This Is A Book. This Is Not A Book.

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This is a Book. This is not a Book.

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ABSTRACT

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This is a Book. This is not a Book. (40pp.)

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The book is an icon. The book is a sign, having symbolized the divine word, knowledge, wealth and power. Today, the book has become a mutable medium, capable of functions commonly considered outside of the book’s scope through digital technology. In particular, personal devices that perform basic functions, such as playing music or taking photographs, alongside more advanced operations such as geolocation and speech interpretation and recognition, have redefined long established industries. They have rapidly eliminated technological barriers while simultaneously shifting their function to include more of our daily experiences. Traditional book and ebook advocates tended to focus on this condition as binary, with one format being preferable to another. While both groups have valid arguments, at the root of their disagreement lies the digitization of long established icons and a concern for their significance as the concept of the book evolves to include electronic experiences. This thesis will argue that the book has been able to maintain its iconic status despite translation into varied electronic formats. Formerly, the book has been defined objectively; now the book is defined subjectively, considering the electronic evolution of book experiences.

Approved: _____________________________________________________________

Sherry F. Blankenship

Associate Professor of Art
DEDICATION

To my wife, Carma

And my three wonderful children,

Gwen, Livia and Wyeth
ACKNOWLEDGMENTS

This thesis would not have been possible without the encouragement, guidance and support of my thesis committee, Don Adleta, Sherry Blankenship and Art Werger alongside the staff of the Southern Ohio Museum, in particular Tom Bridwell, a true friend and scholar.
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INTRODUCTION

The book is an icon, having long been considered a cultural artifact, valued for its materiality inasmuch as its textual communication. As an inspired object, Emperor Constantine used the codex, along with the crucifix, to distinguish early Christian iconography from other religious icons. Based on this and other such sacred connections, the concept of the book is inextricably tied to ritualistic functions. From a relic to a talisman, the book carries spiritual and metaphysical connotations that began even earlier. For example, copies of The Book of the Dead have been found in Egyptian tombs attesting to social status rather than a reflection on its readership. Equal parts symbol and fetish, resource and commodity, the book has always operated in an ambiguous terrain.

As an integral part of material culture, the book is a concrete object. Notable fields of scholarship have evolved in order to study the book’s changing materiality, from antiquarian book studies and book conservation to more recent digital humanities. The book’s physicality has been widely studied in addition to non-conventional uses.

The book is a sign, having symbolized the divine word, knowledge, wealth and power. Aside from these established parameters, the book also occupies a more unconventional framework. Non-textual uses of a book have gone undocumented throughout history, persisting only as anecdotes. From using a particularly heavy volume as a weapon, using a thick book to elevate, or by association as personal ornamentation and interior decoration, and even acting as a food product, these curious scenarios are embedded into a common notion of the book.
Likewise, digital technology has had an immeasurable impact on the way in which society consumes information, subverting many of the roles that books previously occupied. Not limited to simple textual information distribution, digital industries have incorporated a range of experiences into a book language from user interaction, image creation to augmented realities.

Recently, the personal device with its ability to perform basic functions, such as playing music or taking photographs, alongside more advanced operations, such as geolocation and speech interpretation and recognition, has redefined long established paradigms, such as photography, music and now the book industry. They have rapidly eliminated technological barriers while simultaneously shifting their function to include more of our daily experiences.

Given such a wide scope of the book’s form and purpose, arriving at a satisfactory definition can be difficult. Merriam-Webster defines the book in no less than nine distinct ways. The Oxford English Dictionary lists sixteen unique definitions. The connecting thread that runs through each definition is centered on the collection and presentation of knowledge. These distinctions draw few lines between the traditional book and its electronic equivalent. However, the book as defined in these resources depends on a certain amount of singularity that is difficult to resolve in the digital context. This amounts to a false sense of objectivity that is being questioned by technological innovation.

The focus of this research has been on this paradigm shift as it redefines the definition of the book. Electronic books, along side the emerging idea of the book as a
stand-alone application as seen on the personal device, are shifting the notion of the book from a singular, objective definition to a mutable medium, capable of including functions commonly considered outside the book’s scope, in addition to a more immediate methods of revision.

Book and ebook advocates tend to focus on this condition as binary, with one format being preferable to another. While both groups have valid arguments at the root of their disagreement lies in the digitization of long established icons and a concern for the book’s significance in traditional terms. This thesis will explore the book’s ability to maintain its iconic status despite translation into varied electronic formats.

