

# Five Hundred Years and Counting.

Utilitarian and Experiential Factors that Keep  
the Printed Book from Dying

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# Five Hundred Years and Counting. Utilitarian and Experiential Factors that Keep the Printed Book from Dying



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# Five Hundred Years and Counting.

## Utilitarian and Experiential Factors that Keep the Printed Book from Dying

### A. INTRODUCTION

Print has been called dead and been resurrected uncountable times now. CDs, DVDs and MP3-players have all been overtaken by the internet due to the convergence of media on the screen – why has this not happened to the printed book?

A few years ago, e-book sales were soaring, with growth rates of over 1000%.<sup>1</sup> But they have slowed down remarkably since then and never rose to the heights they were supposed to reach: in their largest market, the US, e-books today make up around 30% of the books sold, in Europe only under 10%, often even under 5%.<sup>2</sup> And now, for the first time, it is reported that e-book sales numbers of big UK and US publishers are falling,<sup>3</sup> while printed book sales are growing.<sup>4</sup> In a German

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<sup>1</sup> *The New York Times*, 'The Plot Twist: E-Book Sales Slip, and Print is Far From Dead', <<http://www.nytimes.com/2015/09/23/business/media/the-plot-twist-e-book-sales-slip-and-print-is-far-from-dead.html?referrer=&r=0>> (20.04.2016).

<sup>2</sup> *The Bookseller*, 'How fast does your ebook grow', 5.5.2015, <<http://www.thebookseller.com/futurebook/how-fast-does-your-e-book-grow>> (20.04.2016).

<sup>3</sup> For the UK: *The Guardian*, 'Ebook sales falling for the first time, finds new report', 3.2.2016, <<http://www.theguardian.com/books/2016/feb/03/ebook-sales-falling-for-the-first-time-finds-new-report>> (20.04.2016); for the US: *The New York Times*, 'The Plot Twist'.

survey in 2015, 45% of all people surveyed said they would read only printed books, which is a 7% increase over the previous year.<sup>5</sup>

What are the reasons why people still buy and read hard copies and not read novels exclusively on their smart phones and tablets, where so many other leisure activities are taking place – shopping, watching movies and TV shows, listening to music and playing games? And as technology advances, will the printed book still hold intrinsic advantages over the digital one? These are the two questions I want to answer in the following, by looking into why reading substrates<sup>6</sup> are chosen, comparing their features and inherent properties.

The decision on what to read a book on, paper or screen, is based on a complex array of economic, social, cultural and aesthetic factors that differs from person to person. In this thesis I set out to study the variety of those factors influencing the choice of reading substrate and analyse if they are likely to change soon as e-reading hard- and software develops and reading behaviours change. This is important to know for publishers, as it helps them to forecast

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<sup>4</sup> *Börsenverein des deutschen Buchhandels*, 'Printbücher beflügeln Umsatz', <[http://www.boersenblatt.net/artikel-simon\\_\\_\\_schuster\\_mit\\_quartalsbilanz.1098943.html](http://www.boersenblatt.net/artikel-simon___schuster_mit_quartalsbilanz.1098943.html)> (25.5.2016).

<sup>5</sup> *Börsenverein des deutschen Buchhandels*, 'Summary of the study: Buyers and readers of books 2015. Profiles, motives, attitudes', <[http://www.boersenverein.de/sixcms/media.php/976/2015\\_Buchkaeufuer\\_und\\_Leser\\_Zusammenfassung\\_final\\_englisch.pdf](http://www.boersenverein.de/sixcms/media.php/976/2015_Buchkaeufuer_und_Leser_Zusammenfassung_final_englisch.pdf)> (13.04.2016).

<sup>6</sup> The term "substrate" includes electronic devices and printed books.

future developments. Moreover, developers of e-reading devices and software can take into consideration what readers enjoy and what they dislike, to improve digital reading experiences.

The first section starts with an analysis of the utilitarian values of different substrates. This part makes use of consumer behaviour studies, especially of the *Diffusion of Innovation Theory* by Everett M. Rogers<sup>7</sup> which gives a useful starting point as it specifies five general attributes to evaluate new technologies: Relative advantages, compatibility with the user's needs and values, complexity, trialability and observability.

