On reading in the Digital Age

ESTABLISHING THE PARADIGMS IN A HYPERBOLICAL DISCUSSION

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Introduction

The owl of Minerva spreads its wings only with the falling of the dusk.
G.W.F. Hegel

Gloomy scenarios abound in relation to current developments in digital reading. Maryanne Wolf fears that 'many of our children are in danger of becoming […] a society of decoders of information, whose false sense of knowing distracts them from a deeper development of their intellectual potential'[1]. French philosopher Alain Giffard has a similar concern: he anticipates developments that will result in a situation where digital natives[2] are not able to sustain classical reading[3]. One of the most suggested effects of the digital medium on our minds is a decreasing attention span and the loss of cognitive skills, preventing readers from following the narrative of a story[4].

However, reading as we know it today only dates back approximately two centuries, when the late eighteenth century represented a turning point in the history of reading in the West. An increasing variety of reading matter and the emergence of a mass readership created 'a fundamental shift in the nature of reading'[5]. As Steinberg summarises this 'sudden leap forward': 'new inventions lowered the cost of production, mass literacy created further demands, the national and international organisation of the trade widened the channels and eased the flow of books…'[6].

This switch, from men reading a small number of religious books, to men, women and children reading anything they could get their hands on, was not greeted with enthusiasm by everyone either. The 18th century philosopher John Locke feared that the information in books would be taken as knowledge, as truth, because of their immutable form[7]. The concerns expressed by the French philosopher Denis Diderot are similar to the modern 'information overload' theory: he worried that the continual growth in the number of books available, readers would not do much reading. They would only search for books that they believed to be new and would know less and less about what those books contain[8].

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1 Wolf, M., *Proust and the Squid* (Cambridge: Icon Books, 2007) p. 226.
2 Giffard defines "digital natives" as the Internet Generation, also identified by S. Bennet as "young people […] immersed in technology all their lives, imbuing them with sophisticated technical skills and learning preferences for which traditional education is unprepared" (in: Bennet, S. et. al, 'The "Digital Natives" Debate: A critical Review of the Evidence', in *British Journal of Educational Technology*, Vol. 39, No. 5 (2008), pp. 775-86, p. 775).
3 Giffard. A., 'Des Lectures Industrielles', in: *Pour en finir avec la mécroissance*, Stiegler, B. et. al., (Paris : Flammarion, 2009) p. 215.
4 Greenfield, S., quoted in: Weel, A. van der, *Changing our Textual Minds: Towards a Digital Order of Knowledge* (Manchester: Manchester University Press: forthcoming May 2011), chap. 5, p. 6.
5 Darnton, R., 'First Steps toward a History of Reading', in: *The Kiss of Lamourette* (New York: W.W. Norton & Co., 1990) p. 167 .
6 Steinberg, S.H., *500 Years of Printing* (New Castle: Oak Knoll, 2001) p. 136.
7 Murray, D.E., 'Changing Technologies, Changing Literacy Communities?', in: *Language Learning & Technology*, Vol. 4, No. 2 (September 2000), pp. 43-58, p. 47.
8 Ibidem

As contemporaries, it is nearly impossible to predict what impact certain developments will have, whether of a technical, sociological or cultural nature. We are only able to judge and value prophecies like Locke's and Diderot's today, looking back.

When it comes to current events in the field of digital reading, both voices of protest and praise are evident. As Niels Bakker remarks, researchers in the field of digital reading can be divided into conservatives, who worry about the decline in reading in print, and the progressives, who embrace digital developments[9]. Each significant development has its own advocates and adversaries, some more realistic than others.

Because we do not know what impact digital reading will have, it is difficult to rate these hypothesis at their true value. In this respect, it is interesting to reflect on a quote by the German philosopher Hegel: 'the owl of Minerva spreads its wings only with the falling of the dusk'[10], implying that we can only achieve an understanding of a historical condition as it passes by. At the moment, it is nearly impossible to separate the chaff from the wheat, i.e. to distinguish between gloomy speculations and reasonable predictions. We are in over our heads.

The above can be illustrated by considering acknowledged studies in the field of digital reading. These studies are valuable, but consist mainly of empirical research on the impact of digital reading or of an overview of existing literature. Their conclusions often reflect Hegel's quote: it is still too soon to state the outcome of current developments[11]. However, this does not imply that we should forget about speculation and passively undergo which changes occur. Since developments in the field of reading rapidly succeed one another, reflecting upon them might prevent a situation where changes have happened before we realise what the consequences of these developments might be.

The goal of this thesis is not to join in the ongoing discussion on the impact of digital reading. It is not my object to write yet another contribution to add to the numerous empirical or philosophical studies already written on this subject. The object of this thesis is not to *discuss* the impact of digital reading but to *establish the paradigms* for this discussion.

My aim is to validate contemporary theories on the impact of digital reading by placing them in a historical perspective. As regards the change in reading habits today, can similarities be found between present changes and the changes that occurred during the course of the history of reading? I am well aware that the evolution of reading habits is not

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9 Bakker, N., *Help, de woorden en zinnen ontglippen me*l, research conducted by order of Stichting Lezen, 2009

10 Original quote: "die Eule der Minerva beginnt erst mit der einbrechenden Dämmerung ihren Flug", in: Hegel, G.W.F., *Grundlinien der Philosophie des Rechts*, (Frankfurt am Main: Suhrkamp Verlag, 1970), p. 28

11 See for example: Bakker, N., *Help, de woorden en zinnen ontglippen me*l; Liu, Z., 'Reading Behavior in the Digital Environment', in: *Journal of Documentation*, Vol. 61, No. 6 (February 2005), pp. 700-12; Mangen, A., 'Hypertext Fiction Reading: Haptics and Immersion', in: *Journal of Research in Reading*, Vol. 31, No. 4 (2008), pp. 404-19; Hillesund, T., 'Digital Reading Spaces: How Expert Readers handle Books, the Web, and Electronic Paper', in: *First Monday*, Vol. 15, No. 4 (April 2010).

a straightforward process, nor is it of a unilinear nature[12]. Therefore, the solution will not lie in a simple comparison.

However, as illustrated above, it will be useful to discuss possible future developments. While bearing in mind our inability to predict the future, a productive discussion can be conducted by interpreting the present and looking at the past. As Roger Chartier says: 'the backwards glance is of little help in predicting what the future will bring. Because it is comparative, however, that backward glance can enable us to measure more accurately the changes that are revolutionizing our relations with written culture'[13]. Moreover, book historian Robert Darnton confirms that 'the past operates as an undercurrent in the present'.[14]

This thesis has been structured as follows. The first chapter reviews recent research in the field of digital reading, with the object of determining which paradigms need to be established. The literature reviewed has been selected because of its representation of the diversity of the subject. The conclusion to the first chapter presents five different aspects of digital reading; taken together, they represent the heterogeneity of the subject of digital reading. Chapter two considers these aspects from a historical perspective. The last chapter compares the findings of Chapter one to those of Chapter two and concludes by verifying which paradigms can be established. In order to maintain a clear overview, the order in which the five aspects are presented is maintained throughout this thesis.

A reflection on current developments from a historical perspective can demonstrate the extent to which the technological properties of the digital medium need to be taken into account in any discussion about the impact of the changing technologies we use for textual communication (both past and present) on reading behaviour.

This is not the first time that we are experiencing a change in our reading habits. Reading practices have evolved throughout the history of reading. As a result, it is inevitable that our current reading behaviour will undergo some changes. As mentioned above, present speculations on the causes and impact of these changes differ from positive and progressive to negative and conservative. By evaluating theories on digital reading, by separating the chaff from the wheat, this thesis will establish a clearer and more realistic framework for the present discussion.

Current literature on reading often distinguishes between many forms of reading. The essay by Terje Hillesund, in which he identifies more than four types and subtypes of reading[15], is a good illustration of this point. Although it is both interesting and useful to draw detailed distinctions between all of the different forms of reading, one might get lost in terminology

12 Darnton, R., 'First Steps Toward a History of Reading', p. 187.
13 Chartier, R., *Forms and Meanings* (Philadelphia: University of Pennsylvania Press, 1995), p. 5.
14 Darnton, R., 'First Steps Toward a History of Reading', p. 187.
15 Hillesund, T., 'Digital Reading Spaces: How Expert Readers handle Books, the Web, and Electronic Paper'.

and lose sight of the bigger picture. This thesis will therefore confine itself to discussing one type of reading, namely scholarly reading.

It is necessary here to clarify exactly what is meant by scholarly reading. In order to present a clear definition, the use of a certain amount of terminology is inevitable. Scholarly reading can be identified as a form of concentrated, sustained reflective reading or studying.

This thesis uses the definition of 'digital reading' provided by Giffard: the general practice of reading on the web[16]. Giffard emphasises the role played by the Internet: 'the web has created a solid textual environment on screen, thereby producing an enormous increase in on screen reading'[17]. According to Giffard, digital reading only became popular after the invention of the World Wide Web and can therefore only be analysed in combination with the Internet[18]. Moreover, the literature selected in Chapter one only focuses on literacy in Western societies. In order to present an accurate comparison, the historical perspective of Chapter two is limited to the history of reading in the West.

16 Giffard, A., *Des lectures industrielles*, p. 125
17 Idem, p. 145
18 Bleeker, E., *Reading in the Digital Age*, paper submitted for the course Concepts in Information Transmission, 2010

1 The Discussion of Digital Reading Today

An eternal fear: the fear that a new technological achievement could abolish or destroy something that we consider precious, fruitful, something that represents for us a value in itself, and a deeply spiritual one.
Umberto Eco, From Internet to Gutenberg

1.0 Introduction

The present discussion on digital reading is an agitated one and can be considered from a range of different perspectives. It is a discussion that interests scholars and researchers from various fields, journalists, publishers, historians, philosophers and educators. Their ideas are presented in scientific articles, blogs, columns, books, and dissertations. Some voice their concern about the future, others merely present their empirical findings or venture to make cautious predictions.

Most of the literature on digital reading dates from the past decade, since the phenomenon is inherent in modern digital reading devices and its impact have only presented themselves very recently. They share a particular uncertainty, as it will never be possible to identify properties of the digital medium and predict its future impact with complete confidence. When discussing digital reading, the comparison with reading in print is inevitable[19]. For this reason, the majority of literature on the subject examines how digital reading relates to reading in print.

Reading is a vast subject and can be considered from various perspectives, varying from biological, historical, psychological, physical to educational. The purpose of this chapter is to review some literature on digital reading. The five theories selected represent the diversity of the subject of digital reading (1.1.1. to 1.1.5.). This chapter will conclude with a presentation of several themes that emerge from the literature examined and represent the various aspects of reading (1.2). These themes will recur throughout this thesis.

1.1 The theories analysed

1.1.1 Maryanne Wolf

Maryanne Wolf is one of a number of scientists who are rather pessimistic about the influence of the digital medium on our reading brain. In the work *Proust and the Squid: the Story and Science of the Reading Brain*, she regards the history of reading from a biological point of view. In other words, she analyses the development of our (reading) brain from past to present, focusing chiefly on the way we learned to read as a species and the way we learn to read as a child.

[19] Van der Weel, A., *Changing our Textual Minds: Towards a Digital Order of Knowledge*, (Manchester: Manchester University Press, forthcoming May 2011), p. 10.

Relatively speaking, she does not have to go back very far in history. The earliest forms of writing that can be considered as forms of symbolic representation[20] date back just 10,000 years and are formed by inscriptions on clay tablets, characters engraved in bones and turtle shells, or knots tied in a specific manner. The Sumerian inscriptions and the Egyptian hieroglyphic system (which are approximately 5,000 years old) are identified as early breakthroughs in the intellectual development of our ancestors.[21]

The ability to read and understand a system of symbols required new neurological connections in the brains of our ancestors, which allowed them to link 'visual representations to linguistic and conceptual information'[22]. Over time, the early writing systems developed by adding more and more complexities, which in turn resulted in a more complex brain activity. According to Wolf, this is one of the first major adaptations of the reading brain[23].

Early ancient Greece still had an important oral tradition. The ancient Greeks were able to memorise huge amounts of material, ranging from philosophical lectures to epic poems. Despite a mainly oral culture, the Greeks are said to have 'invented' the alphabet that lies at the basis of most Indo-European alphabets and systems[24].

This invention, which Wolf refers to as the second linguistic breakthrough[25], was not greeted with overall enthusiasm (see 2.1.). Some feared that the switch from an oral tradition to a written one would prevent students from examining concepts through dialogue. This renowned method, often used by philosophers, drew on the flexibility of the spoken word and was said to be ineffective due to the 'inflexible muteness of written words'[26], which lacked any dynamic property. However, Wolf argues that these protesters were not capable of recognising the benefits of reading and writing, since this technology was still too young to demonstrate its benefits. They did not realise that a writer is able to reflect on the words he has written, which allows him to apply a similar dialectical process.

When a small child becomes acquainted with language, he rapidly absorbs the historical breakthroughs mentioned above. Just as the Sumerians did a few thousand years ago, an infant starts to understand how symbols can be linked to words and how words can be associated with sounds[27]. According to researcher Jeanne Chalf, the development of a child's literacy represents a micro-version of history: 'in a sense it is as if the child has recapitulated history – from the early fumblings with the discovery of alphabetic writing to

[20] Wolf, M., *Proust and the Squid*, p. 25.
[21] Idem., p. 27.
[22] Idem., p. 30.
[23] Idem., p. 56.
[24] Idem., p. 60.
[25] Idem., p. 68.
[26] Idem., p. 73.
[27] Wolf, M., *A Triptych of the Reading Brain*, p. 187, quoted in: Piccoli, C., *Moving towards Digital: Children and the Reading Brain*, paper submitted for the course Concepts in Information Transmission, 2010.

the equal, if not greater, intellectual feat of discovering that the spoken word is made up of a finite number of words.'[28]

In an ideal situation, an infant learns about words, sentences and stories long before it can read for itself. Children develop their oral language and vocabulary when others speak or read to them. In the years that follow, normally until the end of puberty, the child experiences different changes that shape its brain step-by-step to become a fluent reader. This fluency depends largely on vocabulary and grammatical knowledge, which the child picked up in the initial phases of this process. Wolf emphasises the importance of fluency, as it gives a child the time it needs to 'direct attention where it is most needed', to understanding, predicting and interpreting a text[29].

At the end of the final phase, the child is a fluent and comprehending reader. Inside its brain, new and faster connections are formed, and slower connections are deactivated[30]. This newly organised brain enables the child to think independently, to reflect upon what it reads, to experience emotions and to be critical, etc. The child has irreversibly rewired its brain, making it possible for it to read.