Today, the book is an analog technology that exists both physically and as an abstraction. This paradox is not limited to the present digital abstraction of the book but exists in a well-documented book/text relationship. The traditional book form is the specific physical container while the text can be referred to as the content. As a concrete object, books have a materiality, defining a book language such as covers, folios, pages, etc. As an abstract, the text exists separately from the book, being manipulated and designed in many different forms, remaining conceptually intact.

The electronic age has pushed the concept of the book into a new environment where this paradox is not eliminated but complicated by digital innovations. A multifunction device, admittedly of its own materiality, replaces the known physical container. However, it lacks a certain specificity found in the traditional book. Likewise, the text is confronted with open-source technology, previously limited to computer
software, wherein the notion that information (text) is inherently unchained by materiality.

These innovations have often been cited as the death of the traditional book. While this extreme viewpoint has seen sharp criticism, this position cannot be wholly dismissed. The broad field of textual bibliography has tempered this condition by proposing different types of text consumption constitute an alternative delivery method. Recent reports from the book industry support this notion. In this environment, the definition of the book seems to be fluid, adapting not only to the physical container but to the content as well. This condition does not eliminate the necessity for a definitive definition of a book but calls for a more inclusive clarification of an existing situation.

Textual scholarship has established parameters for defining what is and what is not a book. Making distinctions between ephemera, tablets, scrolls and the codex, these definitions are based on text and materiality, distinctions that continue to be revised as new book forms have developed. We live in a time of transition from analog experiences to digital abstraction. Letters have transitioned to emails and the Polaroid has been replaced by digital photography. Downloaded music rarely takes a concrete form. Today, paradigm shifts have become commonplace. The book is no exception. Large-scale projects such as Google Books and Project Gutenberg have lead many to question the integrity of the book in the expanding electronic sphere.

In the broadest sense, the definition of a book can range from any drawn, written or printed text, reproduced by any means and circulated publicly. This expansive definition might include Phoenician bills of lading, letters from Emily Dickinson and the
latest evolution in electronic book development, *book-as-application*. Scholarship tends to focus on the significance of a book through its conventional, objective relationship, contending that printed books have certain desirable qualities that have been honed over time, namely resolution, tactility and collectability, while electronic books have distinctions of their own (economy, searching, interlinking). Though not wholly incompatible, overlaying these characteristics creates a tension based in the notion that all books (printed, electronic, audio, etc) should adhere to a single, objective concept. Shifting the discussion from an objective book definition to subjective book definition by focusing on the largely ignored non-textual uses of the book, this research will uncover the influences these non-conventional practices have had on the book’s iconic status and how these continue to contribute to the shifting terrain of the book in an electronic environment.

This research will experiment with the book structure by translating it from traditional forms into an electronic format by researching historical evolutions of the book structure. Quickly moving past the simple, mimetic formats for a more experimental investigation of the book as an application, the book’s definition becomes more plastic while remaining intact. To my surprise, I came to the realization that my research was not about the book in and of itself, but a more individualized interpretation of the book, resulting in a final project that tests this new-found subjectivity.
THE HISTORY OF BOOK EVOLUTIONS

One function of the book is a collection of a culture’s aesthetic, intellectual, and traditional values making the clay tablet one of the earliest structures. While evolutions in book forms continue to be connected to evolutions in writing, nowhere is that relationship more apparent than in this earliest context. The act of inscribing word signs, pictograms and number signs on formed clay tablets became a common practice in Iraq some time in the late fourth millennium BCE. (Nissen et al. 1993)

These credit card sized tablets had a scraped flat surface prepared for incising a grid-like pattern used to contain single units of accounting. Accounting was the initial function of these early records, though they quickly became the preferred form for more complex agreements as the methods of writing evolved to include correspondence, political events and incantations. (Van De Mieroop 1997)

These early innovations cannot be overstated in light of recent electronic book transformations. Early Sumerians made the shift from a language made up of representation of objects to mark making in an effort to represent sounds. Later, examples extended to a form of conjugation. Not surprisingly, the visual aspect of these forms became more and more abstract. The size and shape of these tablets also began to transform in response to this new writing system, cuneiform, which reached it height in use around 2400 BCE. (Geller 1997)