The next part is concerned with experiential qualities of reading devices, which are included in extended versions of Rogers' theory.<sup>8</sup> The sensual modalities of reading are considered, along with issues of trust, immersion, emotional aspects, ownership, image and social interactions. All those factors named are analysed with regard to their development in the future. Naturally, prognoses like these are frail and disruptive technologies cannot be overestimated, as they can come out of nowhere and mix up whole markets. But looking in detail at the reasons for reading analogue or digitally can still give clues to whether printed books will stay a mass medium, will eventually shrink into being of interest only to a

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<sup>7</sup> E. M. Rogers, *Diffusion of Innovations*, 4<sup>th</sup> edition (New York, 2010 (1<sup>st</sup> edition 1962)).

<sup>8</sup> S. Chen and N. Granitz, 'Adoption, rejection, or convergence: Consumer attitudes toward book digitization', *Journal of Business Research*, 65 (2012) pp. 1219-1225 (1220).



small group of nostalgic reactionaries or might even completely disappear.

There has been a lot of research about the (technical) functionalities of e-books and reading on screens and on paper, especially in education environments. Some aspects like ownership vs. access, the lending of e-books or reading comprehension and effort have also been analysed, although no study tried to provide a full picture of the influences on choosing reading devices. In general, little is known about what factors influence the decision for or against an e-reading device.<sup>9</sup> With the multi-perspective approach here, I try to bundle all factors that lead to decisions on buying books and reading, looking at them from different angles including phenomenology, economy, cognitive science, psychology, socio-cultural and media studies. This follows the transdisciplinary model for reading research put forward by Anne Mangen and Adriaan van der Weel: They propose an approach enabling the reconciliation of subjective experiences with objective, quantitative measures.<sup>10</sup>

Discussions about “e vs. p” are usually led very emotionally, with the “digital gurus” on one side and the

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<sup>9</sup> D. Shim, J. G. Kim and J. Altmann, 'Identifying key drivers and bottlenecks in the adoption of E-book readers in Korea', *Telematics and Informatics*, 33 (2016), pp. 860-871 (861).

<sup>10</sup> A. Mangen and A. van der Weel, 'The evolution of reading in the age of digitization: an integrative framework for reading research', *Literacy* (forthcoming), pp. 1-9.

“diehard bibliophiles” on the other.<sup>11</sup> My own inclination is to go to bat for printed books, but I will see if reading printed books will put me into a minority in the future, analysing the influencing factors as dispassionately as possible.

The readers’ perspective is the focus here, but I want to emphasize that their demand is in a two-way relationship with the supply. The other stakeholders in this field also impact on how people read: the publishers, authors, bookshops and software developers. They are responsible for pushing new technologies on to the market, advertising special deals (for example e-readers with free e-books already on them), pricing strategies etc., thus shaping reading decisions.

This thesis focuses on fiction, as it is still the trade book genre that is most widely read, even though numbers are declining.<sup>12</sup> The term “reading” is hence used meaning the deep reading of long form texts, notably novels. Besides printed books, two digital reading devices are considered: e-readers and tablets. E-readers seem to be the closest to reading a printed book, but ownership has declined since 2014, when 32% of Americans owned an e-reader, to only 19% in 2015, while the number of tablet owners (45% in 2015) has been going up.<sup>13</sup> A study in the US also showed that 78% of people

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<sup>11</sup> A. van der Weel, ‘e-Roads and iWays. A Sociotechnical Look at User Acceptance of E-books’, *LOGOS*, 21/3-4 (2010), pp. 47-57 (47), DOI: 10.1163/095796511X559945.

<sup>12</sup> *Börsenverein des deutschen Buchhandels*, ‘Summary of the study’, p. 6.

<sup>13</sup> *Pew Research Centre*, ‘Technology Device Ownership: 2015’ <<http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015/>> (16.04.2016).

who read e-books did so on tablets,<sup>14</sup> especially younger people who like media technologies.<sup>15</sup> E-books can be read on basically any electronic device that has reading software. As smart phone screens get bigger, many of the points made for tablets can also be transferred to smart phones. But reading novels this way is still a minor phenomenon, so it is not analysed separately here.