Wolf often returns to the concept of 'time'. Although our society seems to be preoccupied with increasing the pace of life, she pleads for a slower pace that will allow us time for reflection, contemplation and wonder. Because the reading brain has already been rewired once before, it rearranges itself more easily, thereby creating a foundation for new, innovative thoughts and the development of advanced intellectual skills[31]. The fluent and comprehending expert reader is given more 'time to think beyond the text'. His brain can process words and their meaning so quickly that he has the opportunity to weigh them up, reflect on them and to form his own opinions.

According to Wolf, this is the essential merit of reading. She states that modern readers, who have immediate access to online information, run the risk of underdeveloping their brain capacity. A few uncritical clicks of the mouse are all that stand between an individual and the limitless amount of free data available on the Internet. Wolfs wonders whether children are still taught to approach this data from a critical perspective, whether they still learn to 'go beyond the text'[32]. This seems less and less the case and she fears that children may become mere 'decoders of information', tricked into believing that unlimited access to information equals true knowledge.

[28] Jeanne Chalf, quoted in Wolf, M., *Proust and the Squid*, p. 108.
[29] Wolf, M., *Proust and the Squid*, p. 132-3.
[30] Idem., 143.
[31] Idem., 217-8.
[32] Idem., p. 225.

1.1.2 Alain Giffard

'Reading has become industrious.'[33] It is with this rather blunt statement that Alain Giffard opens his essay *Des lectures industrielles* on reading. In contrast to other, more pessimistic researchers, Giffard decides not to view digital reading as a degrading phenomenon that 'just happens' to the classical form of reading. Instead, he assumes that it is one of the many forms of reading. In his essay, Giffard distinguishes approximately between *lecture d'étude* and *lecture d'information*, the former being attentive, studious reading, the latter being a form of scanning, after which the reader decides whether to study a text or discard it[34].

Giffard is critical towards theories that deduce specific forms of reading a priori from properties of the digital medium[35]. He argues that, although the influence of the digital medium should be considered properly, it should not be overestimated. Therefore, he suggests that online reading is not only a *consequence* of the digital medium: the technology of digital reading was also a *condition* for development of the Internet.

Giffard analyses the rise and development of digital reading from a technical point of view, starting with the idea of the Memex reading machine[36]. This machine would allow its users to consult microfilmed documents on screen, while using a keyboard to navigate through the database, annotate documents and link files to each other. In the nineteen-fifties, many researchers focused on inventing a machine that enabled users to work in a new and effective way with large numbers of texts. Their main focus was to develop the concept of 'associative reading', based on how humans have and follow associative thoughts, creating a personal path through texts. This concept, linking parts of different texts, was at the basis of the invention of hypertext.

Amongst other things, the technologies of hypertext facilitate intertextuality and fragmented writings and allow users to navigate through texts as if they were browsing a codex index. Although it was now possible to read from a screen, very few texts were actually produced for this purpose. The computer did not become an actual reading machine until the invention of the Internet. This invention was preceded by developments like the graphic user interface and the personal computer.

When combined with the Internet, hypertext was able to reach its full growth. All texts were available within the network of hyperlinks, fully permitting associative reading. The *reader* would become a *user*, who had access to a text as well as the possibility to intervene. However, the limitations of the Internet prevailed. Today, it is impossible for the reader to create his own hyperlinks to texts he wishes to read and reread[37]. He reads texts, i.e. hypertexts, but is not able to create his personal path[38]. Nevertheless, Internet technology

33 Giffard, A., *Des lectures industrielles*, p. 117.
34 Idem., p. 184.
35 Idem., p. 124.
36 The idea of this machine was suggested by the engineer Vannevar Bush in 1945 but never actually realised.
37 Giffard, A., *Des lectures industrielles*, p. 145.
38 Idem., p. 157.

does provide a new environment for reading in which the printed text is no longer the reference. According to Giffard, this new form of reading resembles both classic reading from print and preliminary reading from a screen. The digital medium ensures the existence of digital texts, ensuring that the printed text is no longer the reference[39].

Reading on the Internet demands a great deal of responsibility from the reader. Giffard remarks how browsing the Internet is a good representation of the indecisive nature of digital reading. Browsing often leads to 'zapping' behaviour: jumping from one web page to another. In a short space of time, the reader has to estimate the interest of the page and decide whether to leave or return to it. He navigates the Internet, deciding on what to read and what to discard with just a few rapid mouse clicks. This leaves the reader with a double responsibility: has he constructed a coherent corpus and at which point should he start to read the texts accumulated?[40]

An illustration of this activity can be found in the reading behaviour of an average digital reader. Every morning, after checking his e-mail, he browses through several news websites. Each promising link is opened in another tab or window, leaving the reader with a large quantity of selected texts. The activity of following hyperlinks and accumulating texts continues until the reader decides to stop. The value of each link is estimated by scanning the header and the introduction. The reader subsequently decides whether to leave the link 'open' for a later time or to close it right away. According to Giffard, the digital reader is left with 'a functional and cognitive task and an intellectual responsibility', which makes him both an author and an editor[41].

To be able to remember a hyperlink, the digital reader has the possibility to bookmark it. Bookmarking or tagging are the digital equivalents of a comparable activity in 'traditional' or 'classic' reading[42], descriptions used by Giffard to refer to reading from print. When processing a text, readers often draw on marking or annotation activities[43]. Giffard stresses the important role of memory when reading. Activities of this nature can function as mnemonic techniques in both digital and traditional reading.

According to Giffard, the activity of reading is related in part to memory. The activity of reading consists of two aspects: the *recording* aspect, which ensures that the reader records a text in his memory, and the *recalling* aspect, which enables him to *recall* the text from his memory[44]. While recording texts (or registering a text in his memory), a reader constructs what Giffard refers to as 'his personal library'[45], a gathering of texts linked to the reader's consciousness. Each text read is classified, structured and saved in a reader's memory.

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39 Idem, p. 148-9.
40 Idem., p. 162.
41 Idem., p. 163.
42 Giffard uses these descriptions to refer to reading from print.
43 Hillesund, T., 'Digital Reading Spaces: How Expert Readers handle Books, the Web, and Electronic Paper'.
44 *Enregistrement* or *mémoire écriture* and *remémoration* or *mémoire lecture*, in : Giffard, A., *Des lectures industrielles*, p. 175.
45 Giffard, A., *Des lectures industrielles*, p. 175-6.

From this memory of texts, the reader can evoke or recollect phrases or citations when needed. It functions as a framework in which he places each new text he reads – partly subconsciously. Giffard emphasises the relevance of having a personal library of this nature and fears that today's information technology reduces the recording phase and thereby the construction of a personal library to the status of a machine[46].

This statement brings us to Giffard's principal point. His analysis of the technological advances that led to the development of the computer indicates how one of the functions of technologies like hypertext is to imitate and replace the function of the human memory. Generally, the reading process consists of the following phases: the reader uses associative to assemble several texts. He uses indexing to classify these texts and uses annotation and marking to record them in his memory.

In the case of digital reading, the reader delegates the absorption of a text to the digital medium. In other words, the text is not recorded in the memory of the reader but in the memory of the machine[47]. The reader thus misses an essential part in the registering of a text. Giffard suggests that activities like annotation and marking may perhaps personalise a reader's memory again. Nevertheless, he states: '(the art of) memory is not the strongest point of the information science.'[48]

Considerable parts of the memorisation process are now delegated to their technological equivalents: following hyperlinks, browsing or zapping, scanning and indexing search results, bookmarking and tagging relevant parts. In the case of a competent reader, these imitations merely support his reading activity. However, where an incompetent or underdeveloped (young) reader is concerned, they might prevent the development of his reading brain.

Consequently, Giffard concludes that digital reading has significant limitations as a practice[49]. Most importantly, it disables the profound *lecture d'étude* and therefore does not meet the required conditions of reading[50]. Another significant conclusion that Giffard makes is that digital reading is a technology and that this technology is imperfect. He states, however, that all technology is imperfect: writing, print and digital. Based on this view, one can conclude that since humanity 'invented' these technologies, it is its responsibility to come up with a solution to this imperfection, by developing skills and methods to work with this technology[51].

It is vital, however, that one is aware of these imperfections. For the untrained and incompetent mind, they can be hidden by the technological imitations indicated above. As

46 Ibidem.
47 Idem., p. 175-7.
48 Idem., p. 178.
49 Idem., p. 186.
50 Idem., p. 186.
51 Idem., p. 188.

Giffard concludes rather darkly, it will eventually be possible to imitate all reading activity[52].

Giffard suggests that the digital reader enjoys digital reading exactly because of the technological aspects. He enjoys the particularity and the originality of this new way of reading. Nevertheless, every digital reader should be aware of the risks. The most important risks are a combination of the properties of the digital medium, as mentioned above. The digital reader must realise that he can confuse scanning digital texts with profound reading. Moreover, he should avoid the complete replacement of the different phases of reading with their technological equivalents. But most of all, the digital reader should be aware of the imperfections inherent in technology. Once aware of these deficiencies, the modern reader will be able to know when he should use a specific reading practice: digital or academic, scanning or profound, etc.[53]

1.1.3 Anne Mangen

In her article "Hypertext Fiction Reading: Haptics and Immersion", Anne Mangen emphasises the role played by our bodies in the activity of reading, especially the use of our hands and fingers in 'immersive fiction reading'.[54] From her perspective, there is an important connection between the text and the technological platform it is being read on, whether this is a codex, a newspaper, a smartphone, or a computer. She suggests that readers can more easily 'immerse' themselves in a text when they are able to feel the text and touch the pages as they flip them over.

Conversely, the clicking and scrolling of the mouse when reading on a digital platform would create a certain distance from the text[55]. It is this immersive aspect that readers enjoy when reading a work of fiction. The fact that this aspect is lacking on digital platforms, implies a great deal in relation to the future of digital reading.

The immersion Anne Mangen refers to is a kind of immersion with which most expert readers are familiar. It is what happens when you get lost in a book and forget the world around you. The book functions as a portal to this world and you are almost unaware of holding it: the book has become a transparent medium. Mangen calls this 'phenomenological immersion'.[56] A different kind of immersion occurs when experiencing 'virtual reality installations, computer simulations, and while playing computer games.'[57] In this case, it is not our own fantasy that creates the virtual world we become immersed in, but the technology. She refers to this as technological immersion.

Mangen argues that the distance between the reader and the digital text is caused by the properties of the digital medium and, principally, by the *intangibility* of digital text. Unlike

[52] Idem., p. 192-3.
[53] Idem., p. 211-2.
[54] Mangen, A., 'Hypertext Fiction Reading: Haptics and Immersion', p. 404.
[55] Idem., p. 404.
[56] Idem., p. 406.
[57] Ibidem.

the printed text, digital text is volatile and ungraspable and, therefore, has 'distinctively different sensory-motor affordances'[58], which influence our reading experience.

Like Giffard, Anne Mangen stresses the impatient and 'zapping' behaviour demonstrated by digital readers. They tend to scan a digital text and are easily distracted. Instead of taking the trouble to remain focused, they would rather 'rekindle [their] attention by outside stimuli',[59] i.e. by clicking on other hyperlinks. This behaviour is facilitated by the sensory-motor affordances of the digital medium, such as clicking on appealing icons with your mouse. Mangen states that

'such scanning and browsing has the effect of making the overall reading experience one of sensory – motor […] interaction with the technological features of the hypertext, rather than a primarily [phenomenological] immersion in the fiction being told [...]'[60]

When offered the opportunity to click, our attention is immediately divided between the text we are currently reading and the text we could be reading next. This split attention is one of the main reasons why the technology of the digital platform disables phenomenological immersion.

It has been established that every technical innovation, platform or device influences and changes the way we read. Drawing on a theory developed by the phenomenologist Don Ihde, Mangen distinguishes three types of human-technology relations: embodiment relationships, hermeneutic relationships and alterity relationships. The book as a transparent medium is an example of an embodiment relation: 'the instrument or technology is experienced as an extension of [the] body.'[61]

In the case of reading, the technology of the book can function as a physical means through which the reader experiences the text. Other examples of this can be the use of glasses or talking through the telephone. In hermeneutic relations, technology functions as a mediator between the outside world and the reader/user. The use of a map or a thermometer is an example of a hermeneutic relation.

In the case of embodiment relations and hermeneutic relations, technology must function properly. If it fails, it is no longer transparent and considered 'obtrusive' to the experience[62]. In alterity relationships, however, the consciousness of the presence of technology is desired and positive: 'our relation to the technology finds its focal fulfilment in the interaction with the artefact – the computer – itself.'[63]

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58 Idem., p. 408.
59 Idem., p. 410.
60 Idem., p. 411.
61 Idem., p. 413.
62 Idem., p. 415.
63 Ibidem.

All three of the above mentioned human-technology relations are represented in the computer. When we are playing a computer game, we use the mouse and the keyboard (embodiment relationships), we are immersed in a storyline (hermeneutic relationships) and compete with a machine (alterity relationships)[64]. Where the digital reading of fiction is concerned, Mangen concludes that alterity relationships prevail over embodiment and hermeneutic relationships. In other words, the text will always remain digital and the distance between text and reader will be too big. This implies that it is nearly impossible for the reader to immerse himself in digital fiction in the same way that he is able to immerse himself in a book.

1.1.4 Terje Hillesund

In his article "Digital Reading Spaces: How Expert Readers handle Books, the Web, and Electronic Paper", Terje Hillesund discusses some current theories on digital reading and the conclusions of his own research. From these conclusions, he distinguishes several forms of reading, generally depending on the objective of the reader and on the reading material.

Hillesund's research is based in part on Anne Mangen's theory on embodiment and hermeneutic relations (1.1.3.). Because Hillesund's research focuses on what he refers to as *academic* or *expert* reading, he interviewed 14 scholars on the position of their body and hands when reading. Moreover, he concentrated on the merits of screen and paper in different forms of reading. Hillesund notes that it is difficult to analyse one's reading behaviour, precisely because of the embodiment relations we have with certain technologies. For most competent readers, this activity is so natural that they are unaware of their bodily behaviour.

Within the subject of academic reading, Hillesund proposes several types of reading, the most important ones being *continuous* and *discontinuous* reading. Continuous reading is defined as a long period spent reading a book or a magazine. This implies that a certain continuity is inherent to reading from print. When the activity of reading is interrupted, it becomes discontinuous. This is the case, for instance, when reading on a digital platform, a type of reading usually characterised by the words 'browsing' and 'scanning'.

The most important finding to emerge from Hillesund's interviews is that scholarly reading – whether digital or print – is almost always discontinuous. Generally, online scholarly reading is characterised by fragmented discontinuous reading, initiated by browsing behaviour, such as scanning the web for relevant web pages. Expert reading in print, when scholars use one source, like a book, and flip back and forth between chapters, scanning the index and introduction, etc., is characterised by sustained discontinuous reading. Continuous scholarly reading appears to occur only in the case of "scholarly reading for

[64] Ibidem.

pleasure', which is the continuous reading of non-fiction books'.[65]

In line with the research conducted by Anne Mangen, as discussed above, Hillesund proposes different levels of immersion in reading. In the case of scholarly reading, he distinguishes between imaginary and reflective immersive reading. The former requires scholars to read continuously in order to become absorbed in the narrative. The latter is related to an argumentative text, which tries to convince its readers on the basis of arguments on the one hand and provokes its readers to think critically on the other hand.