Cuneiform quickly gave way to alphabetic Aramaic when it reached the Middle East. In excess of 600 unique signs with a wide range of interpretation for each
depending on context and syllabic values, cuneiform was simply too complex for everyday writing. (Eliot, 69) Becoming a specialized literacy, cuneiform achieved a prestige for its use in communication to the gods, leaving Aramaic to be used on a perishable medium and relegated to a lesser status. The last cuneiform tablet can be dated from around 75 CE. (Geller 1997)

The book saw another evolution in Egypt and Greece around 2900 BCE. The scroll, or papyrus roll, pre-determined by the length of cut reeds used in its production, revealed its content in a long horizontal roll, necessitating a continuous unveiling and concealing of its content. While Egypt remained the only country to manufacture papyrus, it was shipped across the Mediterranean. A work on papyrus had the distinction of having significant scholarly merit, while wooden tablets coated in wax served as a more ephemeral book structure used by merchants.

Early Greek paintings show scholars reading scrolls such as Sappho reading to her students. However, the act of writing was dismissed as copy work and not a scholarly activity. Representations of figures holding scrolls on tombstones and frescoes show the importance of the scroll as a sign for education and class. With the content of the scrolls being hidden, the presence of the scroll in this context speaks more as a status symbol than as a statement about the content of the scroll.

Around the second century CE, text began to be copied into the new form, the codex, instead of the traditional papyrus scroll. History shows that many authors disappeared in this shift, their work deemed not worthy of translation into the new format. (Eliot 93) The codex, due to the use of smaller page size, easily accessible
sections of information and ease of production, surpassed the scroll as a more practical means of disseminating information and quickly became a preferred book structure.

While no specific documentation of the evolution of this book form, it is easy enough to deduce the reasoning. Practically, the scroll was quite fragile, being wound round and round itself. The codex, being a stack of sheets laying flat and bound on one edge, was more durable and solid. It likewise could contain more information as information could be written on both sides of the page. It could be opened and closed and reopened again to the same point, while the scroll would need to be rolled back completely. The codex represents the first instance of the random access structure. (Eliot 93) The codex evolved through a series of technological improvements, beginning with: the use of vellum and later paper, as it folds easier than papyrus, the flexible quill pen, replacing the reed pen, and design adaptations like the use of a single or multi-column page. Through this continual evolution, the basic codex form has remained unchallenged as the cheapest, easiest and most portable means of transmitting information for close to 2000 years, placing the codex as the one of the greatest human inventions.

The codex carries an additional distinct as a marker separating pagan religions and Christianity. Images of the earliest examples of the New Testament are shown as a codex despite the more common papyrus roll form. Ideology might have more to do with this innovation than practicality. While the Old Testament and the Torah were always written in the scroll format, early Christians may have shown a distinct break from tradition through the use of this new form, the codex. (Eliot 93)
The codex did not become widely adopted until the adaptation of Christianity as the state religion of the Holy Roman Empire by Emperor Constantine in 306. Ordering Bibles for each of his foundations, he ensconced the codex as the chosen format for Christian Scripture. This elevated the codex from a cheap alternative for the underclass to an honored book structure.

These early evolutions characterize the many shifts from medium to medium throughout book history. The dynamic transformation from the clay tablet to the papyrus scroll to the codex exemplifies the inherit conflict between the content and the container. Each component evolves out of a need for a more efficient and practical means of disseminating information, propelling each other into an evolutionary cycle still seen today.

Although the codex form would continue to be refined over the ages, it would retained much of its original integrity until Vannevar Bush, the former director of the wartime Office of Scientific Research and Development published an article in the July edition of *The Atlantic Monthly* at the close of World War II. The pivotal article entitled, *As We May Think*, Bush sketches out a new book structure deemed a *memex* utilizing an *infostructure*, urging “scientists to turn their energies from war to the task of making the vast store of human knowledge accessible and useful.”

This *infostructure* would give rise to a proto-form of hypertext, the underlying concept defining the structure of the Internet. Bush’s idea was founded in the need to augment the research methods of an individual working in isolation by connecting, annotating and sharing published works along with personal trails to create a new form of
knowledge. By creating *associative trails*, Bush conceived of a new method of linking text with personal comments and subsequent *side-trails* to recreate new information thereby altering the way in which we record history.

