I would prefer not to turn the page: Reading and Writing in the Unlimited Digital Space

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ABSTRACT

The limits of the page have been historically set by the constrictions of the materials on which the text is inscribed. In the digital age, those materials no longer impose a physical limit, and the limits are more bound to what are our established reading practices and conventions. We still need to access the text in finite portions — we cannot process the infinitude of text that the limitless digital space would allow. Hence, notions as *window* or *frame* appear to make this infinite space readable — not unlike the ancient practice of reading and writing on a *scroll*, which contained large texts, but could only be read portion by portion. Nowadays, we no longer simply turn a page and leave it behind; in our perception, it is more like a frame is constantly being repositioned. In order to question this transition and its implications, we will be looking at a paper and a digital edition of *Bartleby, the Scrivener* by Herman Melville.

KEYWORDS

reading surfaces; graphical conventions; page; scroll; frame.

RESUMO

Os limites da página foram sendo historicamente marcados pelas restrições dos materiais em que o texto é inscrito. Na era digital, esses materiais deixaram de impor um limite físico, e os limites estão mais ligados às nossas práticas e convenções de leitura estabelecidas. No entanto, continuamos a ter que aceder ao texto em porções finitas — não conseguimos processar a infinitude textual que o espaço digital ilimitado permitiria. Assim sendo, surgem noções como as de *janela* ou *frame* (enquadramento), para tornar esse espaço ilimitado legível — à semelhança da prática antiga de ler e escrever em rolos (*scrolls*), que continham textos longos, mas eram lidos porção por porção. Hoje em dia, já não viramos simplesmente uma página deixando-a para trás; a nossa perceção é a de um constante reposicionar do enquadramento. Para questionar esta transição e as suas implicações, observaremos uma edição digital e outra em papel de *Bartleby, the Scrivener* por Herman Melville.

PALAVRAS-CHAVE

superfícies de leitura; convenções gráficas; página; *scroll; frame*.

MATLIT 6.1 (2018): 135-148. ISSN 2182-8830
DOI: 10.14195/2182-8830_6-1_9

I. INTRODUCTION

For better understanding its context, it should be noted that this paper describes a particular point of a PhD research that aims to prove that — and shows the circumstances under which — the book is not only an object, but also a set of instructions for the use of that object. The thesis is called *Instructions for reading*, and looks into how the text itself, through the way it is visually presented to us, shows us how to read it.

These instructions rely upon the summoning of many centuries-old conventions. For instance, we know that Latin script is to be read from left to right, from top to bottom, while we also know that there are other ways of reading and writing, and that different cultures practice, or practiced, different directions:

> The direction in which the eyes were supposed to follow these reels of letters varied from place to place and from age to age; the way we read a text today in the Western world — from left to right and from top to bottom — is by no means universal. Some scripts were read from right to left (Hebrew and Arabic), others in columns, from top to bottom (Chinese and Japanese); a few were read in pairs of vertical columns (Mayan); some had alternate lines read in opposite directions, back and forth — a method called *boustrophedon*, 'as an ox turns to plough', in ancient Greek. Yet others meandered across the page like a game of Snakes and Ladders, the direction being signaled by lines or dots (Aztec). (Manguel 1996: 48)[1]

More recently, when we consider the long history of the book, carefully edited volumes have told us we could skip certain parts to find the information we need through the use of indexes, page numbers, and chapter headers. These auxiliary elements, for which Gérard Genette coined the term *paratext*, in its book *Seuils*, an exhaustive study of the editorial function of these texts surrounding the text, placed at the thresholds around the texts, between the text and its readers. These paratexts express the need for navigating a book and being able to refer to certain parts of it, both for the solitary reader or for shared reference within a reading community. They weren't present from the start; they were slowly introduced along as writing media progressed, and they are the visible face of the evolution of the book as both a score and a stage for the performance of reading. For instance, the above mentioned integration of paratext such as

1 The author points to Albertine Gaur's *A history of writing* (1984).

indexes, page numbers and headers are an answer to the needs of a less and less religious reading practice. In Johanna Drucker's description:

> In earlier usage, books were the basis for linear, silent reading of sacred texts, punctuated by periods of contemplative prayer. These habits gave way to the study and creation of argument as the influence of Aristotle on medieval thought brought about increased attention to rhetoric and the structure of knowledge. Readers began to see the necessity to create metatextual structures for purposes of analysis. To facilitate the creation of arguments, heads and subheads appeared to mark the divisions of a text. (Drucker 2009: 171)

This newly developed paratextual apparatus broke down the text into rhetorical elements that could now be analyzed and discussed. It is important to note and stress that these were not just visual add-ons to the text. The point is that graphic elements are created as a reaction to the newfound reading practices and needs. In an elliptical way, those graphic elements enable new reading practices to emerge and ultimately become standard, rendering those elements so familiar they become invisible to the non-analytical eye.

"[T]he idea of the book as a performative space for the production of reading" (169) is Drucker's. It is referred in the mentioned essay, and in many other of her writings and public talks around that subject. My contribution is to direct the spotlight to the visual instantiation of these graphic elements and analyze the concrete working of these instructions, looking at three editions of the same text: *Bartleby,* by Herman Melville. In this paper, for a hands-on analysis of some of these features that relate specifically to the page, I will be looking at two of these different editions. A paper edition, profusely commented, rich in helpful paratext, and comfortably typeset, edited by German publisher Reclam (2013) as part of its wide-spread Universal-Bibliothek collection, which is a useful starting point in the paper tradition. And also the Gutenberg Project page for this short novel (2004), which provides us with the most common ways to read this text online — HTML, MOBI, ePUB, among other formats. We will be reading specifically the HTML version, as shown in a computer browser. Looking at both objects will allow us to broadly compare the two sets of conventions: the analog and the digital. This comparison can be the stepping stone to more profoundly question the ways in which a text is presented on a page in the digital era, its boundaries and conventions, its possibilities and limitations.

Figure 1. The cover of *Bartleby*, in Reclam's edition.


"With submission, sir," said he, "yesterday I was thinking about Bartleby here, and I think that if he would but prefer to take a quart of good ale every day, it would do much towards mending him, and enabling him to assist in examining his papers."

"So you have got the word, too," said I, slightly excited.

"With submission, what word, sir?" asked Turkey, respectfully crowding himself into the contracted space behind the screen, and by so doing, making me jostle the scrivener. "What word, sir?"

"I would prefer to be left alone here," said Bartleby, as if offended at being mobbed in his privacy.

"*That's* the word, Turkey," said I – "*that's* it."

"Oh, *prefer*? oh yes – queer word. I never use it myself. But, sir, as I was saying, if he would but prefer –"

"Turkey," interrupted I, "you will please withdraw."

"Oh certainly, sir, if you prefer that I should."

As he opened the folding-door to retire, Nippers at his desk caught a glimpse of me, and asked whether I would prefer to have a certain paper copied on blue paper or white. He did not in the least roguishly accent the word "prefer." It was plain that it involuntarily rolled from his tongue. I thought to myself, surely I must get rid of a demented man, who already has in some degree turned the tongues, if not the heads of myself and clerks. But I thought it prudent not to break the dismission at once.

The next day I noticed that Bartleby did nothing but

10 **to jostle s.o.:** jdn. anstoßen, mit jdm. zusammenstoßen.
13 **to mob s.o.:** jdn. anpöbeln.
22 **roguishly** (adv.): schelmisch, arglistig.
25 **demented:** wahnsinnig.
27 **to break the dismission:** die Entlassung mitteilen.

stand at his window in his dead-wall revery. Upon asking him why he did not write, he said that he had decided upon doing no more writing.

"Why, how now? what next?" exclaimed I, "do no more writing?"

"No more."

"And what is the reason?"

"Do you not see the reason for yourself?" he indifferently replied.

I looked steadfastly at him, and perceived that his eyes looked dull and glazed. Instantly it occurred to me, that his unexampled diligence in copying by his dim window for the first few weeks of his stay with me might have temporarily impaired his vision.