From his interviews with scholars, Hillesund concludes that the chief part of scholarly reading is still done on paper, varying between books, articles and print-outs. It becomes clear that the different forms of reading behaviour depend largely on the reading material, although Hillesund notes an increasing overlap between online and printed scholarly reading:

'Several of the participants in the study reported that they sometimes read articles on-screen and even online, although their on-screen reading is not particularly conscientious and is usually for the sake of overview, typically without note-taking and often terminated before the end.'[66]

The material properties of print allow both continuous and discontinuous reading, both imaginary and reflective immersion and both fragmented and sustained reading. The results of Hillesund's study imply that the properties of the digital medium have specific qualities. They might be 'the least suited for [sustained] immersive reading',[67] but they are very appropriate for 'searching and browsing, and the use of dictionaries, encyclopaedias and databases.'[68]

When reading from print, Hillesund's participants all used their hands in an active manner, by flipping through the pages, annotating and marking, highlighting and summarising. Hillesund notes that 'in paper reading, the participants make active use of the tangibility and physical shape of books and printouts.'[69] Where digital reading is concerned, the mouse and the keyboard are used for 'browsing, searching, accessing, downloading and skimming text.'[70]

The use of both digital and print text when reading and the annotation, marking and summarising of reading matter leads Hillesund to conclude that in scholarly reading 'three historical systems are still in use: […]the modern computer system, printed paper – and the ancient system of handwriting.'[71] Each of these three systems has its own form of reading

[65] Idem.
[66] Idem.
[67] Idem.
[68] Idem.
[69] Idem.
[70] Idem.
[71] Idem.

and is used according to the material present in the text.

Hillesund pleads for 'long-form text transference.' In line with Maryanne Wolf, he believes the capacity to immerse ourselves in long texts, both sustained reflective as well as continuous imaginary reading, is beneficial for our cognitive development. Amongst other things, this would require the improvement of e-readers and e-paper, as well as the adaption of web-browsers to a study-mode with fewer distractions.

1.1.5 Denise Murray

In her article "Changing Technologies, Changing Literacy Communities?", Denise Murray focuses on the sociological influences of technological revolutions. The sociological impact of the computer revolution are often said to 'change the way we think, create greater democracy, or [conversely] concentrate wealth and power among a privileged elite.'[72] However, Murray warns against a techno-deterministic point of view, as it is difficult to establish the actual impact that technology has. It may only be possible to identify this impact after taking a look at the 'sociocultural milieu into which [they] are introduced'.[73]

Murray critically examines the concept of the 'Information Age', a notion often used to refer to the present decades in which computer use has increased dramatically. She argues that use of the word 'information' might cause readers to confuse the data they find on the Internet with actual knowledge. Murray claims that modern readers will need special skills to read and critically interpret the amount of data they encounter[74].

She stresses that many readers are easily tricked into believing the authenticity of digital text. They often forget that, just as all other technologies, the computer and the Internet are created entirely created by mankind and that each website and search engine is built according to the wishes of the programmer. This leads to difficulties when seeking to estimate the value of information on the Internet[75]. Having been a print-based literary society for many centuries, this aided the development of 'ways of authenticating, validating, and sieving information', allowing us to trust most of the information we find in scholarly books.

As with most revolutions, the current computer revolution is partly about power. Access to information implies access to power and control over this information implies control over the power. This became clear again when the Iranian government attempted to hinder internet access for citizens during the Green Revolution of 2009. However, 'access [to technology] is not sufficient' for a revolution[76]. In Western countries, online freedom is just relative too. Murray reminds us that our access to the Internet is controlled by 'powerful

[72] Murray, D.E., 'Changing Technologies, Changing Literacy Communities?', p. 43.
[73] Idem., p. 43.
[74] Idem., p. 50.
[75] Idem., p. 51.
[76] Idem., p. 52.

corporations, especially software gatekeepers like Microsoft' and our data exchange is monitored and collected by 'dotcom companies'[77]. In contrast with the world of print, the Internet does not (yet) have accepted information authentication methods that ensure quality and, therefore, act as a gatekeeper.

Although Murray is cautious not to draw conclusions that are of an overly techno-deterministic nature, she acknowledges that 'the introduction of [literacy] technology is not neutral.'[78] Because technology is always invented by humans, it is a reflection of the social values that a society has. As Van der Weel points out, we often use media differently to the use intended[79]. Societies adapt a new technology 'to fit their value systems and practices'[80] and subsequently determine what its added value will be.

Stating that the introduction and impact of new technologies can be influenced by society implies that anyone who steps up to take control can influence 'the power over how to use the technology'.[81] Educators should be responsible for instructing young readers on how to validate digital texts and how to cope with the abundance of information they encounter every day. Murray stresses that our society needs to recognise the possibilities offered by technology and critically examine the question of whether there is a need to adopt them. She predicts that print will continue to exist alongside digital communication, since both will be 'part of the complex of communication forms available for human beings to use, depending on the context of the event.'[82]

1.2 Themes

This chapter set out with the object of reviewing some literature on digital reading and discussed five theories that presented different perspectives on the digital reading debate. Numerous articles have been written on the same subject. These five theories are discussed because they provide us with an accurate impression of the dominant conceptions of this broad subject. After carefully considering the results of this review, it is possible to identify five themes, each of which represents an aspect of digital reading.

1.2.1 Reflection and Memory

Some authors (Wolf, Giffard, Mangen) share the fear that the practice of digital reading will cause digital readers to lose the ability to think critically and reflect upon texts. Their fears relate primarily to children or 'incompetent' readers whose brains have not developed completely.

The observations made by Maryanne Wolf demonstrate that every child that learns to read

[77] Idem., p. 52.
[78] Idem., p. 53.
[79] Weel, A. Van der, in 'New mediums: New Perspectives on Knowledge Production', p. 7, available at: http://www.let.leidenuniv.nl/wgbw/research/Weel_Articles/15_KNAW_Weel_rev_Aug09
[80] Murray, D.E., 'Changing Technologies, Changing Literacy Communities?', p. 53
[81] Ibidem.
[82] Ibidem.

follows the same process applicable for his ancient ancestors when they slowly but surely rewired their brains for reading. This rewiring causes the brain to become more flexible. It becomes easier for the brain to rearrange itself, to create new thoughts and develop advanced intellectual skills. Those abilities enable us to reflect on what is written, to be critical and to 'go beyond the text'. A reader's reflection on the texts he reads appears to be similar to the ancient Greek method of discussing problems in a dialogue.

When reading on a digital medium, our reading behaviour is characterised by browsing, scanning and zapping and is considerably less reflective. This restless behaviour is said to be incited by the Internet, which offers endless possibilities to revive our attention the moment it starts to diminish. When skipping from text to text, the digital reader has little opportunity to pause and reflect upon his reading. Instead of a critical reader, he might become a mere 'decoder of information'.

1.2.2 Information and Knowledge

Quality versus Quantity

Several theories (Giffard, Mangen, Murray) refer to the impact of the seemingly limitless amount of data available on the Internet. Within the reach of the familiar 'clicks of a mouse', the digital reader is offered more data than he requested. It is up to him to filter these data, select what interests him, discard the rest and decide on the order in which he will read the texts selected. This activity makes him both an author and an editor.

Access

There are downsides to the availability of data and the responsibility of the reader to select relevant parts. Murray illustrates how, during centuries of print, societies have developed ways of authenticating and validating text: 'Books and journal articles are reviewed before publication, edited by skilled professional editors, and referred to and commented on by reviewers or in citations.'[83]

Currently, we have little way of knowing whether the data we find on the Internet can be trusted. However, to the incompetent (young) reader, any information published on the Internet might have the appearance of actual knowledge. Both Wolf and Mangen comment on the responsibility of educators to train children not to unthinkingly accept the authenticity of digital text.

1.2.3 Simulation and Delegation

Many computer technologies are based on an imitation of the functions of the human brain, digital text being no exception. These technologies, varying from hypertext to bookmarking, browsing, and scanning, are designed to simplify the processing of text. Most digital readers have adapted themselves to working with these technologies and have little awareness of their possible impact.

[83] Murray, D.E., 'Changing Technologies, Changing Literacy Communities?', p. 51.

Both Wolf and Giffard note that since these technologies replace their physical equivalents, young and incompetent readers in particular are at risk of underdeveloping some essential reading skills. This principally concerns the development of a reader's memory. During the reading process, a reader registers or *records* the text in his memory. This is facilitated, for instance, by a physical handling of the text. This could include highlighting, annotating and summarising the text.

Together, these recorded texts form a personal library. From this personal collection of texts, a reader can *recall* (parts of) the texts whenever he needs to. In the case of a fluent and competent reader, significant parts of these texts are automatically recalled during the activity of reading. This facilitates his reading speed and his interpretation of the text he reads and allows him to distance himself from the text and critically reflect on what he reads.

It is suggested that the crucial phases of the recording process are replaced by the technological equivalents of the mnemonic techniques, such as browsing, scanning and bookmarking. This would imply that the digital reader records considerably fewer texts for this personal library, thereby decreasing his ability to maintain a critical attitude towards texts.

1.2.4 Intangibility and Volatility

The way in which a text should be read in order to record it in a reader's memory depends on the type of text. For instance, the reader will remember more about a fictional text if he was deeply immersed in it (see 1.2.5.). Conversely, he tends to process a scholarly text better when he is able to highlight or mark relevant parts, annotate them or make a summary.

In most cases, the physical handling of the text plays an important role in the reading and recording of a text. Although the computer offers technical simulations of activities like annotating and marking (see 1.2.3.), there would seem to be notable advantages to being able to feel the printed pages and 'flip back and forth' between them.

One of the most important differences between digital and printed text is the intangibility of digital text. When reading from print, readers have a tendency to use their hands in an active manner. The volatility of digital text makes it difficult for a reader to grasp it, both literally and metaphorically. The digital medium stands between the digital text and the reader, who needs the keyboard and mouse to navigate through the text.

Because of the easy use of these affordances and the volatile nature of digital text, the reader is easily tempted to click away from a particular text as soon as his attention starts to decline. Consequently, the reader has little chance to become immersed or absorbed in a text, which in turn makes it difficult to record it in his memory (see 1.2.1).

1.2.5 Immersion

The literature reviewed distinguishes between approximately two types of immersion. Attentive, studious immersion can be described as a form of conscious, reflective immersion that often presents itself in scholarly reading. Imaginary, emotional immersion is a more subconscious form of immersion that generally occurs when reading (fictional) literature.

Both Anne Mangen and Terje Hillesund discuss the extent to which the level of immersion depends on the type of text and on the medium used. In other words, scholars often read in a discontinuous and fragmented manner, which results in a significantly lower level of immersion than the level of immersion applicable for a fictional page turner. Both Hillesund and Mangen recognise the importance of immersion in texts.

Moreover, Mangen suggests that the different levels of immersion are connected to the medium on which the text is read. She concludes that the technological properties of the digital medium affect the relationship between the reader and the text. The human-technology relation between a reader and the digital medium can be described as an alterity relationship. This implies that, in contrast with embodiment and hermeneutical relations, the digital platform is always present during the reading experience.

Just as is true in relation to the intangibility and volatility of digital text (see 1.2.4.), the opacity of the digital medium creates a certain distance between the text and the reader. This prevents the reader from immersing himself completely in a digital text in the way in which he immerses himself in a book. This impacts particularly on the imaginary, emotional immersion that applies when reading fiction.

The attentive, studious immersion required for scholarly reading demands more concentration from the reader and, as such, is more difficult to maintain. Hillesund concludes that many scholars use mnemonic techniques like highlighting and annotation to maintain the level of immersion. He notes that, when reading from print, they use their hands and fingers in an active manner and, like Mangen, concludes that this physical handling of text is hindered by the digital medium.

1.3 Conclusion

An analysis of the theories selected demonstrates that the activity of reading is beneficial for our cognitive development. To be able to learn to read, a reader has to 'rewire' his brain by forming new and faster connections. Once rewired, the brain is more flexible and open to creative and original thoughts. Besides this, a fluent or competent reader will have a more critical approach to what he reads, because he has time to reflect and uses his personal library as a framework to 'test' his current reading matter.

When a reader is able to immerse himself in long texts, it becomes easier for him to absorb and record them. Texts that hinder immersive reading (scholarly texts, for example) can be

processed using annotation and marking. Texts that are processed – or recorded - successfully contribute to the creation of a reader's 'personal library', a vast collection of texts secured in his memory. This personal library benefits the speed of reading, the interpretation of texts and the possibility to think 'beyond the text'.

The literature reviewed suggests that some of these beneficial properties of reading are disabled by the digital medium. This does not mean that digital reading should be discouraged completely. Firstly, this actually seems impossible, since digital reading has become a significant part of our daily lives. Digital readers often seem to prefer the digital medium, especially because of its technological properties. Moreover, the practice of digital reading is not necessarily damaging. As is suggested by several scholars (Giffard, Hillesund, Murray), we can use the digital medium for reading as long as we are aware of its impact and possible limitations.

However, is it certain that the impact of digital reading is caused by the digital medium a priori? These techno-deterministic statements should be made with caution. Some researchers (Giffard, Murray) suggest that it is society that eventually determines the influence that a new technology has. This point of view is illustrated by an article in *Ars Technica*[84],on the introduction of new technologies in society, illustrating how it was feared that technological devices like the gramophone would lead to a decrease in amateur singing, thus killing 'the national throat' and '[putting] an end to music'. Although the development of the gramophone has change the way music is experienced – people today sing less for home entertainment - it certainly has not killed off music altogether.

Although it has been established that the reading behaviour demonstrated by the digital reader differs from that of a 'classical' reader, the extent to which this change is because of the digital medium is not clear. As stated in the introduction to this thesis, it is difficult to establish the impact that a new technology has on society when we are still very much involved in the introduction process.

Having analysing several theories on digital reading in this chapter, it is now possible to present an overview of five themes, covering every aspect of digital reading (1.2.1 to 1.2.5.). It becomes clear that all the properties of reading – both digital and in print– are connected with and influence each other. In Chapter 2, I will place these themes in a historical perspective, in order to establish the extent to which these themes might actually be inherent to the digital medium.