Bush has been credited for predicting a wide range of technological breakthroughs from hypertext to the Internet. Most notably his reference to an online encyclopedia has been directly linked to the concept driving Wikipedia, “Wholly new forms of encyclopedias will appear, ready-made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified.” (Bush 1945)

Bush envisioned a world where content was no longer created by inscribing in clay, scratching with a reed pen or writing with a fountain pen on paper or printed on a press, but would be generated subjectively, through associated trails of virtual data. This fluid method of developing content would once again call for an evolution in the container. It would have to build on the basic tenets of book evolution, economy, efficiency and collectability, while simultaneously, opening the format for unknown possibilities. Has the personal device answered this call?
THE ELECTRONIC BOOK

The iPad, Kindle and Nook, alongside countless smart phones, have become favored reading devices since first appearing on the marketplace in 2007, 2008, 2009, respectively. Publishers have continued to remark on their increased sales year to year, citing color displays and increased accessibility as major contributing factors. The electronic book (ebook) notably surpassed sales of traditional books in 2011 by as much as 13.6%. (Flood 2011)

While ebooks are cutting edge technology, interest in the electronic text did not begin with a focus on the personal device but finds its roots in the mid-1960s with Ted Holm Nelson in his second self-published book, Literary Machines. “Most or ‘all’ of our reading and writing can or will, in this century, be at instant-access screens.” Later he writes: “The Xanadu™ Hypertext System will be an unusual and probably unique repository in which all forms of material – text, pictures, musical notations, even photographs and recordings – may be digitally stored … and accessible from any port at and time.” (Nelson 1981) After many upgrades, HTML (Hyper-Text Markup Language) became the standard language behind the internet as well as electronic books.

Following a similar formula seen in the transition from clay tablet to scroll, the method of creating text evolved without a clear solution in delivery. Though early attempts of transmitting text online helped to develop a communication network, early digital texts were not books but catalogues of books. The Library of Congress pioneered the introduction of electronic texts in a library environment with the birth of the MARC
(Machine Readable Cataloguing) in 1965. However, an electronic book would not be directly accessed until the development of a robust, tamper-proof medium with the ability to store hundreds of pages. The CD-ROM (Compact Disc – Read Only Memory) met this need in 1986 with the publication of Grolier’s Electronic Encyclopedia. (Eliot 456)

Encyclopedias, staples of the publishing industry, quickly began to see promise in an electronic option. Microsoft Bookshelf, Encarta and Encyclopedia Britannica adopted the electronic book into a business model. The CD-ROM began to be referred to as, “The New Papyrus,” as traditional publisher began to transition to electronic publishers. As more libraries began to divert their funds from select genres, reference and academic books, toward electronic texts, publishers also utilized this technology to electronically store texts and producing limited print-runs on-demand.

Moving beyond reference and academic books, Michael Hart founded Project Gutenberg in 1971 on the premise that any computer-generated information (text, pictures, sound, etc) could be reproduced indefinitely. A self-professed book lover, Hart created the idea of the “eText,” a digitally encoded book, readable by electronic means. Books would be converted to a digital string of characters using the most widely acceptable binary coding, ASII (American Standard for Information Interchange). Hart envisioned free and open access to all books, anywhere and at any time. The acknowledged father of the ebook, Michael Hart used the digital format to deliver electronic books that would not require special software or require anything but the most basic connections. Project Gutenberg remains the largest, single collection of free electronic books.
Several initiatives were launched from 1995 – 2004 but all have been overshadowed by the partnership formed between Google and some of the greatest research libraries (including Oxford, Harvard, and New York Public Library) to scan millions of books. Books still protected under copyright would be accessible only in snippets or excerpts while out-of-copyright would be entirely accessible, free of charge. Major publishers, assuming a direct infringement of their rights, filed lawsuits. However Google’s position remained resolute. “… it (Google) already scans the entire contents of websites in order to provide its much-admired search service … the scanning of books to provide a comprehensive in-depth search capability in no different.” (Eliot 461) Since its inception, Google has scanned more than 20 million books in addition to spurring competition from other initiatives that following the same model. Offering a searchable, scanned file that is not downloadable Google Books is promoted as a means to discover and search inaccessible books. Similar to a libraries role, Google Books’ focus is creating an archive of both physical and electronic books by electronically translating not publishing.
THE PERSONAL DEVICE