Not discussed here are children's books or the concerns of readers with disabilities like dyslexia, as well as e-books in libraries. Also, the focus lies on the Western world, following a cultural definition of the term to include Europe, the US, New Zealand, Australia and some countries in South America, because e-reading can mean something entirely different to people who would not otherwise have access to texts and cultural differences can lead to very different consumption behaviours.

## **B. THEORETICAL BACKGROUND**

To start off, it is useful to define some terms that are relevant regarding digital reading. E-books are traditional books transformed into 0s and 1s in an electronic file; they are texts

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<sup>14</sup> *International Publishers Association*, 'Annual Report October 2014 – October 2015', p. 20, <[http://www.internationalpublishers.org/images/annual-reports/ipa\\_ar\\_online.pdf](http://www.internationalpublishers.org/images/annual-reports/ipa_ar_online.pdf)> (16.04.2016).

<sup>15</sup> Stichting Lezen, *Leesmonitor – Het Magazine* (Amsterdam: Stichting Lezen, 2015), p. 20; *Leesmonitor*, 'Leesgedrag E-boeken', <<http://www.leesmonitor.nu/leesgedrag-e-boeken>> (2.5.2016).

in digital form. E-readers like Amazon's *Kindle* or Barnes & Noble's *Nook* are "dedicated single-function" devices to read e-books on, using *E Ink* technology which tries to "mimic the visual appearance of ordinary ink on paper".<sup>16</sup> This *E Ink* has been only available in black and white for the last years, but the *E ink Corporation* (which supplies all major e-reader companies), has now also developed colour *E ink* technology. Tablets however are "do-it-all" devices which can present all kinds of modalities like audio, video or text, using LCD (Liquid Crystal Display) technology that uses backlighting.<sup>17</sup> E-readers and tablets can be very different regarding size, luminance, battery life, interfaces, navigation and so forth.

Furthermore, it is essential to know why people read fiction in general. The German study 'Buyers and readers of books 2015. Profiles, motives, attitudes' from October 2015 found out that for 79% of the readers, the main motives for reading (fiction and non-fiction) are entertainment and relaxation: 60% said books are important to them to get away from daily life.<sup>18</sup> The second major motivation to read books is information gathering, which usually does not apply to novels.

The theoretical framework used in this thesis is taken from consumer behaviour studies, especially technology adoption models. Recent models in this area contain usually

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<sup>16</sup> Å. K. Tveit and A. Mangen, 'A joker in class: Teenager's attitudes and preferences to reading on different devices', *Library & Information Science Research*, 36 (2014), pp. 179-184 (180).

<sup>17</sup> *Ibid.*, p. 180.

<sup>18</sup> *Börsenverein des deutschen Buchhandels*, 'Summary of the study', p. 5.

both utilitarian and experiential dimensions.<sup>19</sup> These two categories will be the basis to study what makes people decide whether to buy and read printed books or e-books. Several technology adoption models exist today, often building on to each other. Those models like E.M. Rogers' *Diffusion of Innovation Theory*,<sup>20</sup> F.T. Davis' *Technology Adaption Model*<sup>21</sup> and all their extensions like V. Venkatesh's *Unified theory of acceptance and use of technology*,<sup>22</sup> share some central ideas. Whether it is called "perceived usefulness" (Davis) or "relative advantage" (Rogers), the most important utilitarian characteristic for taking up an innovation is the perceived benefits gained through adopting the new technology. Furthermore, the theories all discuss, in one way or another, characteristics like complexity, subjective norms, visibility, compatibility etc.

For the first part, Rogers' terminology will be used as his theory is quite general and can thus be applied to diverse domains, including technologies.<sup>23</sup> It is also rather succinct, in

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<sup>19</sup> For references see Chen and Granitz, 'Adoption, rejection, or convergence', p. 1219.

<sup>20</sup> Rogers, *Diffusion of Innovations*.

<sup>21</sup> F. D. Davis, 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', *MIS Quarterly*, 13/3 (1989), pp. 319-340, DOI: 10.2307/249008.