[84] Anderson, N., '100 years of Big Content Fearing Technology – in its own words', in: *Ars Technica*, October, 11th, 2009, http://arstechnica.com/tech-policy/news/2009/10/100-years-of-big-content-fearing-technologyin-its-own-words.ars/ (August 3rd, 2010)

2 Perspectives on the History of Reading

> The history of reading is at the stage of astronomy before telescopes, economics before statistics, heavily reliant on a few commonly repeated traditional narratives and favorite anecdotes, but weak on the spade-work of basic empirical research, quantification, consolidation and scrutiny of primary information, upon which both narrative history and theory ought to rest.
> *William St. Clair, The Reading Nation in the Romantic Period*

> An understanding of historical reading practices is essential if we are to understand the impact of texts on individuals and society.
> *Ian Jackson, Approaches to the History of Readers and Reading*

> Neither, were my notions of the theological positions to which my Catechism bound me, at all accurate; for, I have a lively remembrance that I supposed my declaration that I was to 'walk in the same all days of my life', laid me under an obligation always to walk in one particular direction, and never to vary it by turning down by the wheelwright's or up by the mill.
> *Charles Dickens, Great Expectations*

> The truth was that Sir Edward whom circumstances had confined very much to one spot had read more sentimental novels than agreed with him. His fancy had been early caught by all the impassioned, and most exceptionable parts of Richardson's; and such authors as have since appeared to tread in Richardson's steps, so far as a man's determined pursuit of woman in defiance of every feeling and convenience is concerned, had since occupied the greater part of his literary hours, and formed his character.
> *Jane Austen, Sanditon*

2.0 Introduction

After analysing several theories on digital reading, Chapter one concluded with the following reading themes: *Reflection and Memory*, *Information and Knowledge*, *Simulation and Delegation*, *Intangibility and Volatility* and *Immersion*. This chapter will place these themes in a historical perspective.

When studying the history of reading, it is important to bear in mind that there is no such thing as one, true, history of reading. We could distinguish readers based on economical, sexual, sociological, religious or intellectual grounds, but we could never be sure that every reader read the same reading matter, in the same way, for the same reasons as the other members of the group in which we would place them. Therefore, it might be more correct to speak of the *histories* of reading.

Roger Chartier suggests that these histories of reading could be assessed by means of both

'case studies and bird's-eye views.'[85] Although we will never be able to see the whole picture applicable for all past reading practices, this method facilitates the construction of some more general perspectives. Because of the huge quantity of historical information available on reading, it is essential to have clear and limited perspectives when studying these histories of reading.

The perspectives used in this chapter are the themes that emerged from the theories reviewed in Chapter one. This chapter will consider these themes from a historical point of view (2.1.1 to 2.1.6.). Unfortunately, it is nearly impossible to completely avoid an overlap between the different themes. This indicates once more the complexity of historical studies. It is best to accept the overlap and the lack of a clearer division between the themes. Nevertheless, in order to appreciate the diversity of the history of reading to its fullest extent, it is advisable to avoid a fragmented reading of the subsections and maintain a continuous reading behaviour.

2.1 Historical Perspective

2.1.1 Reflection and Memory

The Ancient Greek alphabet, from which most Indo-European alphabets originated, evolved out of various writing systems from the Near and Far East. It is impossible to indicate the exact date of its introduction in society, but it can be established that it started to be used more frequently as of the fifth century BC[86].

It is significant to consider how the mainly oral society of Ancient Greece reacted to the introduction of the written word. When alphabetic writing was introduced, reading was still primarily a vocal activity and, as such, mainly practised aloud[87]. The philosophers, for instance, used dialogues and interaction to unravel concepts and ideas with their listeners, the conversations of Socrates being one of the most familiar examples of this spoken discourse. Consequently, the intuitive reaction to the new technology of writing was to 'put [it] to the service of oral culture'.[88]

The Ancient Greek philosopher Socrates was a known adversary of the use of writing. Ironically, his objections survived only because his pupil Plato wrote them down. Plato lets Socrates argue that, unlike the spoken word, the written word cannot defend itself, for once written down it cannot respond to questions or accusations[89] and, as such, cannot contribute to a fruitful discussion. The written word has no context, because of which it is open to interpretation, not necessarily the correct one. Moreover, an author has no control over the audience reached by his words or of whether this person, the reader, will be

[85] Chartier, R., *Forms and Meanings*, p. 3.
[86] Wolf, M., *Proust and the Squid*, p. 59-60.
[87] Svenbro, J., 'Archaic and Classical Greece: The Invention of Silent Reading', in: Cavallo, G. and R. Chartier, *A History of Reading in the West* (Oxford: Blackwell Publishing, 1999), pp. 37-60, p. 51-2.
[88] Svenbro, J., 'Archaic and Classical Greece: The Invention of Silent Reading', p. 38.
[89] Cavallo, G., and R. Chartier, *A History of Reading in the West*, p. 6; Wolf, M., *Proust and the Squid*, p. 72-4

capable of understanding it or will need additional information.

In her book *Proust and the Squid*, Maryanne Wolf notes that Socrates was aware of the possibilities offered by the written word in relation to an increased 'cultural memory'. Nevertheless, he focused on the negative consequences applicable for the 'individual memory'.[90] When more and more students resorted to writing down phrases, removing the need for them to memorise these statements, Socrates foresaw the destruction of the individual memory: 'they will not need to exercise their memories, being able to rely on what is written.'[91] He preferred the method whereby knowledge was acquired through memorisation and personal knowledge refined through dialogue and discussion.

The properties of the written word also influenced an important concept of Ancient Greek society: the free citizen. Svenbro notes the strained relationship a citizen must have had with the activity of reading, when his ultimate objective was to stay as free as possible, to be autonomous, both in action as well as in thought. Since a text voices the opinion of its author, the reader who reads it aloud functions as an instrument that voices this point of view. In other words, the citizen that reads aloud is no longer free of 'constraints imposed by others',[92] thereby risking the loss of his free mind and, thus, the ability to be critical and reflective.

According to Cavallo and Chartier, the alphabet may have been adopted precisely because of the mnemonic functions of preserving texts and recalling them to memory, against which Socrates' protests were essentially directed[93].

Until approximately the fifth century BC, the preservation of written text, facilitated by the inflexibility of the written word, was the principal function of the book. It was only from the fifth century BC onwards that books were also designed to be *read*.

In his article 'Between *Volumen* and Codex', Cavallo argues that the introduction of the codex during the second century AD, where readers were used to reading from scrolls, signified a change in reading style: 'from an extensive reading of many texts […] to an intensive reading of few texts, […] read, reread, repeated in the form of citations and maxims, committed to memory and recited.'[94]

A look at the history of reading shows that, throughout the centuries, the reading behaviour of the literate who wished to memorise a text alternated between reading aloud and reading in silence (or in a soft murmur). In the Byzantine Empire, for instance, reading was principally done aloud, in line with ancient spoken discourse. In Roman antiquity, it

[90] Wolf, M., *Proust and the Squid*, p. 75.
[91] Murray, D., 'Changing Technologies, Changing Literacy Communities?', p. 44.
[92] Svenbro, J., 'Archaic and Classical Greece: The Invention of Silent Reading', p. 46.
[93] Cavallo, G., and R. Chartier, *A History of Reading in the West*, p. 6.
[94] Cavallo, G., 'Between *Volumen* and Codex: Reading in the Roman World", in: Cavallo, G., and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 64-83, p. 89.

was advised to read a text aloud if it needed to be memorised: 'the mind should be kept alert by the sound of the voice.'[95]

Medieval monks preferred silent or murmured reading as they often read in community settings and because this facilitated reflection and meditation on biblical texts. In contrast with Roman beliefs, they felt that silent reading 'ensured better comprehension of the text, since the understanding of the reader is instructed more fully when the voice is silent.'[96] Furthermore, scholars in the early Middle Ages advocated profound and attentive reading, which would 'lock books in your mind'[97] and create a critical approach to the reading matter.

There was also a practical side to the memorisation of texts: since access to manuscripts was limited, scholars visiting a library could choose between copying the text in question or memorising it. It can be concluded that reading and writing practices varied according to the reading matter and the objective of the reader.

In the late Middle Ages, the slow transformation from reading aloud in public and reading silently in private contributed to a personal relationship between the text and the reader (see 2.1.5). Since the reading matter was no longer subject to the severe supervision of the reader's surroundings, both authors and readers could respectively write and read texts that disagreed with the dominant views. According to Paul Saenger, this private reading and writing 'encouraged individual critical thinking, and contributed ultimately to the development of scepticism and heresy.'[98]

Gutenberg's invention of movable type, which facilitated the production of numerous books, from classical works to vernacular bibles, was both praised and criticised. For instance, the Protestant reformer Luther denounced extensive reading, propagating instead the intensive rereading of the Bible as the best way to educate oneself. However, this statement could also relate to his realisation that free interpretations of the Bible would not necessarily be to the advantage of the Protestant Church. He suggested, therefore, that the church ought to control access to the Bible (see 2.1.2.)[99]

The paradox that Protestants and Reformers found themselves confronted with in the sixteenth century, resulting from the numerous vernacular Bible translations and the church's attempts to control the flow of information becoming available to their flock, was the classical paradox of the spoken word versus the written word. This paradox also

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95 Quintilian, quoted in Cavallo, G., 'Between *Volumen* and Codex', p. 74.
96 Isidore of Seville, quoted in Parkes, M.B., 'Reading, Copying and Interpreting a Text in the Early Middle Ages', in: Cavallo, G. and R. Chartier, *A History of Reading in the West* (Oxford: Blackwell Publishing, 1999), pp. 90-102, p. 93.
97 Cavallo, G. and R. Chartier, *A History of Reading in the West*, p. 18.
98 Saenger, P., 'Reading in the Later Middle Ages', in: Cavallo, G. and R. Chartier, *A History of Reading in the West* (Oxford: Blackwell Publishing, 1999), pp. 120-131, p. 137.
99 Gilmont, J.-F., 'Protestant Reformations and Reading', in: Cavallo, G. and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 213-33, p. 219.

underlay the objections that Socrates had to the written word. Gilmont clarifies this in his essay on Protestant reading:

'Christianity is defined, in an appeal to two seemingly contradictory means of communication, as a religion of the Word - logos - and a religion of the book - biblos. The Christian religion was intended to be the living, spontaneous presence of the Word; the Book was there only to make sure of the permanence of the message by offering the Word the guarantee of reliable memory."[100]

However, as Socrates seemed to have foreseen, once written down the word was free of all context. It had no means to defend, explain or clarify itself: like a painting, it could not respond to any questions. In the words of Cavallo and Chartier: 'The positive aspect of this is that the book enjoys the freedom to "roll" in all directions; it lends itself to free reading, interpretation and use.'[101] New interpretations of God's Word formed the foundation for the translation of the Bible into the vernacular and for the Protestant Reformations. However, the Protestants also soon realised that an individual reading of the Bible conflicted with a powerful and controlling church.

From the late Middle Ages onwards, literacy levels slowly increased in Western Europe. Nevertheless, the greater part of society, particularly the lower classes and the laity, remained largely illiterate. In the sixteenth century, young priests and children that attended school often received an oral education and were required to memorise their catechisms; 'they learned by recitation and memorization'.[102]

In the article 'Reading and the Counter-Reformation', Julia points out that although the catechisms were sometimes shortened and simplified to fit a child's memory, the ability to recite memorised texts did not automatically imply that the texts were understood. Hamesse confirms this in her essay on reading in the twelfth century: 'the well-trained memories of men of the Middle Ages enabled them to remember a large number of texts without necessarily fully understanding them.'[103] This statement is illustrated by the story of Pip, a character in Great Expectations, a novel written by Charles Dickens. The latter describes how the literal interpretation of his Catechism made him believe he should never vary his daily tour[104].

It was not until the eighteenth century that clergymen realised the benefits of children actually being able to read the catechism lessons:

'It is evident that the children who are taught to read have a much more open mind for understanding and

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[100] Idem., p. 223.
[101] Cavallo, G. and R. Chartier, *A History of Reading in the West*, p. 15.
[102] Julia, D., 'Reading and the Counter Reformation', in: Cavallo, G. and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 238-66, p. 219.
[103] Hamesse, J., 'The Scholastic Model of Reading', in: Cavallo, G. and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 103-18, p. 108.
[104] Dickens, Ch., *Great Expectations* (Middlesex: Penguin Books, 1965), p. 73.

retaining the principles of the faith taught to them. […] Those who know how to read are always able to call back to mind, by reading, what would otherwise be effaced from memory.'[105]

When the first primary schools were opened in the nineteenth century, there was little knowledge of good educational methods. Since the equipment available to most schools was less than basic and it was difficult to find qualified schoolteachers, the oldest children were often instructed with the object of teaching the rest of the class. Children learned to read merely by memorising individual words, 'without ever having touched a book' and, as Martin Lyons states, 'reading lessons insisted on the mechanical memorization of a few texts.'[106] This shows that, even though the benefits of literacy were established some time ago, the memorisation of texts continued to play an important role throughout much of the nineteenth century.

The eighteenth century is often linked to a 'reading revolution'[107] and does indeed show signs of significant changes in reading practices. The Enlightenment idea of self-improvement through ratio can be found in the new form of reading, a so-called 'intensive mode of literary appropriation',[108] focusing on reflection and the 'shaping [of] a social identity of the bourgeoisie'.[109] Nevertheless, well into the eighteenth century, a large part of the population was either illiterate or practiced a form of reading that was, as Wittmann states, 'naïve, non-reflexive and undisciplined, and for the most part performed aloud.'[110]

Authorities like the State and the Church, hoping to control and influence the reading behaviour of the reading public, 'advocated that certain mandatory, approved, or recommended texts should be read carefully, regularly, and frequently, preferably under supervision.'[111] Likewise, the ideology of the Enlightenment prescribed the reading of approved and suitable texts, resulting in literature designed specifically for the purpose of instruction, edification and reflection, such as publications with an emphasis on the morals of the bourgeoisie and the ideals of the Enlightenment[112].

During the nineteenth century, the authorities hoped that 'rational recreational literature' would promote the moral values of a bourgeois society in weaker groups of reader, such as women and workers who often read 'dangerous' fiction (see 2.1.5.)[113]. However, the Enlightenment concept of self-improvement lingered on in the minds of the working class and they were certainly aware of the essential role played by reading in this process. Lyons

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105 Charles de Caylus, bishop of Auxerre, quoted in Julia, D., 'Reading and the Counter Reformation', p. 265.
106 Lyons, M., 'New Readers in the Nineteenth Century', in: Cavallo, G. and R. Chartier, *A History of Reading in the West* (Oxford: Blackwell Publishing, 1999), pp. 313-42, p. 326.
107 Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', in: Cavallo, G. and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 284-306, p. 285.
108 Lyons, M., 'New Readers in the Nineteenth Century', p. 340.
109 Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 293.
110 Idem., p. 291.
111 St. Clair, W., *The Reading Nation in the Romantic Period* (Cambridge: Cambridge University Press, 2004), p. 11.
112 Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 292.
113 Lyons, M., 'New Readers in the Nineteenth Century', p. 334-5.

remarks how the reading behaviour of the workers who undertook the challenge of auto-didactics resembled that of the intensive reading appropriation promoted by the Enlightenment philosophers:

'They read repetitively, closely rereading the few texts at their disposal and, in their own well-worn phrase, 'committing them to memory'. They taught themselves through memorization, which often depended on reading and reciting aloud."[114]

It can be concluded that the practice of intensive and attentive reading has resulted in a better understanding of a text throughout the history of reading. It was agreed that a reader could use attentive reading – whether this was done aloud or in silence – to record a text in his memory and subject it to critical reflection.