I was touched. I said something in condolence with him. I hinted that of course he did wisely in abstaining from writing for a while; and urged him to embrace that opportunity of taking wholesome exercise in the open air. This, however, he did not do. A few days after this, my other clerks being absent, and being in a great hurry to dispatch certain letters by the mail, I thought that, having nothing else earthly to do, Bartleby would surely be less inflexible than usual, and carry these letters to the post-office. But he blankly declined. So, much to my inconvenience, I went myself.

Still added days went by. Whether Bartleby's eyes improved or not, I could not say. To all appearance, I

11 **glazed:** glasig.
12 **unexampled:** beispiellos.
14 **to impair:** beeinträchtigen, schwächen.
15 **in condolence with:** hier: voller Anteilnahme für.
16 **to abstain from:** sich enthalten
17 **to embrace:** hier: ergreifen.

Figure 2. A double page (or spread) of the same edition.

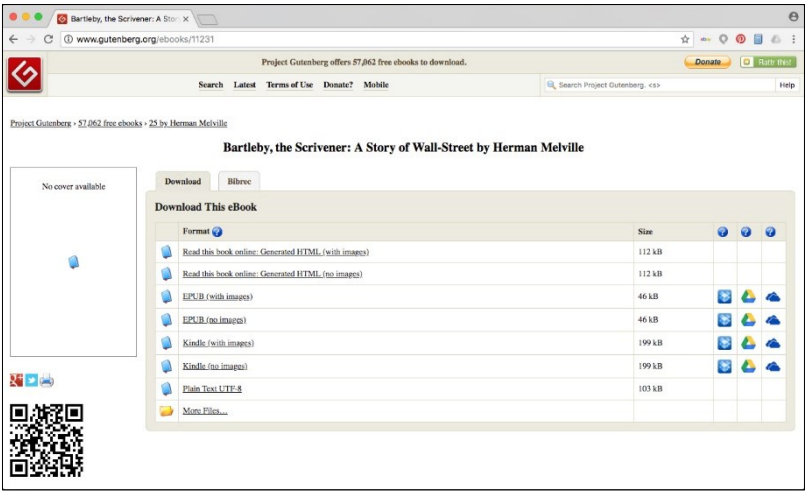

Figure 3. Project Gutenberg's starting web page for *Bartleby* (a possible equivalent for its cover).

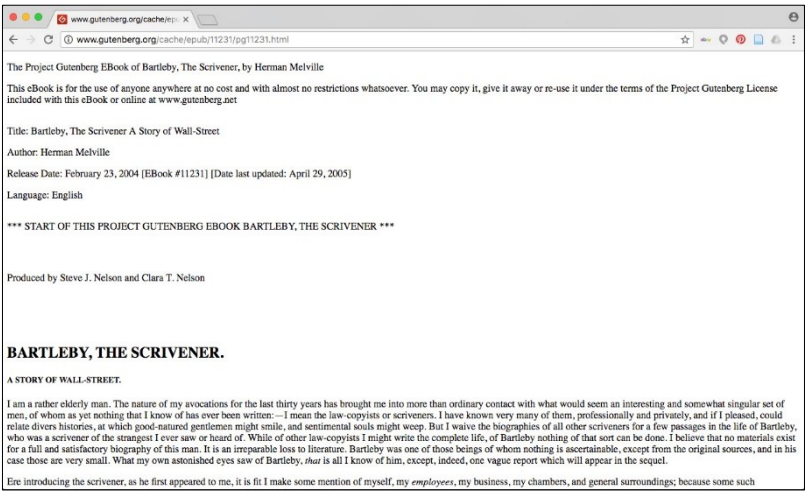

Figure 4. The beginning of the HTML page for *Bartleby* (framed, but poorly legible, as I will discuss later).