<sup>22</sup> V. Venkatesh, *User Acceptance of Information Technology: A Unified view* (Ann Arbor: UMI 1998).

<sup>23</sup> The other theories are rather suitable for adoption in the workplace. J. Jung et al., 'Factors affecting e-book reader awareness, interest, and intention to use', *New Media & Society*, 14/2 (2011), pp. 204-224 (206). Rogers' theory has already been applied in parts to e-books, although so far only cursory, see for example: M. Waheed et al., 'Emotional attachment and multidimensional self-efficacy: extension of innovation diffusion theory in the context of eBook reader', *Behaviour & Information Technology*, 34/12 (2015), pp. 1147-1159, DOI: 10.1080/0144929X.2015.1004648.

comparison to the others and has proven to be a reliable framework regarding the adoption of innovation.<sup>24</sup> Rogers' definition of an innovation is that it is an idea, practice or object that is perceived as new.<sup>25</sup> E-reading overthrows traditional reading practices and adds new functions and is therefore an innovation.<sup>26</sup> Even if a technological innovation usually has some benefit for the user, people are often sceptical about the profitability of adopting it, as it usually creates a degree of uncertainty.<sup>27</sup> If the innovation carries the possibility of solving a (perceived) problem, this uncertainty will be reduced by seeking information and subsequently, a decision about adoption or rejection is made.<sup>28</sup>

In his book *Diffusion of Innovations*, Rogers surveyed around 4000 studies concerned with innovations and gives a useful starting point as he identified five general attributes to evaluate new technologies: the relative advantages of the new over the old, the compatibility with the user's needs and values, the complexity of the technology, its trialability and its observability by others.<sup>29</sup> The first two are the ones correlated the strongest with adoption or rejection of a technology.

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<sup>24</sup> Shim, Kim and Altmann, 'Identifying key drivers and bottlenecks', p. 862; Jung et al.

'Factors affecting e-book reader awareness', p. 206.

<sup>25</sup> Rogers, *Diffusion of Innovations*, p. 11.

<sup>26</sup> J. Y. Lai and C. Y. Chang, 'User attitudes toward dedicated e-book readers for reading. The effects of convenience, compatibility and media richness', *Online Information Review*, 35/4 (2011), pp. 558-580 (565).

<sup>27</sup> Rogers, *Diffusion of Innovations*, p. 13.

<sup>28</sup> *Ibid.*, p. 14.

<sup>29</sup> *Ibid.*, p. 208.

Rogers himself states that his categories are only the five main ones and that they can be extended with characteristics specific to the respective field of study, as for example done by Kearns in 1992 for computer innovations.<sup>30</sup>

In the second part of the thesis, the experiential dimensions of printed and e-books, which are incorporated in several extensions of Rogers' theory, are discussed: aspects like immersion, reading comprehension, trust, sensory experiences, emotional involvement and symbolic value.<sup>31</sup> Especially with regard to reading for pleasure, the influence of subjective and often unconscious experiences of reading on different devices are crucial.



Figure 1: Rogers' Adoption of Innovation Curve.<sup>32</sup>

Digital reading is in the “early majority” phase of Rogers' adoption model (see figure 1).<sup>33</sup> But will the rest follow and e-books overtake printed books? So far, only 3% of the late

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<sup>30</sup> K. P. Kearns, 'Innovations in Local Governments: A Sociocognitive Network Approach', *Knowledge and Policy*, 5/2 (1992), pp. 45-67.

<sup>31</sup> See Chen and Granitz, 'Adoption, rejection, or convergence', p. 1220.

<sup>32</sup> Rogers, *Diffusion of Innovations*, p. 257ff.

<sup>33</sup> *Leesmonitor*, 'Leesgedrag E-boeken'.

adopters and “laggards” consider reading e-books and 6% of people who had already adopted digital reading have abandoned it already.<sup>34</sup> Although the part of the theory used as a base here is particularly about adoption of an innovation, not the intention to continue using a new technology, the factors talked about here are generally also the same ones that keep people using a technology.