In his essay *Reading to Read*, Armando Petrucci confirms that a variety of reading styles could exist simultaneously. Although every period had its own ideas on how one *should* read, this does not necessarily mean that these were the only practices: 'rigid, professional, ordered practices of reading have always been opposed by free, relaxed, unregulated practices.'[115]

2.1.2 Information and Knowledge

Quality versus Quantity
As stated above, shortly after the introduction of the alphabet in Ancient Greece, Socrates expressed his concerns about its impact on memory (2.1.1.) and spoken discourse (2.1.4.). He was also concerned about the false authority that could be assigned to written text, just because words in written form 'seem as though they were intelligent'.[116] Socrates feared that readers would accept written words without a critical thought, that they would absorb the writings with a false sense of understanding them.

Growing literary production and the expanding reading public of the eighteenth and nineteenth centuries were not greeted with a great deal of enthusiasm either. In the same vein as Socrates, John Locke feared that the inflexibleness and muteness of the – in his case – printed word might trick readers into believing it contained the truth. The French philosopher Denis Diderot worried about an overload of information. He expected readers to manically search for new books, discarding the books they leafed through as being 'too old', remaining ignorant of the knowledge they contained. There would be approximately two types of readers:

'The first group [of readers] will read very little, but will instead devote themselves to investigations which

[114] Idem., p. 340.
[115] Petrucci, A., 'Reading to Read: A Future for Reading', in: Cavallo, C. and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 345-66, p. 363.
[116] Plato, 'Phaedrus', in: *The Collected Dialogues*, Hamilton&Cairn, p. 275d (quoted in Wolf, M., *Proust and the Squid*, p. 74).

will be new, or which they will believe to be new (for if we are even now ignorant of a part of what is contained in so many volumes, they will know still less of what is contained in those same books, augmented as they be by a hundred – a thousand – times as many more) The second group, laborers incapable of doing nothing, will keep themselves busy day and night by leafing through these works and retaining from them all that they consider worth being collected and preserved."[117]

During the Romantic period, the upper class and the bourgeoisie in particular were worried about increasing literacy in the lower classes. St. Clair illustrates: 'Surprised by the suddenness and scale of the change, the politicians, churchmen, teachers, authors, and journalists of the time anxiously weighed the benefits and the dangers.'[118] They decided that unlimited access to information would lead to problems and they discouraged the reading of newspapers and philosophical and historical works that 'questioned and undermined accepted beliefs'.[119] Reading plays, novels and poetry was considered unfavourable as well, since it would transport readers into to an imaginary and unrealistic world (see 2.1.1. and 2.1.5). However, literature that emphasised religious and moral values was permitted.

In her article on information overload in the sixteenth to eighteenth centuries, Ann Blair describes the worries of authors of the age, who feared that the 'abundance of books' would be 'confusing and harmful' and lead to a state similar to that of the 'fall of the Roman Empire'. Some of these authors called for the destruction of all redundant books[120]. Blair remarks rather ironically that 'the perception of an overabundance of books fuelled the production of many more books, often large ones in particular, designed to remedy the problem.'[121] This included reference works like bibliographies, reviews and encyclopaedias. Blair argues that this abundance of books prompted a change in the reading behaviour of scholars in particular. Since researchers lacked the time to read every book from beginning to end, they applied selective reading, highlighting, annotating and summarising (see 2.1.3).

These selective reading practices can be seen on a smaller scale as early as the twelfth century, when the production of literary and intellectual works increased. Medieval scholars used anthologies and florilegia to search for classical and biblical extracts or to browse through works without having to read the whole text. Jacqueline Hamesse remarks that

'an uninterrupted reading of an entire work […] was gradually replaced by a more fragmented, piecemeal reading style that had the advantage of providing a quick grasp of selections but no longer encouraged any

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[117] Diderot, D., *Encyclopédie*, Vol VII, p.234-5. "Les uns liront peu & s'abandonneront à des recherches qui seront nouvelles ou qu'ils prendront pour telles, (car si nous ignorons déjà une partie de ce qui est contenu dans tant de volumes publiés en toutes sortes de langues, nous saurons bien moins encore ce que renfermeront ces volumes augmentés d'un nombre d'autres cent fois, mille fois plus grand) ; les autres, manouvriers incapables de rien produire, s'occuperont à feuilleter jour & nuit ces volumes, & à en séparer ce qu'ils jugeront digne d'être recueilli & conservé." Parts of the English translation are provided by Denise Murray.
[118] St. Clair, W., *The Reading Nation in the Romantic Period*, p. 11.
[119] Idem., p. 12.
[120] Blair, A., 'Reading Strategies for coping with Information Overload 1550-1700', in: *Journal of the History of Ideas*, Vol. 64, No. 1 (2003), pp. 11-28, p. 11.
[121] Idem., p. 12.

deep contact with the text or any genuine assimilation of the doctrine it contained. Utility outstripped knowledge."[122]

Like Blair, Hamesse signals that encyclopaedias, glossaries, and lexicons were used to manage the information overload. Furthermore, the twelfth-century monks started using mnemonic devices, such as a 'table of content, the concept index, concordances of terms, alphabetically arranged analytical tables, summaries and abridgements.'[123]

Hamesse notes a change in scholastic reading practices in the thirteenth and fourteenth centuries in comparison with the intensive reading practised in monasteries. Students arriving at the university often lacked prior education and had problems understanding the works discussed. Instead of reading the books, they confined themselves to consulting the extracts and commentaries provided. This development will be discussed in more detail in 2.1.3.

Access

According to Wolf, Socrates was convinced of the need for a mentor or teacher who could instruct his pupils on the dangers of literacy and teach them how to distinguish information from knowledge. Without guidance, the unlimited access to knowledge could result in an 'irreversible, invisible loss of control over knowledge.'[124]

Almost a millennium later, we can perceive similar fears regarding the control of information and knowledge. Despite their initial idealistic concepts, the Protestant reformers soon stated that, seemingly because of a lack of education, lay people could not be trusted to handle the amount of information provided by Bible translations and other printed material. The ability to fully understand and interpret the Bible was reserved for scholars and clergymen.

The Reformists responded with great annoyance to the new editions and translations of the Bible that started circulating without their permission. Since the various translations and religious works derived their authenticity from the Bible, most religious texts and books had an authority over the spoken word. Consequently, the Reformists tried to limit access to the translated Bible and maintained strict control over doctrinal interpretations[125].

Although he is known for his efforts to translate the Latin bible into vernacular and his conviction that the non-clerical should be able to study the Word of God for themselves, Luther had his reservations regarding the technology of print that apparently led to a 'superabundance of useless and even harmful books.'[126] In the early sixteenth century,

[122] Hamesse, J., 'The Scholastic Model of Reading', p. 107.
[123] Idem., p. 110.
[124] Wolf, M., *Proust and the Squid*, p. 76.
[125] Gilmont, J.-F., 'Protestant Reformations and Reading', p. 220-22 and 234-5.
[126] Idem., p. 219.

Luther wrote: 'the number of books on theology must be reduced and only the best ones published. It is not many books that make a man learned, nor even reading. But it is a good book frequently read, no matter how small it is.'[127] Calvin also referred to 'that confused forest of books' and called for wise, 'pious' men to provide sound commentaries[128].

After the Reformation, the Catholic Church could not avoid translating the Bible any longer. However, it also did its best to control the publication of religious works. Amongst other things, this involved the training given to priests, who would eventually lead their faithful flock. Young priests were encouraged to study religious works and to use them while practising meditation and self-reflection[129]. The works they used were evidently carefully selected by the church.

2.1.3 Simulations and Delegation

As explained in more detail in 1.1.3., the notion of 'simulations' is a generic term for the technologies designed to imitate the functions of the brain, in order to ease the reader's work. These brain functions can vary from memorising to scanning, from reflecting to indexing. When using one or several of these simulations, the reader delegates the corresponding brain functions to their technological equivalents.

It can be argued that alphabetic writing is the first simulation of human thoughts. Consequently, the use of the alphabet to write down thoughts and ideas would be delegating these thoughts to a sheet of paper.

Early on, the possible impact of delegating certain brain functions to technology were reason for concern. As stated before in this thesis (2.1.1. and 2.1.2.), Socrates was one of the earliest known protesters against delegation of the functioning of the human brain to the technology of the alphabet. In his view, the process of memorisation could not be detached from the ability to reflect upon words, to analyse concepts and examine life. He feared that by entrusting their thoughts to paper, his students would stop training their memories and, as such, would not be able to follow the steps that were necessary to obtain true knowledge and virtue.

However, despite his objections, the spread of reading and writing was unstoppable and the negative impact that Socrates attributed to reading and writing were soon accepted or forgotten. Soon, readers started using several techniques that facilitated the activity of reading, including mnemonic techniques to ease the process of memorisation. In contrast with the predictions made by Socrates, the memorisation of texts remained highly important for centuries.

The shift from scroll to codex, which took place in around the second or third century AD,

[127] Quoted in: Gilmont, J.-F., 'Protestant Reformations and Reading', p. 219.
[128] Idem., p. 234.
[129] Julia, D., 'Reading and the Counter Reformation', p. 252.

enabled readers to work differently with texts. In contrast with the scroll, which rarely coincided with one entire work, the codex consisted of one or several textual units. The different internal organisation of the codex demanded the use of 'editorial devices': writings in different shapes, colours, and styles, titles, ornaments, page numbers and use of the words *implicit* and *explicit*, all indicating the division between texts[130].

The so-called 'panoramic reading'[131] of the scroll enabled readers to gain an overview of the whole text and to read a scroll almost without interruption. The fragmented reading inherent to the layout of a page of the codex resulted in a variation between shorter and longer pieces of text, which Cavallo felt 'aided retrieval and memorization, thanks to […] a number of devices that permitted the reader to return to passages already read.'[132]

For example, both in medieval scholastic as well as vernacular texts, the reader was often presented with a table giving the high points of each part, helping the reader to browse through the text[133]. Moreover, long texts were accompanied by summaries such as the *Glossa ordinaria*, the *Decretum* and *Libri sententiarum*, used to aid an understanding of the Bible, legal texts and theological works respectively[134].

As mentioned briefly in 2.1.2, scholastic students in the fourteenth century often did not read the works required but depended entirely on relevant summaries, commentaries, or extracts such as anthologies and *florilegia*. The motivation and intention of the composer of such works was not always clear. Some of them are anonymous, others are based on previous anthologies. Hamesse describes some negative consequences of the use of florilegia like this:

'[they turned] medieval students away from direct consultations of authors' works […], limited creativity, and […] guided studies in the direction of sterility when such collections of quotations were no longer considered as working tools but became an end in themselves. The original presentation of an author's thought was reduced to a series of quotations […] taken out of context, a number of doctrines were distorted. […] The choice of selections was left to the arbitrary judgment of the compiler […] [implying] an excessive simplification and, above all, a lack of nuance."[135] *The use of these dubious florilegia slowly declined during the fourteenth century, when more books became available and the rising Humanism revived the interest for classical texts as well as a love of books.*[136]

Nevertheless, readers continued to develop new mnemonic devices to facilitate and speed up their reading process. In the centuries that followed, they worked with wax tabs, indexes and tables. To memorise texts better, scribes scribbled annotations in the margins of texts,

130 Cavallo, G., 'Between *Volumen* and Codex', p. 87.
131 Idem., p. 88.
132 Idem., p. 88.
133 Saenger, P., 'Reading in the Later Middle Ages', p. 147.
134 Hamasse, J., 'The Scholastic Model of Reading', p. 108-9.
135 Idem., p. 115.
136 Idem., p. 119-20.

rubricated or highlighted parts they considered worthwhile and provided glossaries and summaries.

2.1.4 Intangibility and Volatility

Today, many researchers (Wolf, Giffard, Mangen) base themselves on the assumption that the physical handling of a text plays an important role in its reading and recording. Consequently, they suggest that a text that has a physical form that can be grasped and held, in which readers can make annotations or highlight significant parts, will be memorised better than an intangible text.

When it comes to the intangibility of text, it might be interesting to consider the practice of spreading information in an oral society. Before the introduction of alphabetic writing, epic tales, poems and myths were memorised, sometimes with the help of music or rhyme and spread orally. The texts did exist, but not in a fixed, physical form.

This also seems to be the case where oral reading is concerned. Although the oral reader does read from a tangible text, the vocalised text has no actual form for the listeners. As Jesper Svenbro states on reading aloud in Greek Antiquity, 'in a culture that valued the spoken word as highly as the Greeks did, writing held little interest except as vocalised reading.'[137] He analyses the Ancient Greek root word for 'reading': *nemein*, meaning 'to distribute', 'to read aloud'. Another significant word, *epilegesthai*, implies the 'incompleteness of writing'[138], which is to be completed by sound. A third word, *akouontes*, indicates that the readers to whom the text was addressed, were actually 'auditors'. From this analysis, Svenbro deduces that 'the reader [was] an instrument in the service of writing.'[139] The reader was a medium, his voice an instrument for the distribution of written text.

Svenbro distinguishes several reasons for the vocalisation of written texts. The first one regards the lack of punctuation: most texts were written with little punctuation, no standard spelling and without spaces between the words. When not read aloud, it was nearly impossible to decipher and understand these texts, both for the reader and for the listeners.

A more significant reason however, is that a written text was not considered to be complete without the voice that read it aloud. The Ancient Greeks considered a text not as a static object, but 'as the name given to a dynamic relationship between writing and the voice and between the person writing and the reader.'[140] Svenbro emphasises that the voice of a reader was indispensable for the distribution of the content of the text.

Socrates' protests against the written word provide a good example of the Greeks' relationship with spoken discourse. According to Socrates, 'living speech represented

[137] Svenbro, J., 'Archaic and Classical Greece', p. 38.
[138] Idem., p. 44.
[139] Idem., p. 40.
[140] Idem., p. 45.

dynamic entities – full of meanings, sounds, melody, stress, intonation, and rhythms – ready to be uncovered layer by layer through examination and dialogue.'[141] The written word, which Socrates considered as 'dead', lacked these properties. Its tangibility rendered it inflexible and mute, preventing it from being used in the dynamic dialogue that Socrates regarded as indispensable on the path to true knowledge.

Another example of the vocalisation of text can be found in the theatre of Greek Antiquity. The actors had memorised their texts. Therefore, in contrast with reading aloud, the text was not visibly present in the theatre. As Svenbro suggests, 'their voices [of the actors] substituted for the written text.'[142] They practised 'vocal writing' and, when listening, the audience practised 'vocal reading'.

