even when it is not a singular object like a manuscript.

The closest parallel experience I can recall is reading *Patchwork Girl* on an Apple II using the original 3.5" diskette at MITH, the Maryland Institute of Technology in the Humanities. Like the Vilna edition, the diskette is from the original publication of a much

copied text and is not singular so much as particular to a time and place. The experience of using an older model of computer and recalling all the old protocols I had not used in decades provided the defamiliarization that reorients me towards the specificity of the book and the device. In both cases, familiar texts are once again made strange through their provenance and the reading experience is brought back into the reader's awareness. These media signify explicitly, rather than remaining implicit meaning-makers to be drawn out through media specific analysis. Using them draws my attention to the particular reading experience and, in turn, to the way that the medium affects me.

Facsimiles are designed as stand-ins for the absent objects they represent. Using them to reach the experience of the particular that defines the encounter with the manuscript is impossible. We can, however, turn back to the idea that the facsimile should be good enough for what it is required to do and, rather than ask it to replicate the particularity of the manuscript, seek other ways to build affective rapport with our objects using their media substrates. In the case of digital facsimiles, the reader should have access to the images themselves and be invited to play with them, recombine them, and deform them. Changing the terms of the encounter between the reader and the book builds the affective relationship between them. Working with the digitality of the digital book and teasing out its potential is not only a possible path towards new insights, but a way of developing care for the book. Though also a useful technique with print, transforming the digital book into an object ripe for playful manipulation can overcome the distance that often seems to develop between reader and digital book. The playfulness that guided my use of the Sefaria database re-emerges here under the guise of interactivity. As with the hypertexts I discussed in the previous chapter, interactivity and agency substitute for more familiar methods of relating to

a text. Here, though, the interactivity is extra-textual, bounded instead by the extent of the reader's inspiration. If reading the manuscript restores the medium to the reader's awareness and focuses her attention on the codex itself as the locus of emotional resonance, then creative techniques that rely on the digital medium can create complementary affective experiences between the reader and the book. When I mine my digital books for data visualizations, choose my own adventures through their branching paths, and annotate their images as part of my personal photo gallery, I develop new methods of building bridges between my books and my self that are emotional experiences grounded in my agency as a reader. I affect them and they, in turn, affect me.

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**Appendix 1** – Mining Data from a Digital Book

In the following section, I will briefly discuss the two different methods by which one can access some of the data inside of a digital book. Many elements of the application are still unavailable unless one is an iOS developer. However, as the target audience for these books likely does not have a developer license, I limited myself to the kind of access made possible by owning the device and purchasing the digital book. While greater forms of access may be possible either by paying $100 dollars to become an iOS developer or by contacting the publishers directly, I found that I preferred to approach this problem as an ordinary reader. To whit, I wanted to know how much of the application I could reveal—how transparent it was—without specialized forms of access. Each method below produced roughly the same results; I provide both because each one assumes different hardware on the part of the user and has different potentials for use. The following set of instructions is a record of my experiments and assumes substantial knowledge on the part of the reader. While I hope I have provided enough information to replicate my experiments, this was not written as a how-to guide.

Option 1: iOS Backup, for iPad and Mac users

This option was the easiest and the first one I tried. When connecting an iOS device, such as an iPad or iPhone to an Apple computer, one is given the option of backing up the entire device to the computer's hard drive. The device will copy the most recent version of every application on the device to the user's hard drive. Provided the user does not change any settings, the backup copies of each application should be stored here: /Users/User_Name/Music/iTunes/Mobile_Applications/

The applications themselves will not run on an Apple computer. However, right- clicking on an application, such as Artscroll, gives the user the option to “Open With” an archive utility that can unarchive all the data in that application into a new folder. That folder will contain in it a folder entitled “Payload” and, in that folder, an application that, once again, cannot run on an Apple computer. Right-clicking on that application offers to “Show Package Contents”. All the images, sounds, lines of code that run the application, stylesheets that control how text is displayed, etc. that were used to create the application are now available.

This approach only includes parts of the application available on the App Store rather than any additional content purchased by the reader.

Option 2: SSH into an iOS device, for iPhone users on any operating system

NOTE: Jailbreaking, the act of circumventing the restrictions placed on a device by its manufacturer in order to use the device in a manner not authorized by said manufacturer, is a legal exception to the Digital Millennium Copyright Act in the case of iPhones. The exemption does not apply to iPads. For that reason, the following instructions refer to an iPhone only.

This option is the less appealing of the two to most users as it requires using the device in a manner frowned upon by its manufacturer. It does, however, provide greater access to the data stored on the device than the former option.

Jailbreak the iPhone. After doing so, install OpenSSH, which allows one to use the SSH (Secure Shell) protocol to access the contents of the device through the command line. Next, one could either use the Linux terminal window (on a Mac) to connect to the

iPhone or one could use a dedicated FTP client to connect to the device and browse the file directory. I used the FTP client Cyberduck on my Mac. On my device, Artscroll's digital book was located at

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/private/var/mobile/Applications/2F627140-25E5-4D95-BDE6-CAA4A3C2377A. The contents of the Applications folder are all labeled with a string of characters. Imagining the delight I took in opening each one individually to see which was Artscroll is an exercise left to the reader.

This method allows somewhat more access to the actual data in the device, possibly also including information downloaded by the user. And, unlike the previous version, which may only work on an Apple computer and certainly only works on the computer linked to the device, this method can be used with any computer.

**Appendix 2** - The Extracted Variables from Morris's *Frankenstein*


"variables":
 {
 "Adom": false,
 "acidbath": false,
 "alienation": 0,
 "anatomy": false,
 "beautiful": false,
 "debug_unlock": false,
 "demonize": false,
 "dissemble": false,
 "ep_alone1": false,
 "ep_alone2": false,
 "ep_cabin": false,
 "epilogue_unlocked": false,
 "henri_rolled": false,
 "justine_was_killer": false,
 "making_the_mate": false,
 "split_to_17b": false,
 "split_to_18": false,
 "split_to_18a": false,
 "split_to_20i": false,
 "split_to_26": false,
 "trust_you": 0,
 "unlocked_1_chapter_2": false,
 "unlocked_1_chapter_3": false,
 "unlocked_2_chapter_2": false,
 "unlocked_2_chapter_3": false,
 "unlocked_3_chapter_2": false,
 "unlocked_3_chapter_3": false,
 "unlocked_4_chapter_2": false,
 "unlocked_4_chapter_3": false,
 "unlocked_5_chapter_2": false,
 "unlocked_5_chapter_3": false,
 "unlocked_6_chapter_2": false,
 "unlocked_6_chapter_3": false,
 "unlocked_part_2": false,
 "unlocked_part_3": false,
 "unlocked_part_4": false,
 "unlocked_part_5": false,
 "unlocked_part_6": false,
 "victor_empathy": 0,
 "walton_clueless": false,
 "with_Alphonse": false