The individual consumer’s innovativeness (willingness to try and buy something new and different) is also an important explanatory variable in Rogers’ theory. If someone possesses for example more functional innovativeness, utilitarian factors will be more important to them than for example aspects of emotional attachment. But in general, people remain largely faithful to the media they were surrounded with when they were young.<sup>35</sup>

A Norwegian study from 2014 found out that 15-year old students who do not read much (reluctant readers) preferred reading on an e-reader over reading a printed book; especially boys.<sup>36</sup> But the same survey states that the avid readers predominantly favoured printed books.<sup>37</sup> A study in the UK came to the conclusion that 64% of 16 to 24-year-olds

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<sup>34</sup> *Leesmonitor*, ‘Leesgedrag E-boeken’.

<sup>35</sup> Stichting Lezen, *Leesmonitor*, p. 16.

<sup>36</sup> Tveit and Mangen, ‘A joker in class’.

<sup>37</sup> Which also is supported by another study, see Tveit and Mangen, ‘A joker in class’, p. 183.



prefer printed books over e-books.<sup>38</sup> However, 16 to 19-year-olds are, according to the study, more likely to read e-books and less likely to have a preference concerning the format. Another study by the marketing research firm *Nielsen from 2014* states that teenagers buy fewer e-books than 20 to 44-year-olds.<sup>39</sup> Teenagers and young adults today might still prefer printed books because their parents used to read to them out of printed books. On the other hand, “tech-love” can serve as entrance to book reading for younger readers<sup>40</sup> and some schools are already transforming their libraries to digital-only libraries.<sup>41</sup> As can be seen above, the empirical findings are discrepant. However, it is crucial to survey young people’s reading behaviour, as they are the least conditioned by printed books and thus can indicate preferences of future readers.

## C. UTILITARIAN ASPECTS

### 1. Relative Advantage

What are the inherent properties and current conditions of printed books and e-books that make one objectively “better”

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<sup>38</sup> *The Bookseller*, ‘Young people prefer print to e-books’, 28.9.2015, <<http://www.thebookseller.com/news/young-people-prefer-print-e-books-313321>> (17.05.2016).

<sup>39</sup> *Nielsen*, ‘Don’t judge a book by its cover: tech-savvy teens remain fans of print books’, 12.09.2014, <<http://www.nielsen.com/us/en/insights/news/2014/dont-judge-a-book-by-its-cover-tech-savvy-teens-remain-fans-of-print-books.html>> (17.05.2016).

<sup>40</sup> Stichting Lezen, *Leesmonitor*, p. 20.

<sup>41</sup> M. K. Merga, ‘Are Teenagers Really Keen Digital Readers? Adolescent Engagement in Ebook Reading and the Relevance of Paper Books Today’, *English in Australia*, 49/1 (2014), pp. 27-37 (29f.).

than the other? Rogers calls the degree to which a technology is perceived as being better than the one preceding it “relative advantage”.<sup>42</sup> The specific factors that are relevant are determined by the nature of the innovation itself.<sup>43</sup> However, the categories of analysis are not clear cut, they sometimes overlap and correlate.

### 1.1. Economic Advantage

The first aspect that influences people’s decision regarding a reading device is often its costs. E-readers and especially tablets require relatively high up-front costs: Ranging from under €60 for the *Kindle Touch* or a Kobo model<sup>44</sup> to nearly €300 for the newest *Kindle Oasis*. Even if those devices come with some free e-books, as is sometimes the case, initial investments like this are not necessary for printed books.

And even when buying the most expensive e-reading device, one will most probably need a new device after a few years due to technological progress, incompatible software upgrades, planned obsolescence etc. Books are permanent for as long as paper and ink last, which can, depending on the quality, be easily more than a lifetime. E-readers are also more likely to break and involve a bigger loss if stolen, which might keep readers from making that investment. For tablets it is

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<sup>42</sup> Rogers, *Diffusion of Innovations*, p. 212.

<sup>43</sup> Ibid.

<sup>44</sup> Kobo N905-KBO-S Touch E ink.

harder to calculate the costs, because they are used for so much more than reading, like *iPads* or devices of the *Amazon Fire*-series. But they are also available in all price classes, starting from €30, to several thousands.<sup>45</sup> In regard to the substrate, buying printed books is a lot cheaper than buying an electronic device, because there are no initial costs involved. However, electronic consumer technology usually becomes cheaper very quickly and even though prices are already low, the quality of low-cost e-readers will increase further in the future, making them more attractive.