Reading was also principally practised aloud in the Roman Empire, with the reader intervening between the text and the listeners[143]. It was almost a performance, with the reader using his voice, gestures and the expression of his entire upper body to emphasise the words. Text was considered neutral and unfixed as well, the reader had the responsibility and privilege of interpreting the text and emphasising the passages that he believed to be interesting.

In the second century AD, the introduction of the codex marked a change in the physical aspects of reading, a change that could not be handled in the same way as the commonly used scroll. Readers that were used to scrolls could not handle the codex in the same way. A smaller codex was easy to handle with just one hand, whereas a large and heavy codex containing vast amounts of text could not be held at all. The smaller codex meant that the reader had one hand free to write and make annotations in the margins. Conversely, the heavier codex hindered continued reading and was mostly used for consultation and citation, causing the reader to flip through the pages using page numbers and other 'various distinctive devices'[144] as described in 2.1.3.

In the early Middle Ages, the written word slowly gained its independence from the spoken word[145]. Writings were now considered as 'the medium [that] transmitted the authorities of the [orthodox traditions of the Church]' and no longer as just visual representations of their spoken equivalent. Nevertheless, the practice of oral reading remained in place throughout the centuries that followed, practised mainly by the rural population and lower classes of society. Incapable of reading or reading fluently, they listened to religious texts read aloud in community or family settings.[146]

It appears that unorganised and unreflective reading (see 2.1.1) dominated the reading

141 Wolf, M., *Proust and the Squid*, p. 73.
142 Svenbro, J., 'Archaic and Classical Greece', p. 53.
143 Cavallo, G., 'Between *Volumen* and Codex', p. 73.
144 Idem., p. 87-8.
145 Parkes, M.B., 'Reading, Copying and Interpreting a Text in the Early Middle Ages', p. 93.
146 Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 290.

practices of a great part of the reading public well into the eighteenth century. Since it was often done aloud, this form of reading was considerably physical, or, in the words of Wittmann: 'the body [functioned] as a medium of textual experience.'[147] The rise of the novel, the periodical and other fictional and/or cheap reading matter prompted a different, more private type of reading (see 2.1.5.), resulting in a change of the role played by the body. To achieve narrative immersion, the body should be in a state of quiet relaxation[148].

As reading aloud was often done while standing up, it was considered healthy exercise that should be practised 'as a substitute for the pleasures and the benefits of a walk in the open air.'[149] The shift from reading aloud while standing to immersive reading while sitting or lying down did not meet with wholehearted approval. Except for his hands, the whole body of the reader was now at rest. It was feared that this would cause 'limpness, bloatedness and constipation of the intestines, in a word hypochondria […] as well as conditions of langour [sic] and weakness in the whole body.'[150]

In the centuries that followed, the practices of silent reading and reading aloud continued to co-exist. Silent reading has only prevailed just recently, making it harder to detach the activity of reading from the idea of tangible text.

2.1.5 Immersion

Chapter one concluded with a distinction between two main types of immersion: attentive, studious immersion and imaginary, emotional immersion. A strong relationship between the type of immersion and the type of text is reported in the literature reviewed. This section will provide a historical overview of several forms of immersion. Subsequently, it focuses on attentive, studious immersion, since this type of immersion generally presents itself when engaging in the practice of scholarly reading.

The immersion theme recurs throughout the millennial history of writing and seems to be indissolubly connected with the processing of texts. As mentioned before, the level of immersion is affected by both the form of a text and by the way it is read. Readers were aware of this right from the early phases of alphabetic reading and writing and developed methods designed to influence the level of immersion.

The variety of words in Ancient Greek for 'reading' (see 2.1.4.) demonstrates that they distinguished between several types of reading not long after the introduction of the practices of reading and writing. As stated above (2.1.2.), Ancient Greek society was mainly oral and reading was often practised aloud. This is indicated by verbs meaning 'distributing

147 Idem., p. 298.
148 Ibidem.
149 Bergk, J.A., *Die Kunst, Bücher zu lesen*, p. 69 (quoted in Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 298).
150 Bauer, K.G., *Über die Mittel, dem Geschlechtstrieb eine unschädliche Richtung zu geben*, p. 190 (quoted in Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 301).

the content of the written manner'[151], which implies the vocalisation of text. Moreover, the Ancient Greeks used verbs that indicate the rereading of texts. They distinguished between superficial and attentive reading, the latter referring to the reading of a text from the beginning until the end in a studious manner.

As illustrated previously in 2.1.1., 2.1.2 and 2.1.3., the reading practices of the scholastic age differed from that of the monastic age, in which monks were deeply immersed in biblical texts, which they read and reread attentively in order to 'lock them in their memory'. With the rise of the universities in the twelfth century, emphasis shifted from attentive, studious reading to reading just enough of a text to be able to discuss it. Instead of acquiring in-depth knowledge, it became more important to know *about* as many works as possible. The abundant use of florilegia and anthologies is a good illustration of this non-immersive, superficial reading practice. As Hamesse explains, the encyclopaedic point of view replaced reading and meditation at every level[152].

In the late Middle Ages, the relationship between the author and the reader steadily gained significance and became more personal. Authors began to compose their texts in a personal way by addressing the reader. The presence of a reader required them to compose their text in a more understandable way. Moreover, the introduction of illustrative diagrams and tables alongside the text is illustrative of the private nature of the relationship between the reader and the text and shows signs of a multimedia reading experience:

'The complex structure of the written page of a fourteenth-century scholastic text presupposed a reader who read only with his eyes [not with his voice], going swiftly from objection to response, from table of contents to the text, from diagram to the text, and from the text to the gloss and its corrections.'[153]

In later centuries, the use of miniatures and other visual aids increased significantly in vernacular texts, '[presupposing] the reader's ability to decode text and image simultaneously.'[154] These multimedia works made it more difficult for the reader to become immersed in a text.

Reflections on the reading behaviour of scholars from the sixteenth century onwards show that they distinguished different forms of reading for different texts. Francis Bacon, for instance, suggested that 'some books are to be read only in parts; others to be read, but not curiously; and some few to be read wholly, and with diligence and attention.'[155] According to the Humanists, the preferred reading strategy differs per book[156]. This leads us to the same conclusion as Jean-François Gilmont in his essay 'Protestant Reformations and

151 Cavallo, G., and R. Chartier, *A History of Reading in the West*, p. 8.
152 Hamesse, J., 'The scholastic Model of Reading', p. 110.
153 Saenger, P., 'Reading in the Later Middle Ages', p. 134.
154Idem., p. 142-5.
155 Quoted in Blair, A., 'Reading Strategies for Coping with Information Overload 1550-1700', p. 13.
156 Grafton, A., 'The Humanist as Reader', in: Cavallo, G. and R. Chartier, *A History of Reading in the West* (Oxford: Blackwell Publishing, 1999), pp. 179-210, p. 183.

Reading': 'the most plausible hypothesis is that reading practices continued to overlap.'[157]

Besides the often moralistic and rational literature of the Enlightenment, the eighteenth and nineteenth centuries saw increasing popularity for a new kind of book: the novel. This new type of book was accompanied by a new type of immersive reading, characterised by imaginary, emotional immersion. According to Wittmann, this was of an unprecedented intensity. The novels were devoured by the reading public, which started to include more and more women, children and workers, who could not wait to immerse themselves in the fictional world of imagination, concealed behind the pages of a book. The growing appetite for reading matter, which Wittmann referred to as a 'reading mania'[158], spread throughout society, infecting both the upper and the lower classes.

Wittmann notes protests from the intellectual and social elite, who considered this new reading behaviour cause for concern. The new, intense immersive reading was called a 'rapid, inattentive, almost unconscious kind of reading habit', resembling a 'narcotic' that would 'destroy the autonomy of reason and the desire for emancipation' because it 'released the reader from concrete sensory perception and the world of experience, at the risk of total disillusionment, even nihilism.'[159]

The novel was seen as 'the antithesis of practical and instructive literature. It demanded little, and its sole purpose was to amuse readers with time on their hands.'[160] Clearly, the rational thinkers of the Enlightenment did not consider this appropriate literature, but in the nineteenth century, the novel gained some esteem without changing appearances. Nevertheless, the novel was still considered a risk, particularly for the weak female sex and the easily influenced working class (see 2.1.2). In Sanditon, Jane Austen's description of the deluded Sir Edward, who derived his moral standards entirely from sensational novels, clearly illustrates this point[161].

According to a stereotype, women often read light, entertaining literature like magazines, periodicals and newspapers. Women of the lower classes often did not have the chance to read for a longer, continuous period of time because of their never ceasing (house) duties, which led to a fragmented reading behaviour. In the twentieth century, their reading matter was adjusted to reflect this fragmented reading behaviour by introducing paragraphs and illustrations to break up the text[162].

The newly appreciated novel was considered perfect reading matter for women of the middle and upper classes, who did have the time to read. The novel was adapted to a stereotypical feminine nature, which was considered to be full of imagination and

157 Gilmont, J.-F., 'Protestant Reformations and Reading', p. 225.
158 Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 300.
159 Idem., p. 305.
160 Lyons, M., 'New Readers in the Nineteenth Century', p. 319.
161 Austen, J., *Sanditon* (Middlesex: Penguin Books, 1974), p. 191.
162 Lyons, M., 'New Readers in the Nineteenth Century', p. 318.

emotions. Following this platitude, the reading of many of these entertaining and emotional works was said to have a bad influence on the sensitive state of the female mind. However, Martin Lyons considers the nineteenth-century female reader as a 'pioneer of the modern notions of [the] privacy and intimacy'[163] of reading, because of this deep immersion in romantic novels.

Other concerns from the nineteenth-century authorities were directed towards the working class, which, as stated above, also seemed to have a taste for light, superficial reading. However, in obedience to the Enlightenment ideals, a large group of working-class readers were aiming for the edifying properties of literature – in some cases provided by their superiors, hoping to 'soften social tensions'.[164] They displayed a studious and attentive reading behaviour, determined to overcome the intellectual handicap imposed on them by birth (see 2.1.1.).

In the decades that followed, the dominant reading practices continued to vary between – approximately – attentive, studious reading and imaginary, emotional immersion for entertainment purposes. This can be illustrated briefly by a quote from 1961 by the writer Eugenio Montale, who identifies these different reading practices as study practices and consumerist practices:

'In particular, fewer and fewer books are read, while the number of readers of periodicals, newspapers, reviews, manifests posted on walls and other printed material is fairly high. But the readers of the fleeting daily publications do not read: they see, they look. They look with comic strip attention even when they really know how to read: they look and they throw away."[165]

2.2 Conclusion

As stated in the Introduction, the categories covered in this chapter are based on an analysis of the theories on digital reading discussed in Chapter one. Chapter one concluded with five themes that were present in these theories – to a greater or lesser extent. However, this is not a clear-cut division, for there is a certain overlap between these themes.

For instance, the monastic reading of a biblical text – studying it attentively and softly murmuring the words aloud so as to remember them better – is cited in both 2.1.1 and 2.1.5. Moreover, Socrates' fears about alphabetic writing related not only to the deterioration of his students' memories (2.1.1.), but also their ability to recognise that a written word does not necessarily represent the truth (2.1.2.).

The object of this chapter was to place the themes from Chapter one in a historical

163 Idem., p. 324.
164 Idem., p. 334.
165 Montale, E., 'I libri nello scaffale', in: *Auto-da-fé: Cronache in due tempi*, p. 96 (quoted in Petrucci, A., 'Reading to Read: A Future for Reading', p. 359.

perspective. The results of this comparison will be discussed in Chapter three. The following provides a brief overview of the findings of this chapter.

2.2.1 Reflection

It can be established that reading practices will vary – and have always varied – depending on the reading matter. Reports from different reading practices date back as early as the fifth century BC, when the function applicable for a book developed from a way of preserving a text to it being used for individual reading as well[166]. This resulted in various types of reading, from the attentive rereading of texts to superficial reading or the 'distribution' of content by reading a text aloud (see 2.1.5).

Invariably, when a reader wanted to memorise a text, he read it attentively, occasionally reread it and, although silent reading was often practised, read it aloud in order to memorise it better. Throughout the centuries, readers found that a text that they had studied attentively allowed them to regard it from a distance, to approach it critically and to reflect upon what was written. This detracted little from the attraction of more temporary texts like pamphlets or, in a later age, newspapers, that demanded nothing more of the reader than a volatile scanning of interesting parts soon to be forgotten.

The terminology used to describe the different reading styles is only a formality. In any case, it can be established that a text can be used for an infinite number of purposes and, depending on the purpose, will be read in different ways. It is clear that, in order to memorise it, the text should be processed in a certain way that requires attentive, concentrated reading and repetition. When the abundance of texts made it impossible for scholars to study them closely in their entirety, they developed instruments and tools that allowed them to process only the parts of texts that they considered relevant (see 2.1.2. and 2.1.3.).

2.2.2 Information and Knowledge

Quality versus Quantity

One of the many features imputed to the written word was that it could easily be confused with the truth and that information could easily be mistaken for knowledge. Once written down, readers would be convinced of their authority and read them without a critical thought. In contrast with the ancient oral society, where a speaker was always present to clarify his words, writings could circulate beyond the author's control. He was not available to explain his words or place them in context.

To be able to cope with the information overload, readers utilised various mnemonic devices. To facilitate their use of the codex, readers in the Roman Empire soon invented page numbering, headlines, titles and indexes. They varied writing styles, colours and fonts

[166] Cavallo, G., and R. Chartier, *A History of Reading in the West*, p. 7

to provide a better overview of the text. In later ages, readers used anthologies or *florilegia* – often composed by a clergyman who carefully selected only approved passages – which allowed them to limit the amount of works they had to read.

Scholars used bibliographies and encyclopaedias for the same reason. Because they lacked the time to read a book from cover to cover, scholars developed selective reading behaviour, browsing through works and scanning pages for interesting parts. In line with Socrates' fears, this reading behaviour made it more difficult for readers to achieve 'deep contact with the text'[167] and reflect upon the author's argumentation.

Access

In the past, authorities did not generally consider that readers would be able to see through these treacherous features of the written word. Socrates was convinced of the necessity to instruct every reader on the dangers of literacy. Later authorities preferred strict control over education and considered it best to strictly control access to literature that did not agree with the dominant doctrine of the time. They believed that allowing the reader to freely explore the abundance of information offered when he clearly lacked the intellectual ability needed to interpret it correctly would only lead to unnecessary doubt.

2.2.3 Simulations and Delegation

The technology of reading and writing can be considered as an imitation of the functioning of the human brain. It allows readers to put their thoughts into words, thereby facilitating memorisation and reflection, processes that were exclusively practised orally until Greek Antiquity. In the early days of the alphabet in particular, there were some doubts about delegating the processes that were originally inherent to the human brain to an external technology.