II. SCROLLING

Needless to say, the digital medium had the chance — properly seized — to question many of the established conventions for reading. In doing so, it was able to reenact certain modes of reading and writing that were buried in the past, such as the linear mode of use of the scroll. By scroll, I am intentionally summoning both the manuscript inscribed upon a long sheet of papyrus or parchment,

stored in a roll, and the digital icon, typically located on the right of an HTML page, that lets us navigate through its content. It is interesting to observe how, facing a seemingly infinite array of possibilities, in many ways the digital medium chose to restore ancient practices, clearly showing its knowledge of, and affiliation with, traditional modes of reading and writing.[2]

What we call the *scroll*, in digital media, is a virtual handle, a drawn icon that enables us to frame a text that is typeset continuously. When we click it, the text that is 'hidden' underneath the bottom comes up, making the equivalent amount of text to become 'hidden' on the top — or the other way around. The digital icon's design is dependent on the software we are using to read the HTML page. That is the case with this document, and with most documents, although the designer or author of the HTML page has the possibility to customize the scroll icon and its behavior, but that is not the case in this page, which is intentionally simple. Although the act of scrolling is without a doubt inspired by the ancient scrolls, and granted its intuitive mode of use, the behavior of this digital icon has no direct precedent. Rather, it responds directly to the functioning of the digital medium, making use of its new possibilities and drawing from the design of its GUI — graphical user interfaces, which rely on the use of 'buttons' as visual handles for generating coded orders for the computer to follow.

Another way to activate the scroll is to use the scroll bar: within a slim ribbon of usually gray pixels, we can see a rectangular or oval-shaped token for the place where we stand within the text. Moving it up or down will do the same to the text — itself, it will move down or up, in the opposite direction, showing and hiding another portion of the text — bringing the token up will make the text go down, hence bringing our view to the upper portion of it. Some software, like Google Chrome, only function with this scroll bar and do not offer the scroll icon. That is the case in pictures 4 and 5 (taken using Google Chrome on an OS X operating system), where even the scrollbar is hidden, until we move the mouse to navigate the text. They mainly rely on the use of the trackpad or the scrolling wheel of the mouse for the act of scrolling, so they have erased completely the scroll handle in the shape of an arrow that is present on other browsers, on the top or bottom of the scrollbar (and this may hint at the possible disappearance of the scroll icon in the future).

The relation between 'going up' and 'going down,' in the scroll bar and the text, is also dependent on the software used, and even on user preferences. In Mac OS, the option "Scroll direction — natural" makes the "content track finger movement." This option refers to the functioning of the trackpad, and affects our experience of every software that is accessed through that hardware piece. That means that the movement of the fingers is as if they were somehow glued to the virtual 'paper,' and moving the fingers down will reveal the content above,

2 It is important also to bear in mind that engineers of interface design have taken the printed book as a model of ergonomic and cognitive usability when designing the multipurpose personal computer. The prototype of the *Dynabook* (1968), by Alan Kay, is a telling example of how properties of the book were taken as a model both for the electronic device and for its graphical user interface (Cf. Alan Kay and Adele Goldberg, 1977).

as if we were pushing down the paper in order to see what is on top. This is the reverse of the usual mechanism of the scroll, where we move the handle down to see the content that is on the bottom (the text itself goes up, but our view comes to the bottom). Either way, the scroll bar is still something of a visual summary of the text itself: wherever we are in the scrollbar, on top or bottom, is wherever we are on the text.

Note that the expression makes the reader the central point: we say that 'we are at' a point of the text. We could argue that in fact the text is at this point, but that is actually less meaningful, since it is the reader, while reading, that activates the text. The idea that we are at a point of the text actually highlights the reader as an agent of reading and the text as a space for the performance of said reading.

Using another common expression, we could state that 'we are on page 12.' Identically, the text printed on a page is only accessible and visible at our command. We position ourselves towards the text, and the text towards ourselves in a similar way. This time, for a visual cue, we have two main parameters: a very tactile one — feeling how many pages we have on our left and right hands; and a graphic element designed for navigating — the page number (also called *folio*, under certain circumstances)[3]. The page number is of special relevance, because it is an objective way to determine and reference the position of a certain part of the text, and it allows the existence of a table of contents or various indexes. This reference in its turn allows for later reference of the same reader, for the sharing of references between reading communities, and thus consolidates the use of text as a way of sharing knowledge (as we, researchers and readers/writers of scientific papers, can easily attest).

3 In the Portuguese language, the word *folio* would only be used to describe the page number when it is the number attributed to a sheet, when it indicates the number of the *folio* (= sheet) of a manuscript, or, less usually, to refer to the numbering of commercial books, usually placed on the top left corner of the page (Faria *et al.*, 2008: 563).