Buying the actual e-books is often cheaper than buying printed ones, which can make up for this first investment. This is true especially for new publications that are often at first only available as hardcover: For example the Pulitzer Prize winning novel *The Orphan Master's Son* by Adam Johnson costs around €25 as a hardcover, the newer paperback edition costs €9,60 and the *Kindle* e-book €8,49.<sup>46</sup> In comparison to the paperback, the savings are not massive. But there are also many e-books available for only a few Euros and many available for free, especially literary classics and self-published books. Accordingly, most e-books that are downloaded on devices (which does not mean read) have been downloaded for free.<sup>47</sup>

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<sup>45</sup> For example the Microsoft *Surface pro4 i7 512GB*.

<sup>46</sup> At Amazon on 29.04.2016.

<sup>47</sup> *Leesmonitor*, 'Leesgedrag E-boeken'.

However, many readers still spend money on paper books that they could get gratis digitally. This became clear recently with the new *Penguin* series “Little Black Classics” which has been hugely successful with selling over 70.500 copies in the first week for 80 p each, even though the texts are all available for free online.<sup>48</sup> Also, second-hand printed books are sold on Amazon for as low as 1 cent (plus delivery charges). This leads to situations when printed books are already sold cheaply as second hand, when e-book prices are still high. Also, paying for an e-book usually does not mean ownership, but only access, and therefore digital books cannot be resold (yet).<sup>49</sup> It depends hugely on what and how many books someone reads, to make an electronic device worth its money.

Another aspect that might influence somebody’s choice is that there is a lower threshold for downloading an illegal book than for stealing an object; online piracy is seen as ethically different from “traditional” stealing,<sup>50</sup> and somewhat socially acceptable. And even though piracy of books is low compared to piracy of music and films,<sup>51</sup> there are thousands of

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<sup>48</sup> *The Guardian*, ‘Little Black Classics carry Penguin to new heights’, 29.3.2015, <<https://www.theguardian.com/books/2015/mar/29/little-black-classics-carry-penguin-to-new-heights>> (28.05.2016).

<sup>49</sup> N. Rauer and D. Ettig, ‘Can e-books and other digital works be resold?’, *Journal of Intellectual Property Law & Practice*, 10/9 (2015), pp. 713-716, DOI: 10.1093/jiplp/jpv126.

<sup>50</sup> W. Hardy, M. Krawczyk and J. Tyrowicz, ‘Why is online piracy ethically different from theft? A vignette experiment’, *University of Warsaw working papers*, 24 (2013), p. 1.

<sup>51</sup> *The Guardian*, ‘Ebooks are unfamiliar waters for digital pirates, according to UK survey’, 27.7.2015,

books available for illegal downloading. One practice that is currently in a legally “grey” area is the sharing of accounts for e-reading, especially for e-book flatrates. Amazon’s all-you-can-read offer *Kindle unlimited* for example does not allow to share an account with another person, but as one can read on up to six different devices, the temptation is obvious, and misuse hard to detect.

E-book flatrates are of course also very cheap; often they cost less per month than a printed book. There are also completely free offers, where one pays with personal data and “eyeballs on advertisement”. However, the choice on these platforms is often limited, as new books are usually not available immediately. Also, the books are not accessible after ending the subscription. So far, no e-book flatrate model has been really successful, some, like *Oyster* or *Scribd*, even had to give up after a few years.

In 2014, 68% of Germans said they would rather spend money on printed books than electronic ones<sup>52</sup> which indicates that the economic value that is obtained for the money is seen as higher if the book has a truly material shape. This is backed up by similar findings of a study in the UK, where over 60% of respondents said that less than £3 (just under €4 currently) is the appropriate price for an e-book, only 10% said they would

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<<http://www.theguardian.com/books/2015/jul/24/ebook-pirate-uk-statistics-2015>> (29.04.2016).