While major projects, such as the Gutenberg Project and Google Books, have increased interest in electronic books, the introduction of the personal device has had an immeasurable impact on the consumption of ebooks. These devices, ereaders and tablet computers alike, have created a dynamic environment blending attributes from the book experience with characteristics of digital technology. While ereaders are similar to tablet computers, they use electronic paper technology in place of an LCD display, which increases battery life and readability. Advancing from page to page by pressing a button on either side of the display, ereaders have a familiar computer to user relationship. Though often called ‘readers,’ they are not limited to reading books. Using a built-in connect to the supplier’s proprietary network or utilizing a connection through any WiFi zone, these devices have access to a variety of media.

Tablet computers, most notably the iPad, represent an experiential shift in the dialogue of the electronic book by incorporating touch screen technology. Apple’s personal device is promoted through its use as a personal reading device utilizing the preloaded application, iBooks, in addition to a full range of color, connectivity using WiFi along side other features previously experienced through the iPhone, together with support through the iTunes store. The iPad became a monolithic force virtually overnight, constituting more than 75% of the tablet computing industry in use today. The iPad’s book interface exhibits all of the hallmarks of a standard electronic publications such as user interface supporting increased accessibility through brightness
and contrast options, font style and size options, etc. Using three of the five sense: sight, sound and touch, the iPad offers an interactive book experience through use of its built-in interface, iBooks.

The electronic books are viewable in single page and, for the first time, two-page spreads, representing a major shift in ereader interface from the representation of text as one string of characters presented on a display screen to distinct pages. This form resituated the electronic book by basing it in the historical codex form rather than the continuous string of characters envisioned by Bush and Nelson.

Aside from technical limitations, the notion of an ebook as an electronic copy of a physical book remains a common misconception. With the increased amount of information originating in a digital format, the eBook is quickly becoming a more immediate approach to disseminating publications. It is estimated that over 93% of new information produced is begin created in digital format. (Lee, 227)

Due to the drastic improvements in the manufacturing of personal devices dedicated to reading on a display, ebooks have received increased attention as a viable alternative for paper-based books has seen a drastic increase over the last five years. Resolution has increased from a standard 72 pixels per inch (ppi) to 264 ppi on the latest iPad display. In addition, ebooks have improved to include operations such as keyword searches, highlighting and immediate referencing through the devices built-in dictionary.

Electronic book readers require specific file protocols. EPUB, MOBI and PDF are the most common file types, however the lack of an established universal protocol continues to plague the electronic book industry, often referred to as the “Tower of
eBabel.” Adopted in 2009, the *epub*, a free and open ebook file protocol was adopted as the international standard for publishers despite its incompatibility for many reading devices.

More recently, *enhanced eBooks* is quickly becoming the preferred electronic book. For example, Apple has designated a specific enhanced ebook section. While an *epub* could be referred to as a snapshot of a book, an enhanced ebook embeds interactivity, by placing sound and video features within the body of the text. Often called rich media, hybrid or amplified books, enhanced ebooks operate within an ebook reader program just as other standard ebook files.

Additionally, the book-as-application (book app) has crossed into another evolution of the electronic book. The book app has incorporated all aspects of the enhanced ebook but transitions into a non-linear presentation. Users enter the book through different paths, emphasizing the flexibility of the book. Capable of handling photographs, video, and sound together with access to the device’s built in features, book apps provide an immersive experience. However, book apps are much more difficult to produce requiring programming knowledge in a variety of computer languages.
WHAT IS A BOOK?

This research began by questioning binding methods, historic bibliography, material texts such as papyrus rolls and Sumerian clay tablets in an effort to uncover a commonality between book structures. However, this did not lead to the emergence of an initial book form nor to a climactic moment pointing to the definitive essences of a book. However, these questions did lead to a paradoxically basic and complicated question: What is a book?

From the physical and material transformations present in its earliest forms, to more contemporary shifts between html and epub formats, these distinctions, while interesting, do not provide an all-inclusive definition the book. Likewise, making the distinction between the text and the physical book leads more to a binary logic, (book or not book) difficult to untangle. However, the research demanded a clear definition of the book to understand the future of the books iconic relevance in digital translation.