As the practice of reading continued to spread, readers invented other instruments to facilitate the activity of reading. The process of memorisation, for instance, was eased by mnemonic devices such as highlighting (or rubricating), annotating and glossaries. The process of scanning or browsing through texts was facilitated by indexes, summaries and tables. The invention of anthologies and *florilegia* made it unnecessary to read every work available.

However, fears that the delegation of certain brain functions to a technology would make them redundant appeared to be unjust. The technology of reading and writing did not replace certain processes, but simplified them. Readers adapted technology and used it as they saw fit. Memorisation, knowledge acquisition and reflection on texts remained the main objectives of reading throughout the various centuries of reading history.

[167] Hamesse, J., 'The Scholastic Model of Reading', p. 107

2.2.4 Intangibility and Volatility

The invention of writing gave a fixed form to text. In ancient oral societies, texts were memorised and spread orally; text was not static, but dynamic. It was relatively unheard of to have a text with a fixed meaning, for it could not exist without the voice of the reader. The tangibility of the written word was considered a disadvantageous quality, for it rendered a word inflexible and mute, making it impossible to reflect on it.

For centuries after the introduction of the alphabet, reading was mostly practised orally. The reader, who read the text aloud, was free to twist it as he pleased. When vocalising a text, he functioned as a medium of distribution. In the early Middle Ages, the attitude that readers had towards texts changed irreversibly: text was not longer considered unfixed and neutral, waiting for a reader to give it an interpretation, but was fixed with a determined meaning. Written words gained authority and no longer needed the reader for distribution.

In recent centuries, the tangibility of the written word has lost any negative connotation it might once have had. It is said to facilitate the memorisation process, as the reader is now able to hold a text when reading it. He can reflect on the written word, write in the margins and highlight important passages. Added to this, the tangibility of a text has become one of the chief conditions for immersion (see 1.1.5. and 2.1.5.). When putting his thoughts down on paper, a reader can literally look at them from a distance. Because modern readers have entrusted the memorisation process to the technology of alphabetic writing, they need texts to have a fixed, tangible form.

2.2.5 Immersion

A reader can immerse himself in a text on different levels, depending on his reading behaviour and on his reading matter. Light, entertaining reading matter like pamphlets, periodicals and newspapers are usually read in a superficial, inattentive manner. Attentive, studious reading behaviour is often displayed where scholarly reading is concerned, when a reader has the conscious objective of memorising the text. Examples of the latter can be found in the early Middle Ages, when monks were bent over biblical texts for hours, and in the nineteenth century, when workers from the lower classes studied literature hoping to edify themselves.

Scholarly reading, characterised by fragmented, discontinuous reading behaviour, presents itself throughout the history of reading. For instance, this type of reading was practised by twelfth-century university students, who had neither the time nor the intellectual ability to engross themselves in the protracted argumentation of the authors they were supposed to be reading.

However, in the nineteenth century, a new type of immersion emerged. This type of immersion was not limited to the attentive studying of a text, with the conscious objective of memorising it. The popular nineteenth-century novel is a good example of this other, more subconscious and emotional kind of immersion. Novels were written for

entertainment purposes and swept their readers away with exciting and romantic narratives.

One of the most important merits of conscious immersive reading is that it facilitates the memorisation process. Throughout history, readers have been aware of this and tried to stimulate immersion. Emotional immersion, the kind caused by novels, needed little stimulation, but the reader had far more difficulty trying to maintain a mode of studious, attentive reading for other text types. To help him concentrate, he used mnemonic devices such as annotation and highlighting, as discussed in 1.1.3, 2.1.3 and 2.2.3.

3 Minerva's Owl

> Not only do the old media continue in existence but often they continue in an enhanced rather than depleted form. Consider the way that, in modern times, he printed codex has encountered the challenge of the phonograph, the silent cinema, the radio, the talkies, technicolour, television, colour television, the home video, the personal computer, the internet and now the e-book – all of which were announced as about to bring it to extinction- and emerged from each encounter with overall book production still higher than before.
>
> *H. Love, Early Modern Print Culture*

> Will readers become less tolerant of extended arguments and reasoning? Will all texts disintegrate into fragments-a chopped up hash of language-with texts of 75-words-or-less dominating the presentation of information? Will we stop thinking of reading as an extended, engrossing transaction with a text and its author and think of reading, instead, as gleaning or grazing across a range of text-bits?
>
> *S. T. Bernhardt, The Shape of Text to Come*

> As the publishing industry wobbles and Kindle sales jump, book romanticists cry themselves to sleep. But really, what are we shedding tears over?
>
> *C. Mod, Books in the Age of the iPad*

3.0 Introduction

Chapter one reviewed a number of articles on digital reading (1.1.1. to 1.1.5.), which led to the identification of five themes (1.2.1. to 1.2.5.). In Chapter two, these themes were placed in a historical context (2.1.1. to 2.1.5.). Now, the present chapter will discuss the findings outlined in Chapter two, with the object of verifying the paradigms that can be established for a discussion of digital reading. In other words, historical precedent of certain developments in our reading behaviour may indicate the extent to which the technological properties of the digital medium need to be taken into account in the discussion of digital reading.

Consequently, it should be possible to establish a more precise framework for a discussion of the digital medium. The debate on the impact of digital reading will be more productive and effective if it is aimed at the direct causes of the changes in our reading behaviour.

3.1 Themes

3.1.1 Reflection and Memory

It seems logical to associate Socrates' protests against alphabetic writing with contemporary protests against the digital medium as a reading device. The objections raised by both parties relate to the introduction of a new medium that appears to completely change the textual experience. Added to this, Socrates, Giffard and Wolf share a similar concern: the

apparent loss of the ability to memorise texts and, directly linked to this, the ability to reflect on these texts.

A thorough reflection on the long history of reading shows that there has indeed been a significant loss in mnemonic ability. Unlike Socrates' contemporaries, the modern reader is not able to memorise large quantities of texts, nor does he need to. We have learned to place our trust in the preserving qualities of the written word. However, the memorisation of texts continued to be important for centuries, facilitated by the technology of the alphabet. Today, the alphabet is used as a substitute for memorisation.

Socrates' method was based approximately on the assumption that true knowledge was gained by discussing and refining concepts with competent speakers. According to his method, debatable concepts were unravelled through dialogue, giving participants the opportunity to reflect on these notions. Socrates anticipated that, with the rise of alphabetic writing, this valuable method of reflection through dialogue would become unnecessary and would eventually disappear.

However, just as the practice of writing and reading eased the process of memorisation, but did not make it redundant, it also facilitated reflection. Maryanne Wolf demonstrates that the activity of learning to read reorganises our brain by adding new connections that benefit the development of intellectual skills. Moreover, fluent reading gives the reader time to reflect on the written word, to consider its meaning and to form his own opinion. In this sense, reading can be interpreted as a substitute for Socrates' dialectical method, the dialectical process that now occurs inside a reader's brain.

In her work on the science of the reading brain, Maryanne Wolf confesses that she can really relate to the concerns that Socrates had when a new medium was introduced in society. The difference between them is that she promotes the use of the same technology he protested so passionately against. In her defence, Wolf states that had Socrates lived for a few decades more, he would have changed his opinion on the impact of literacy. However, she seems unaware of the irony of this statement. It implies that she might think differently about the During the long history of reading, both memory and reflection have remained important objectives of this activity, achieved through the attentive and studious reading of a text. Nevertheless, when it was not the intention of the reader to gain an in-depth knowledge of the text, as might be the case with light, entertaining reading matter, he displayed a more superficial and cursory reading behaviour that was considerably less reflective.

This inattentive, scanning reading behaviour could, for example, be found in the eighteenth-century reader. According to Wittman, this reader had 'an eagerness to consume new and varied reading materials for information, and for private entertainment in

particular.'[168] This restless behaviour in relation to new information is comparable to the attitude of digital readers that surf the web, skipping from website to website.

It is also interesting to consider the positions taken on the information overload that new media are said to cause. An apprehensive attitude to this development can be signalled in the intellectual elite and the state authorities of both past and present. Where the eighteenth-century 'reading mania' was concerned,[169] one notes how the concerns of the time correspond with current apprehension about the impact of a new type of reading. This statement will be discussed in more detail in 3.1.2.

These findings suggest that the inattentive, casual reading of text is a recurring phenomenon, related more to the type of reading matter than to the medium used. In the history of reading, readers varied their reading behaviour between the attentive, studious reading of texts they wished to memorise and the inattentive, cursory reading of texts they read purely for entertainment.

As mentioned in the literature reviews, digital readers often display superficial and non-reflexive reading behaviour too, focusing on finding new information to rekindle their rapidly diminishing attention. However, a critical look at the history of reading reveals that this type of reading behaviour is not inherent to the digital medium as much as to the specific type of light, entertaining reading matter that can often be found on the Internet.

In his study, Terje Hillesund reports that digital readers who do want to read a longer digital text that demands studious, attentive reading often have difficulties with this. On the other hand, past readers were also familiar with the difficulties of concentrating on a scholarly text. They used specific techniques to help them focus, such as annotation and marking, highlighting and summarising. The intangibility of digital text, which will be discussed in more detail in 3.1.4., hinders the use of these techniques, and their digital equivalents are not sufficient at the current time.

As stated in the introduction to this thesis, the complexity of this subject cannot be fathomed by means of a simple comparison between print and the digital medium. Instead, it can be concluded hat readers have struggled with a continuous form of studious, attentive reading throughout history, regardless of the medium they used. It is probable, therefore, that modern problems with continuous attentive digital reading will decline once the digital equivalents of mnemonic devices work properly.

[168] Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 285
[169] Idem., p. 295

3.1.2 Information and Knowledge

Quality versus Quantity
Research shows[170] that concerns relating to the reader's ability to deal with an information overload and to distinguish data from information date right back to the Greek Antiquity. Throughout the centuries of literacy, philosophers, intellectuals and authorities (both religious and secular) insinuated that the average reader would have trouble filtering the data he absorbed in what were apparently huge quantities.

With the increase in literary production and the increased spread of literacy, new concerns emerged in relation to the impact of the abundance of information. It was feared that readers would search frantically for new information, browsing through reading matter without actually reading it, without ever reaching a point of satisfaction.

Despite some variation between authorities, it would seem that the general opinion has always regarded it to be necessary for there to be a 'gate-keeper' between the reading nation and the information flood. Over the centuries, the form taken by this gate-keeper shifted from strict religious and cultural censorship to the existence of journalists, editors and publishing houses. Today, we have a more or less secure system that ensures that information is authenticated before it reaches the public.

The variety of gate-keepers makes it possible to conclude that the public is still not considered capable of filtering a direct flow of information. Concerns similar to those expressed by Socrates, Luther and Diderot now haunt the mothers who see their offspring spending hours behind a computer, seemingly absorbing every bit of information they encounter. On the internet, the reader has at last gained the power that has eluded him. The traditional methods of information authentication do not apply and the reader becomes both the author and editor of the texts he reads.

One implication of this newly found responsibility is the possibility for the reader to experience the well-known concept of information overload. The primary function of the modern gate-keeper would seem to be to prevent this overload, rather than to censor information on the basis of religious or political convictions. In general, therefore, it would seem that the reader is now free to choose the extent to which his information is filtered and by whom.

Access
It is a well-known, wide-spread phenomenon for certain groups in society - often those in power - , to consider it best to control the access that people have to information.

[170] See for example Svenbro, J., 'Archaical and Classical Greece'; Saenger, P., 'Reading in the Later Middle Ages'; Gilmont, J-.F., 'Protestant Reformings and Reading'; Chartier, R., 'Reading Matter and Popular Reading: From the Renaissance to the Seventeenth Century' in: Cavallo, G. and R. Chartier, *A History of Reading in the West*, (Oxford: Blackwell Publishing, 1999), pp. 269-81.

Although their reasons for doing this can be questioned, they often motivate their decisions by stating that the man on the street could not handle the responsibility of selecting his information. He would instantly believe in the authority of the written word, whether this agreed with the dominant doctrine or not. Absorbing so much unfiltered information would lead him to believe he understood it and confuse information with knowledge.

In the eighteenth century, both the ruling classes and the Enlightenment thinkers considered the ongoing growth of the reading mania to be an undesirable development. The Enlightenment thinkers, who had previously promoted the spread of literacy, did not regard the excessive reading of novels, chapbooks and other cheap reading material as a 'disciplined and rational' route to the intellectual emancipation of the masses[171]. The Church feared that 'reading would lead to a general process of secularization and de-Christianization.'[172]

Throughout the centuries in which people have read, church and state authorities, progressive thinkers and intellectual elitist groups have all tried to control and influence the flow of information to the reading public, either by restricting access or by providing approved reading matter that they believed would have a more desirable influence.

Again, protesters claim that online publications have the appearance of actual knowledge, tricking readers into believing that they represent the truth. Because it does not currently appear to be feasible to construct a digital gate-keeper to guard the information offered on the Internet and the use of censorship in Western societies, authorities today are inclined to support the suggestion once made by Socrates: educate the reader by teaching him how to distinguish data from information and information from knowledge (see 2.1.2.2.). The same suggestion has also been made by Wolf, Giffard and Murray.

The results of this study show that the digital medium provides us with a liberty to which we are not accustomed. In the past, any information that could reach the reading public was verified and controlled by various institutions that functioned as gate-keepers. Information that escaped this control was regarded suspiciously, for it could confuse the reader. It is correct that the digital medium requires a new method for the filtering of information and, until this has been is established, some caution is advisable. Moreover, whereas publishers were prevented from publishing everything they wanted to publish in the past because of financial reasons, the Internet is now presenting them with the opportunity to publish information at no cost.

In his article '*De onmogelijke spagaat van de nieuwe media*', Melle van der Berg presents a clear conclusion of what should be expected of the role played by the modern reader in the new

[171] Wittmann, R., 'Was there a Reading Revolution at the End of the Eighteenth Century?', p. 300
[172] Idem., p. 295

media landscape: 'he needs to be more independent and more critical. He should take the news coverage with a grain of salt, and should approach the sources used from a critical point of view.'[173]

However, a few doubts are in order about the willingness of the reader to filter all information himself. A reader may prefer for his information to be filtered by a certain, trusted gate-keeper – varying from newspapers to RSS feeds and blogs – that helps him deal with the abundance of information on offer. It would seem that the added value of the information available via the digital medium, i.e. the Internet, is that the reader is now free to choose for himself.

The voices of protest against public access to unlimited information have sounded for centuries. Murray concludes that 'just as those with power feared individual access to the new literacy technologies of the past, so too, do they today.'[174] However, for the first time, it would seem that authorities today have little other option than to accept this 'democratisation of knowledge'.[175] For this reason, they seem inclined to teach readers to filter the information themselves, instead of doing it for them. If this is the case, the long-awaited emancipation of the reader could actually be a revolutionary effect of the digital medium.