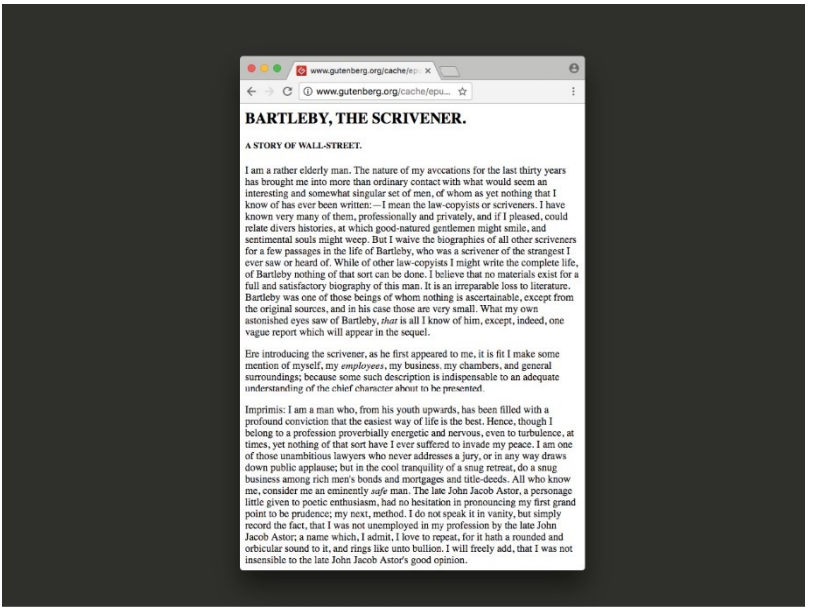

Figure 5. The beginning of the HTML page for *Bartleby* (now re-framed, with a word-per-line count that would be similar to a printed page).

III. FRAMING

At this moment, we have seen different ways to navigate a text, in terms of knowing where we stand in it, in both analog and digital contexts. We also briefly addressed the way a text is framed in both editions, but we can go deeper within that point, as it is one of the main differences between them, as I aim to illustrate. One of the main differences between the printed and the digital versions of the same text is the elasticity of the portion of the text that is visible to us at a certain point of reading. In the digital edition, that portion is limited at the instance of reading, and is restrained by both the limits of the interface and the will of the user. The user — the performer of the reading act — also has a set of limits as to what she can read, even if she is free to disregard them. The printed page, however, is designed by someone ahead of the reader, also observing the physical limits of the interface — the paper, in this case. Its layout is constructed in order to enhance the legibility of each portion of text (most of the times, at least; and evidently so in the case of this book). While the digital has an indefinite number of words and lines per unit, in the printed page they have been fixed beforehand, by a set of professionals and machines at their command. In order to have two comparable units of text, we mustn't compare the whole HTML page, which conceptually would contain the totality of the text, but a particular instantiation of the text, at a certain precise moment, while it is being read. That way, the number of words per unit in the Project Gutenberg edition is personal

and volatile, and the number of words on page 11 (for instance) of the Reclam edition is 247, the number of lines in that page is 24 (both numbers disregarding the footnotes). The medium number of words per line is of 10.4, the minimum being 8 (on lines 2, 6 and 23) and the maximum 13 (on lines 7 and 9). The line width is of 76 mm, and the height of the text block (footnotes included) is 123 mm. This exact analysis and calculations would be much less categorical for the digital edition — we would only be measuring a particular instance of the text, which would hardly ever be replicated in another instance of reading.