Considering the book as an icon, full of semiotic and religious implications, the book becomes a signified object. Separated from its materiality and its textual components, this object is used in many unconventional ways. Throughout the research, it became clear that these non-textual conditions inform a common vocabulary for the book. When researching the structure along with the text became unhelpful in defining the book, focus shifted to these unconventional, non-textual uses.

To uncover alternative uses of the book, the research led to a deliberate study of the history of the book and a conceptual study of psychology and semiotic surrounding
the culture of the book. Books began to be considered as tools used to transmit ideas, memories and power, produced and distributed, even smuggled, by a particular society together with how and who was reading them.

Investigating the fringes of the defining characteristic of the book from a non-textual perspective expanded the concept of the book to encompass more than the makers at the beginning of a books life to include how the book is used along with how that use redefines the book.

Historically, the book has been considered to be an object of great awe, bestowing knowledge and representing the divine word. In early Christian manuscripts, the book is represented as distinctly human, used for common daily communication. (Watson 481). It was then that the scroll was elevated to a higher status by being used for holy doctrine. However, under Emperor Constantine, the book, specifically the codex, became a major instrument of Christianity that symbolizes the division between Christianity and Judaism.

Throughout the middle ages, the making of Gospels and service books was regarded as an act of piety and was encouraged by the rulers and the aristocracy of Europe (Ibid 482). In a time when the sword and the crown represented power and wealth, the book represented the sacred word. Royalty was often depicted exchanging books with the laity. This action of making or giving a book as a gift was a physical manifestation of friendship and solidarity.

Books have also been used to cure the sick or to ward off evil. The act of wearing, carrying or kissing a book has been attributed pseudo-talisman powers as early as the tenth century. Mostly religious texts, often said to have been owned by a saint, could
imbue grant the book object with special powers. This tradition can be linked to girdle books worn by nobles as a fashion accessory in the sixteenth Century. Whether by absorbing the owner’s attributes or through some spiritual action, the book object would have been seen as a relic, with all of the associated history.

Swearing an oath on a book is a practice used in many cultures. Signifying respect and allegiance, laying hands on a book during an official occasion binds the person in a contract. For example, most public officials, including the President of the United States, swear on a copy of the Bible, placing the hand on the book is seen as arrangement between two parties.
THIS IS A BOOK. THIS IS NOT A BOOK.

This research focused not on defining what is or is not a book but on paradigm shift in how the definition of a book is determined. The book structure has seen very few true evolutions. From clay tablet to papyrus scroll, from scroll to codex and from codex to electronic book, history has shown long periods where the book can be defined objectively. This is a book and this is not a book.

However, for brief periods, the book exists in a state of transition. This transitional state allows for a more traditional book form to exist simultaneously within the new book structures. Therefore, determining the definition of a book becomes subjective and open to interpretation: This is a book or this is not a book.

From objective to subjective, this research began by making comparisons between a traditional book and an electronic book as experienced on an iPad by breaking down a book into three concepts: physicality, textual and non-textual.

An investigation into the physicality of the book, while informative, did not result in a definitive feature outside of personal preference. The textual aspects of a book became the most flexible, exhibiting little distinction between the two mediums. Non-textual uses of the book did not yield a peculiarity but shed light on the multi-functional aspects of the personal device.

From this vantage point, the research question became clear. Considering whether or not a particular object is or is not a book was quite beside the point. Today, individuals arrive at his/her unique definition of the book from their distinct perspective.
METHODOLOGY

Method

The research involved a qualitative analysis of ebooks and ebook applications developed for distribution through the Apple iTunes database for the iPad. The analysis was undertaken throughout the 2011 – 2012 academic year. Known authorities in literature, bookmaking, and electronic publishing were selected for their unique perspective.

Initially, each participant was asked a series of questions to determine their knowledge of electronic publications and their concept of a book as well as given a short introduction to the iPad. Participants were given a one-week period to interact and experience each of the pre-determined electronic books. After this period, each participant was asked the same set of questions to determine how this experience has impacted their concept of the book.

Books were selected based on their format and their ranking in the iTunes Bookstore. Narrowing the selection process to three books one to represent each distinct category of electronic publishing, each book was selected by determining its perceivability, operability, understandability, and robustness (POUR) based on WCAG 2.0 Accessibility Guidelines (W3C 2008). Although they were initially developed for web applications, WCAG guidelines have been applied to evaluate the reader’s experience on mobile devices. (Billi 2010)

Perceivability refers to the onscreen interface and its appeal to the user’s senses. For this study, perceivability was be measured by asking questions that concern the
visual, auditory and multi-gestural aspects of each book and application such as: Does the electronic book have elements that appeal to multiple senses?