3.1.3 Simulation and Delegation

As repeatedly mentioned in this thesis, a strong relationship exists between the five themes selected. Because of this, a certain overlap was inevitable. As this section will demonstrate, the theme *Simulation and Delegation* in particular is closely linked to all of the other themes.

The results of this study show that all technology invented by humans is an imitation of certain brain functions and designed specifically to simplify or enhance the use of these functions. When delegating certain tasks to technology, the individual is given the time and space to enhance his thinking. In the literature review, this has been illustrated by Wolf, who suggests that by using the technology of alphabet, mankind will have more time to reflect and form new, original thoughts.

The techniques used to facilitate the activity of reading, such as annotation, highlighting and summarising, have their equivalents in the digital medium. They could function as mnemonic devices, reinforcing the memorisation of a text by helping the reader to focus on and immerse himself in the text. On the other hand, they could also speed up the reading process by offering indexes, tables of overview and summaries.

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[173] Berg, M. van den and R. Kievit, *De onmogelijke spagaat van de nieuwe media*, Joop.nl, http://www.joop.nl/opinies/detail/artikel/de_onmogelijke_spagaat_van_de_nieuwe_media/ (July 30th, 2010)
[174] Murray, D., 'Changing Technologies, Changing Literacy Communities?', p. 52.
[175] Weel, A. van der, *Changing our Textual Minds: Towards a Digital Order of Knowledge*, chapter 5, p. 22.

Understandably, the outsourcing of a process that has been inherent to the human brain for so long is a difficult step. Numerous science fiction works are based on the fear of technology taking control over mankind, after the former was given more and more tasks to do. Socrates feared the loss of memory as soon as the process of memorisation was delegated to writing. Wolf and Giffard fear that a similar outcome will apply when a large part of the reading process is delegated to the digital medium. For instance, in his well-known article 'Is Google Making Us Stupid', Nicolas Carr refers to the supercomputer HAL in Kubrick's *2001:A Space Odyssey* when suggesting that the technology of the Internet has a negative impact on his brain[176].

The fears mentioned above were principally based on the assumption that the delegation of brain function to technology would make the former redundant. Digital reading is said to make the reader lazier, enabling him to skip essential steps in the process of reflection; the same claim was levelled against reading from print in the past. It is safe to conclude that the fear of the impact that a new and unfamiliar technology would have was the main cause for concern in both cases. However, as a review of the history of reading demonstrates, techno-deterministic warnings cannot prevent the introduction of a new technology. This statement is most strongly confirmed by Murray, who emphasises that a techno-deterministic attitude will only prevent educators and other authorities from critically examining the new technology and deciding upon the merits of its use[177].

The techniques of annotation, (book-)marking and indexing offered by the digital medium are the digital variants of their equivalents in print, for they share the same function in relation to reading. These techniques are created by readers with the object of easing and speeding up the reading process. As with all techniques, the user should be aware that they are mere imitations of the functioning of his brain, designed to ease certain processes but not to take them over. When he appreciates their imperfections, he can use them to his full advantage.

3.1.4 Intangibility and Volatility

Little has been found in the history of reading on the question of intangibility of text, for the simple reason that alphabetic writing requires a tablet, scroll, parchment or paper sheet to write on, which immediately renders text tangible. Therefore, it would be simple to conclude that the intangibility of digital text is unprecedented in history and, as such, the first theme of this thesis is completely inherent to the digital medium.

The historical perspective of Chapter two considered the (lack of) textual experience of oral readers. The volatility and dynamism of spoken text appears similar to that of digital text. However, this comparison does not hold true, for although they are both

176 Carr, N., 'Is Google Making Us Stupid?', in: *The Atlantic*, http://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/6868/, (July 30th, 2010)
177 Murray, D., 'Changing Technologies, Changing Literacy Communities?', p. 53.

communication systems, spoken language is not text[178]. The most significant and importance difference between spoken language and written text is that the latter involves the use of external tools – from clay tablets to paper, and from quills to ball pens – and, as such, can be considered a technology, unlike spoken language, which is inherent to the human body[179].

The history of reading shows how society shifted from a preference for the flexible qualities of spoken text, to a mistrusting of anything that was not written down 'in black and white'. Used as we are to the preserving properties of print, the volatility of digital text makes us nervous. Unlike the inhabitants of ancient oral societies, we cannot put our trust in words that are easily susceptible to change.

A review of the literature used in Chapter one demonstrates that concerns in relation to the intangibility of digital text relate to its impact on individual readers for the greatest part. Research shows that, over the centuries, readers have acquired specific techniques to improve the activity of reading (see 3.1.3.).

Although the digital medium provides digital equivalents of these techniques, they do not function quite as well (yet). The digital medium creates a distance between the text and the reader, who is obliged to use sensory devices like the mouse and the keyboard to navigate through text, instead of just his fingers holding a pen. It is suggested that this small but significant difference is the principal reason why modern readers have difficulties with digital text.

One implication of this is the possibility that the intangibility and volatility of digital text are indeed a consequence of the digital medium. Although a certain historical precedent can be found in the position of the spoken word in ancient oral societies and, later, in relation to oral reading, this specific type of intangibility could never disable immersion in or reflection on the spoken word. It appears that the intangibility of text has never been an issue before. Therefore, this should be taken into consideration as a paradigm in the present discussion on the impact of digital reading.

3.1.5 Immersion

Over the centuries, readers have always been aware of the importance of becoming immersed in a text, as it enabled them to process the text faster and better. The discovery that a difference in types of text leads to a difference in the level of immersion resulted in the use of specific techniques to enhance this immersion, some of which techniques are discussed in 3.1.1.

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[178] Weel, A. van der, *Changing our Textual Minds: Towards a Digital Order of Knowledge*, chapter 5, p. 5-6; Ong, W., 'Orality and Literacy', in Finkelstein, D. and A. McCleery, *The Book History Reader* (Oxon: Routledge, 2006) pp. 134-46, p. 136.
[179] Weel, A. van der, *Changing our Textual Minds: Towards a Digital Order of Knowledge*, chapter 5, p. 6.

Because the concept of immersion has been present throughout our long relationship with text, it would seem obvious to conclude that this theme is not inherent to the digital medium and should not be part of future discussions on the impact of digital reading. However, as is clearly demonstrated above in 3.1.4., the possibility to immerse in text is closely related to the tangibility of the text.

A review of the literature demonstrates that there are approximately two types of immersion: attentive, studious immersion and imaginary, emotional immersion. The former is a conscious form of immersion, often aided by the use of several mnemonic techniques that enhance the reader's concentration; the latter is a more subconscious form, as it requires little more than a captivating narrative.

As is suggested by Mangen, imaginary, emotional immersion is closely connected to printed text. In other words, the embodiment relationship that a reader has with a book implies that he is able to see through this medium. The moment he starts to read, the book becomes a transparent window and the reader is transported to the world behind it. Where the digital medium is concerned, the glass of the window is opaque. The presence of the digital medium is experienced as 'disturbing' and disables complete immersion.

However, the studious kind of immersion should be interpreted with more caution. History shows that studious, attentive reading behaviour is often considered more difficult to maintain and is, therefore, supported by the use of the aforementioned techniques. As illustrated above, the digital medium does have digital equivalents of these techniques. Moreover, the scanning and fragmented type of reading behaviour often displayed by scholars can be signalled as early as the twelfth century.

However, if we were to base ourselves on the research conducted by Terje Hillesund, it seems probable that the digital medium also hinders attentive, studious immersion. He demonstrates that most scholars tend to print out digital texts in order to highlight, annotate and mark them. Since the scholars participating are adults who have grown up with printed texts, we should be cautious when extrapolating these findings to all scholarly readers. However, the findings obtained by Hillesund do suggest that the digital mnemonic techniques are not as effective as their material equivalents. Again, this is because of the opacity of the digital medium.

In conclusion, it can be stated that readers have had difficulties with attentive, studious immersion throughout the history of reading. Unlike imaginary, emotional immersion – which is said to be more difficult to maintain on the digital medium – attentive, studious immersion does not appear to have any considerable relation the medium used. However, over the centuries ,readers have developed specific methods to stimulate a state of attentive, studious immersion by using mnemonic techniques like highlighting and annotating.

Although the digital medium is equipped with the digital equivalents of these techniques, research shows that they are not functioning properly yet, as a result of which scholars often take refuge in print outs. Today, the technologies we use for textual communication are changing from analogue to digital. This implies that some of our reading practices, now adapted to the printed medium, will need to change as well. Because it was an issue in the past, we can assume that (the lack of) attentive, studious immersion may become an issue again. Therefore, this point should be part of the discussion on digital reading.

Conclusion

The subject of digital reading and its impact on modern reading behaviour is a fascinating topic that touches us all. In past decades, many scholars have noticed significant changes in our reading behaviour[180]. We find ourselves in a transitional phase at the present time, for although our society is still print-based, digital reading is taking up an increasing part of our daily reading practices. Because this subject affects all of us, every reader is automatically an authority in the field, which results in an abundance of speculations on the possible impact the digital medium might have on our reading behaviour.

Most of these speculative theories are interesting to consider and some even present valid arguments in favour of or against the case of digital reading. However, some of them would appear to have some difficulty resisting the temptation of wild and unfounded speculations. These may demonstrate a rather techno-deterministic point of view, incorporating the unnerving idea that a machine – in this case, the digital medium – might take over substantial brain functions in their argumentation. Conversely, others embrace the digital medium as a technology that will bring about revolutionary changes.

Whether they are positive, negative or neutral, it is difficult to estimate the value of the present theories on digital reading, as only time will tell if they are correct. However, there is a good reason for all the speculation; having some idea about what the future will hold, gives us time to anticipate possible developments and use them to our full advantage. Because of this, it is important for us not to lose ourselves in speculation, but to ensure that the discussion on digital reading and its impact is conducted in a productive manner.

The object of this thesis was to determine which paradigms need to be established so that future discussion on the subject of digital reading will be fruitful. This thesis set out to verify whether certain changes contributing to the impact of the digital medium have a historical precedent, in order to establish the extent to which they should be part of the discussion on the impact of the digital medium.

In the considerably broad field applicable for digital reading, this thesis focused on scholarly reading. Added to this, although many forms of immersion can be distinguished, this thesis confined itself to a distinction between two main types: attentive, studious immersion – closely related to scholarly reading – and imaginary, emotional immersion.

Following a review of recent literature on digital reading, Chapter one concluded with the presentation of five different perspectives on the subject, namely *Reflection and Memory*, *Information and Knowledge*, *Simulations and Delegations*, *Intangibility and Volatility* and *Immersion*.

[180] See for example Wolf, M., *Proust and the Squid*; Giffard, A., *Des lectures industrielles*; Birkerts, S., *The Gutenberg Elegies: the Fate of Reading in an Electronic Age*, (Boston: Faber&Faber, 1994).

Subsequently, these perspectives were considered from a historical point of view, in order to determine whether they have ever been an issue before in the history of reading.

The most significant finding to emerge from this thesis was that *Intangibility and Volatility* appear to be solely a property of digital text. Closely related to and therefore much influenced by this property is another of the five themes identified: *Immersion*. The second major finding was that *Reflection and Memory*, *Information and Knowledge* and *Simulations and Delegations* are present throughout the history of reading.

The long history of reading shows us that our ancestors essentially struggled with the same problems. They too had difficulty handling an information overload and controlling the flow of information towards the public. As regards scholarly reading, they also had trouble concentrating on longer texts, which were often academic texts. The use of mnemonic techniques such as highlighting, annotating and marking to stimulate attentive, studious immersion in texts can be seen as early as the twelfth century. The ability to reflect on reading matter has been one of the main objectives of reading throughout the centuries.

These findings suggest that although *Reflection and Memory*, *Information and Knowledge* and *Simulations and Delegations* are themes that do present themselves when an individual is engaged in the activity of digital reading, this is merely because they are inherent to the activity of *reading*. In other words, the presence of a digital medium does not appear to make any significant difference where they are concerned. However, , this new medium may result in a need to redefine certain established notions. The fact that these themes have been an issue before, does not imply that they will not be an issue again.

However, it can be concluded from the present study that the intangibility of digital text alone seems inherent to the properties of the digital medium. In contrast with the book, which becomes almost transparent during the activity of reading, the digital medium will always be present due to the alterity relationship between technology and humans. Therefore, the reader is permanently aware of the presence of the digital medium, which hinders his immersion in the text. In turn, the lack of immersion influences the processing or recording of texts in the reader's memory. Scholars often draw on several mnemonic devices in order to maintain the high level of concentration required for attentive, studious immersion. However, the digital equivalents of these devices are not functioning properly yet.

As stated in the introduction to this thesis, most studies in the field of digital reading conclude that it is still too early to arrive at a final conclusion and suggest some directions for further research. As Jay David Bolter puts it, '[a conclusion] is really an apology that the book cannot achieve what it presumes to do: to "cover" the subject, to close the subject of between two covers.'[181]

[181] Bolter, J.D., *Writing Space* (Hillsdale: Lawrence Erlbaum, 1991), p. 239.

The main objective of this thesis however, was to suggest the exact direction to be taken by future research and what further work remains to be done. This thesis will not contribute to the present discussion by presenting yet another theory on the impact of digital reading, but by establishing the paradigms for the discussion and presenting a more refined framework.

The current transition from print to digital is extremely interesting and our society can be sure that it will be the object of future research. However, as the history of reading demonstrates, any transition can be unnerving, as we only know what we are leaving behind, not what we will get in return. It is inevitable that we will experience some changes in our reading behaviour, since transformations in media necessarily go hand in hand with transformations in reading practices[182]. As Walter Ong illustrates in his well-known essay 'Orality and Literacy', 'Technologies are artificial, but – paradox again – artificiality is natural to human beings. Technology, properly interiorised, does not degrade human life but on the contrary enhances it.'[183]

This point is confirmed by the scholars reviewed in this thesis[184]. As long as we are aware of its limitations and its impact on our reading behaviour, we can use the digital medium to our full advantage. The findings that have emerged from this thesis can contribute to a more complete picture of the limitations of reading on the digital medium.

The findings of this study imply that further research should focus on the impact of the intangibility of digital text on our reading behaviour. The intangibility of digital text and the lack of immersion that follows from it appear to be the main issues that need to be taken into consideration in future discussions on digital reading. By concentrating on this paradigm, steps can be taken to avoid the discussion taking on a techno-deterministic or a techno-utopian point of view and it will be possible to discuss the subject in a productive manner.

182 Cavallo, G. and R. Chartier, *A History of Reading in the West*, p. 15.
183 Ong, W., 'Orality and Literacy', p. 136.
184 Murray, D., 'Changing Technologies, Changing Literacy Communities?'; Giffard, A., *Des Lectures industrielles*; Hillesund, T., 'Digital Reading Spaces: How Expert Readers handle Books, the Web, and Electronic Paper' (see 1.3. Conclusion).

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