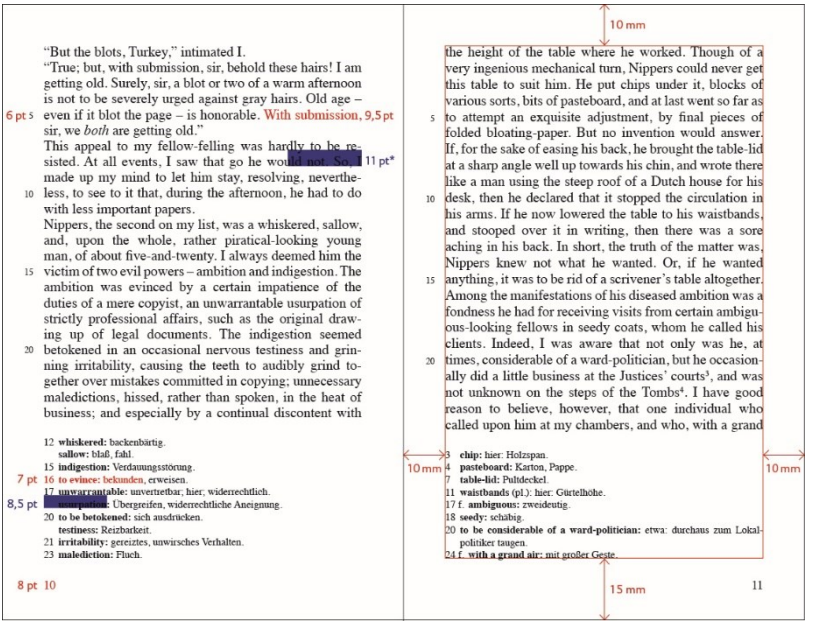

Figure 6. Pages 10 and 11 of *Bartleby*, in Reclam's edition, reproduced and measured.

In the same way, the relation between the text and the limits of the frame in which it is placed is perfectly measurable in the printed edition, as we can see in figure 6, on the right-hand page. The earlier described dimension of the text block is the result of a 10 mm margin on each side, and a 15 mm margin at the bottom, within a 147,5 x 96 mm page. We can also measure the size of each of its textual elements, in typographic points — as we do, on the left-hand page of the same figure. A similar measuring *could* be done regarding the HTML version of the same text. But again, we have to keep in mind that we are measuring a virtually irreproducible instantiation of the text. The measuring units would also have to be adapted — we would use pixels, which we could add that are equivalent to X mm, when viewed with the standard 72 dpi screen resolution, underlining its dependence on the interface, and its existence as an *event*.

However, the digital has not brought about this characteristic — it has only enabled us to see it retrospectively. When Katherine Hayles writes, in 2006, "The Time of Digital Poetry: from Object to Event," she is underlining a specific characteristic of digital poetry that we can, nonetheless, retrospectively attribute to the paper poetry book. In the printed book, as well, the poetry it contains is activated by reading, and has a singular value each time it is read. If in the digital poems described by Hayles this is self-evident and factual, in the paper book it is equally valid from a theoretical point of view. In other words, after reading digital poems that instantiate themselves in the act of reading, we can go back only to find the same characteristics in the codex.

IV.OTHER WORKS AND CONCEPTS

For this study, it was a deliberate act to choose such mundane objects of study — these are works that allow us to observe the rule rather than the exception. Naturally, there are other works that more expressively defy these conventions for reading. Works like "...and by islands, I mean paragraphs" by J. R. Carpenter (2013) help us imagine a world of possibilities for text inscribing, in which a text is read like a map, knowing little boundaries. This work, in particular, questions the sequentiality of textual units. I am using this expression to describe either paragraphs or pages, or any other necessarily limited amount of text as it is presented to us. In this work, there are no pages, as you can find in codices, following one another, nor can you find here the common sequential mode of reading of a web page, where text units still follow each other, be it in the same plane, either vertically or horizontally, be it using hyperlinks to install a series of text units that are still in a defined sequence. Instead, the author borrows the mode of reading of the map, where there is no specific sequence or hierarchy to follow. We can move up and down, left and right, and read along as we encounter the text units / paragraphs / islands. Using a very simple technical resource — sizing the page both too wide and too long to fit inside the limits of the typical screen —, the author is able to deny a vertical or horizontal sequentiality. Its multiple text versions for each paragraph further explores the possibilities proposed by the medium, and completely implodes the notion of page as a finite unit of text, following and followed by other similar units.