Operability refers to the functionality of the interface, how it operates and what constitutes a successful navigation. With different levels of engagement, each book offered a different navigation method. Operability was measured by asking questions such as: Was the book experience hindered or enhanced by the navigation?

Understandability concerns the comprehension of content as to being more or less readable and therefore understandable. Both textual and semiotic principles were taken into account. Understandability was measured by asking questions such as: Is the information and content within the ebook easy to read and therefore understand? How does the readability change between the different formats?

Robustness is understood as, “the content must be robust enough so that it can be interpreted reliably by a wide variety of user agents, including assistive technologies (WCAG 2.0). Robustness was measured by assessing the applications flexibility toward different user skill levels through a series of questions such as: Can the content of the book be adapted to match the users skill level?

The three books were non-fiction and selected to represent three distinct divisions in today’s electronic book field, epub, enhanced ebook, and book-as-application, giving a range of book experiences possible on a single device.

Steve Jobs by Walter Isaacson was selected to represent standard epub. Published by Annenberg Press, Outlaw Blues, written by Jonathan Toplin, noted for its inclusion of documentary video, sound and text, was selected to represent an enhanced eBook. Push
Pop Press’, *Our Choice* written by former Vice-President Al Gore is a prime example of the electronic book as application offering experiences through interactive maps, video and sound along side of the understood chapter distinctions, pages and index.

**Findings**

**Perceivability**

We use five senses (sight, sound, touch, taste and smell) to “perceive” the world. While in a computer-generated environment, we can only engage three of these senses; although it can be argued that the senses smell and taste can be appealed to through a series of signified images (for example, when we see a hamburger on the screen, we are much more likely to imagine how it tastes and smells). We most often engage with an interface through a combination of senses, using touch to interact, sight to see information and sound to listen and/or speak, creating a dynamic environment connected to a variety of cognitive process such as memory, imagination, and thought.

Participants found the selected books to be progressively more interactive. In particular, the book-as-application was engaging multiple senses. Some inconsistencies were noted but as a whole *Our Choice* was considered the most appealing. Curiously, as more senses were engaged, a general sense of ‘bookness’ was noted.

**Operability**

The iPad is a multimodal device. Though it relies on visuals to transmit content, the iPad interface requires touch, hearing and vision. Combined with a library of multi-touch gestures, accelerometers and GPS options, the iPad represents the most advanced
tablet computer to date. Gestures, ranging from swipe up and down, left to right, tap once, tap with three fingers, etc., overlay a different level of functionality requiring some additional experimentation by the user.

The iPad’s operability standards have been an area of concern for some time due to inconsistency in application design. While is making strides to address those concerns, navigation systems vary wildly from one to another. The navigation in both *Steve Jobs* and *Outlaw Blues* were of interest for the connection to traditional codex book forms.

*Understandability*

Participants were all highly educated with significant experience at deriving meaning. As such understandability was measured by the location of accessibility icons, from changing font size to zoom features.

The iPad relies on computer conventions that link icons and images to text and actions creating an additional layer of customization for each participant. However, with little instruction, some of the embedded media options were not as accessible. *Our Choice* was noted for the automatic play features as well as continued play.

*Robustness*

The participants had varied comfort levels while working with the electronic book technology. After a small instructional session, participants had not particular problem interacting with each book. However, when pressed to find adjustments and encouraged to experiment with the navigation, it was acknowledged that customization options, such as brightness and contrast, were difficult to find.
**Visual Response**

As the research advanced, my focus shifted from attempting to situate the electronic book as the latest evolution of the book structure to understanding how the definition of the book is understood. Early visual experiments were concerned with the history of how the book evolved from one structure to another, while later experiments were informed by the diverse and personal insights provided by each participants.

While each participant experienced an epub and an enhanced ebook, interest was clear from respondents early into the research toward the idea of the book as an application (book app). Most regarded the epub experience as a mimetic copy of a book and became curious about its function. It seemed the epub and the enhanced ebook reinforced a binary logic, while the book app was considered similar but a distinctly different experience.