Another work, Scott McCloud's "The right number" (2003), shows us the possibility of reframing and zooming in as a way of going deeper into a text. In this case, the linearity is perfectly preserved — arguably, because it is so deeply engrained within the comic books context. Being an image-based narrative, it moves along a story, showing us characters and their actions following one another. It is, in a sense, a very cinematic mode of reading, and the sequentiality makes it 'work.' In this case, what the author questions is the way in which we navigate from one text/image unit to another. We still have a strict and defined path, but we don't exit one page to enter another, we see the next page as a small

thumbnail in the center of the current page. As we click in the screen, or press an arrow, that thumbnail grows bigger, giving us the impression of entering that new page, and another small thumbnail appears on the same place. Although the graphic novel is still composed of pages in sequence, the impression is that we are zooming in from one to the next one, going further in the narrative. This is just one of the many possibilities that are installed by the author's notion of "infinite canvas" (2009), which is helpful in this quest for new ways of presenting and reading a text. Thinking about the way cartoonists use the pictorial space to tell a story, McCloud underlined that, in fact, there is no need to be bound to a finite page when that story is being told in the digital medium. This novel is one possible example of that, making use of these possibilities provided by the digital, and exploring new ways of navigating through a text.

Other important points were made in digital media theory that explore and expand our conception of *page* as a container of text. I'm referring to concepts such as Janet H. Murray's "spatial affordance" (2011): the unique characteristic that enables digital media to be navigated upon. This is a way to organize and display the vast amounts of information that the digital media allow. It is based upon "the innate human propensity to make sense of the world through spatial metaphors: we are predisposed to spatialize our experience, turning the appearance of text on our screen into the experience of 'visiting' web sites." (Murray, 2011). This is not unlike the previously mentioned metaphor of being 'at page 10,' in the sense that this expression is also a spatial metaphor. But the sense is completely different — we can only be precisely at page 10 or 100, whereas we can navigate through a web page without being limited to fixed and previously marked points. It is as if we can navigate freely in the (digital) boundless ocean, as opposed to getting on a (analog) train that moves in one direction and stops at pre-established stations. J. R. Carpenter's work "... and by islands, I mean paragraphs" is a good example of taking this possibility further. Our example of the HTML page for Project Gutenberg's *Bartleby* is less eloquent in making this distinction, in the sense that it also has one single direction, but still, we get the idea of moving freely throughout the text, which is not divided into units that we have to skip and leave behind in order to go forward.

Johanna Drucker, in "Frame jumps and mixed modalities" (2013), highlights our ability to shift perspectives and modes of view in order to embrace the different media that are presented to us simultaneously in a digital page. This time, the author is incorporating the various media types possibly contained in the same digital page. Text, image, video, sound, all share the same reading space, but require naturally different reading practices. In this case, the notion of page as a unit of content is challenged by this multimodality; this variety of media demands to be adequately framed — materially and mentally —, for us to be able to read them correctly.

These are only a few among many other digital theoreticians and practitioners. All of them help us reexamine the way text is presented and read in what is still a medium full of possibilities. Through their practice, many digital artists

and writers have come to make us realize the possibilities that the medium brings forth, expanding our concept of page.

V.FRAMING

It was evidently not by chance that we called each new presentation of content on the World Wide Web a 'page.' These pages no longer seem to be limited by the physical conditions of their medium,[4] but they still have a sensible limit. That limit is evidently correlated to the interface where we are reading. But, more profoundly, it is bound to the human ability to read and process text. The dimension and format in which the text arrives at our hands, eyes and minds is now even more evidently bound to what are our many centuries-old reading practices and protocols, than to the limits imposed by the physical medium it is inscribed upon.

Taking for instance the number of words per line in a text. The Reclam edition of *Bartleby*, as mentioned before, has a medium of 10.4 words per line In characters, including spaces, the medium is of 54. Robert Bringhurst, a typographer who wrote a concise and prescriptive manual for the crafting of books with optimal legibility, notes that 45 to 75 characters per line would be a good number, the ideal being 66, including spaces (Bringhurst, 1992: 26). Disregarding these prescriptions, in its coded materiality the HTML page for Project Gutenberg's *Bartleby* is written without any breaks. When we open it, it automatically displays its text to the total width of the screen we are using — the limits of the interface. While it is fully presented to us, plain to see, black letters on white screen, it is in fact poorly legible. There is a reason for the established good practice of 66 characters per line. Much more than that makes the distance between the end of a line and the beginning of the next one too large to be travelled at a glance, allowing for the eye to lose track of where it was. The result is a reader that, after ending the line he was reading, erroneously reads the beginning of another line, realizes he already read that one, then tries another, only to find that there would be no logical sense in that sequence of words, until he finds the right next line. We indeed *can* have an infinite line width. We could compose *War and Peace* using a few lines per chapter. But would we want to read it that way?

Curiously enough, the first thing we did facing the infinite possibility of presenting texts was to go back to the continuous scroll, now laid out vertically and managed with the aid of a virtual scroll handle, as previously mentioned. But soon did we realize that with digital technologies not only we could shift between the continuous and sequential modes of reading, related to either the scroll or the *codex*, but we could explore new viable possibilities. The notions of 'window' and 'frame' appear as alternate ways to organize and present content.

4 I use the expression 'seem to be' because in fact it still is limited by the physical conditions of their medium. Nonetheless, the medium itself is especially good at providing different conditions for reading, and the feeling is that, using all its powers, the possibilities are limitless.

All spatial protocols are questioned, remediated and redefined on this new reading space. We are faced with new possibilities, like the endless line alluded to, and are actively challenged to ask ourselves what we want to do with it.

The point of this paper, already conveyed through the sequence of its figures, is exactly that the notion of page may be completely altered, but we still need to access discrete units of text at each time so that we can read. These limits are most likely now shaped through the graphical user interface and are not embedded in the material text itself. But anyway, we still cannot process the limitless, even though we like the idea of it being there.

This is why the notion of 'window' is especially vigorous in the digital format: because it is a frame through which we can perceive something that is beyond it and is enormously bigger than it. But the window brings it to the human scale, frames it, and makes its fruition more manageable. The window is a surrogate for the page, in the sense that it creates a plinth in which the text is placed. It excludes the exterior space when it shows the included text, and allows the reading to be performed within its territory.

The 'scroll' has a similar function. When an ancient scroll is stored, it is apparently whole and continuous, without any breaks. But the majority of these scrolls were still composed by text columns,[5] showing by historic use that these are a way to break down the text to digestible pieces. At each point of time, you are only accessing a piece at a time, rolling on one side and unrolling on the other side of the manuscript.

In both examples, the keyword is 'frame': in order to embrace the seemingly infinite space that a literary text occupies in the electronic world, we always have to frame it. Traditionally for the past centuries, the page has been this frame, as we can see in Reclam Universal-Bibliothek's *Bartleby*. Nowadays, new framing is being used, which is not to say that the traditional forms have been forgotten. Quite the opposite; we even reenacted previous modes of reading and writing, as the example of the scroll should help illustrate.

VI. CONCLUSION

But what does this mean, to let go of the notion of the traditional page? In practical, visual, concrete ways, what is lost and what is won in this process? Visually, the design may look quite similar in each instantiation, but the content of each page/frame is fluid, malleable, different from user to user and from screen to screen, as if the text was moving in a layer behind this frame that is moveable, changeable and independent from the text. Additionally, the self-referentiality of the text is modified. The ways of referring to certain parts of the text have been revisited, and our perception of where we stand towards a text has been

5 See, for an example, the parchment scroll containing the Ten Commandments, part of the Book of Deuteronomy, dated to between 30 BCE and I BCE (4QDeutn): one of the oldest written parchments in existence (Houston, 2016: 26).

reformulated. Perceptually, we no longer necessarily think in terms of before and after, of leaving behind and moving forward. We literally lost sight of this linearity. We no longer turn a page; we slide a frame. The limitlessness of the digital space is only an abstraction: we still can only perceive discrete units of text. But we no longer leave these discrete units of text behind when we read along a book. We don't turn a page, as we progress forward — we slide a frame in order to access more content in each instance. That said, we should acknowledge that this framing ability, of scrolling through text, is both ancient and new. It is, in fact, a good example of how the history of reading points us to the future of reading.

ACKNOWLEDGEMENT

This article is part of my PhD research in the Program in Materialities of Literature. Funded by the FCT — Foundation for Science and Technology (PhD Fellowship reference: PD/BD/105704/2014).

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