This curious situation directed the research toward creating book experiences that question how one arrives at a particular book definition. Initially, using one of the basic principal of graphic design, connotation and denotation, I created *Loop*, as an interactive Adobe PDF document, as a way to explore interactivity on a standardized book platform while exploring the process of hermeneutical understanding. Using a concept developed by Martin Heidegger in *The Origin of the Work of Art* (Heidegger 2008), *Loop* refers to the concept of the hermeneutic circle, where a notion of the whole of reality is envisioned by the detailed experiences of the individual. *Loop* explores the notion of interactivity in a hybridized experience, situated between book and website.
An apparent connection between the non-textual uses of a book and tablet computer became clear as the research progress toward a binary definition of the book structure. *iSwear*, an iPad application, was created to investigate how the ritual of swearing an oath on a book as opposed to the personal device. This common non-textual use of a book when translated into a digital environment elicited strong reactions, questioning the book's relationship to spirituality, civic responsibility among other issues. Initially, I created *iSwear* to imply that non-textual uses of the book could not be digitally translated. However, after reflecting on the wide variety of responses, the research suggested a similarity between these non-textual uses and multiple functions of the personal device.

Observing how perspective determines one’s relationship with the book, a final project was created by casting the net wider than my selected book authorities, in an effort to symbolize how subjectivity impacted the definition of the book. I later created *Thisisabook. Thisisnotabook.*, as a public project promoted on the social media website, Facebook™. Users were asked to download pre-designed graphics stating, ‘This is a book.’ or ‘This is not a book.’ depending on their particular perspective. Once downloaded, they were asked to post a photograph of themselves with this graphic to the Facebook™ page.

The project grew rapidly with posts from a varied crowd. From librarians to architects, children to professionals, each post reaffirmed the notion that the definition of a book is no longer an objective truth but a subjective experience.
CONCLUSION

This research has found a paradigm shift in defining the book from an objective perspective to a subjective perception. Traditional books, electronic books and the book as stand-alone applications exist simultaneously in a time of transition from the analog to the digital. The relationship between traditional and electronic books is an example of this transition. The circumstances where the notion that the book can be defined as a mutable medium, taking various forms and bridging many classes and cultures has been constant throughout history. Rather than grasping at the future or clinging to the past, the book structure is a resilient abstract, not a singular form.

The book will always have the ability to maintain its iconic status despite translation from one format to another. We no longer live in a binary world the book exemplifies this dynamic. From clay tablet to tablet computer, we have always felt the need to document, to illustrate and to tell a story. A book form, no matter what configuration, will always be the container for our communication.
REFERENCES


applications.


APPENDIX A: LOOP

*Loop* is an interactive Adobe PDF inspired by the concept of the hermeneutic circle, where a notion of the whole of reality is envisioned by the detailed experiences of the individual. *Loop* explores the notion of interactivity in a hybridized experience, situated between book and website.
iSwear is an iPad application inspired by the traditional, non-textual use of the book as an accessory to swearing an oath. When touched, an audio recording is initiated allowing the participant to record their oath. The recording continues until the hand is removed. The user is prompted to review, save or post their oath to their Facebook™ account.
APPENDIX C: THIS IS A BOOK. THIS IS NOT A BOOK.

_Thisisabook. Thisisnotabook._ began as a public project promoted on the social media website, Facebook™. User were asked to download pre-designed graphics stating, ‘This is a book.’ or ‘This is not a book.’, depending on their particular perspective. Once downloaded, they were asked to post a photograph of themselves to the Facebook™ page.

_This is a book. This is not a book._ also refers to the paradox proposed by the electronic book. As a homage to Magritte’s _Ceci n’est pas une pipe_, this project considered the physicality of the electronic book when viewed on a personal device.
APPENDIX D: BIOGRAPHIES

_Brian Richards, publisher, Bloody Twin Press_

Bloody Twin Press began in 1984 as a means for Brian Richards to develop a venue for writers and artists who had trouble placing work with more established presses. Becoming fascinated by book arts, Richards sees the press as an artists’ and poets’ vehicle. Having a distinctly poetic and tactile perspective, Richards has clearly defined notions of what a book is and is not.

_Tom Bridwell, publisher, Salt Works Press_


_Paul Benedict, Senior Vice President, EdMap_

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