<sup>52</sup> *Börsenverein des deutschen Buchhandels*, ‘Verankert im Markt – Das E-Book in Deutschland 2013’, p. 5, <<http://www.boersenverein.de/ebookstudie>> (16.04.2016).

pay more than £5 (around € 6,50).<sup>53</sup> The selling prices for e-books depend on national laws and pricing strategies of the publishers. Just now for example, the fixed book price agreement in Germany was extended to also be valid for e-books.<sup>54</sup> Also, recently, *Kindle unlimited* was deemed illegal in France because it violates their fixed book price law.<sup>55</sup>

Taking all these factors into account, the economic choice of reading substrate depends on how much and which books one reads, the legal and commercial environment and also how long the chosen device lasts and how expensive it is.<sup>56</sup>

## 1.2. Convenience

The second important aspect regarding relative advantages is convenience, especially portability. As printed books are available in many different formats and can be bigger or smaller than e-readers or tablets, the more important advantage than actual size is that electronic devices can contain thousands of books at the same time – a whole

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<sup>53</sup> *The Bookseller*, 'Young people prefer print to e-books'.

<sup>54</sup> *Zeit Online*, 'Künftig gelten auch für E-books feste Preise', <<http://www.zeit.de/kultur/literatur/2016-04/buchpreisbindung-e-books-bundestag-verlage-preis>> (30.04.2016).

<sup>55</sup> H. Johnson, 'Bad News for Kindle Unlimited in France?', *Publishing Perspectives*, 9.2.2015, <<http://publishingperspectives.com/2015/02/bad-news-for-kindle-unlimited-in-france/#.VyR3avmLSYk>> (30.04.2016).

<sup>56</sup> Z. Bissonnette, 'Should You Buy an eBook Reader?', *Time*, 28.6.2011, <<http://business.time.com/2011/06/28/should-you-buy-an-ebook-reader/>> (7.3.2016).

portable personal library. No matter the content, even a thousand page book is pocket-size, no shelf space is needed, no heavy boxes need to be carried when moving houses and several books can be read parallelly.

But regarding portability, electronic devices also have an important drawback: they break more easily than printed books, especially if carried around in backpacks and the like. There are many causes to make them stop working, for example if they fall down or sand from a beach gets into the device. However, developers are working on these issues, and waterproof e-readers (like the Kobo *Aura H2O*) are already on sale, in addition to many different kinds of covers for protection. But it is inherent to electronic devices that their parts are extremely complex and sensitive and thus inclined to break. Portability is an advantage of electronic reading in regard to the number of books that readers can take with them. But the inherent property that makes this possible, being an electronic machine, is at the same time responsible for the relative frailty of the device.

Also important for consumer perceptions of convenience is the time and effort of the purchasing process.<sup>57</sup> Buying an e-book is usually quicker and involves less effort than going to a store, or waiting for a book ordered online. Purchases can be made in a few clicks, anywhere and anytime, if the reader knows how to shop in a particular store and the e-

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<sup>57</sup> Lai and Chang, 'User attitudes toward dedicated e-book readers', pp. 563f.

reader has been set up properly. Downloading time depends on the internet connection, but it is usually prompt and instantly satisfies the demand. Now that they are used to this immediacy (also through online music and films), some people might get dissatisfied with the ordering of paper books online or the walk to the bookstore.<sup>58</sup> Also, e-books can often be accessed on multiple devices, for example the constant companion smart phone, laptop and tablet. They can be synced so that the bookmarks and annotations are always up to date and accessible on the go.

Regarding the handling, both substrates have drawbacks and benefits: electronic devices can be used with one hand, for example when standing in a bus; turning a page in a printed book usually requires two hands. However, one can only hold an e-reader by the frame around the screen if it has a touch screen, which can make it awkward to hold.

On LCD screens, people can read in dark environments without needing an external light source. Trying to read from a tablet in the sunlight however is not pleasant, as there is usually a strong glare on the screen. New devices using *E ink* offer better readability in all lighting conditions than LCD screens,<sup>59</sup> for example in bright sunlight or from wider angles. As this technology does not work with backlighting, the newer

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<sup>58</sup> An argument made for example by P. Roberts, 'Instant Gratification. As the Economy gets ever better at Satisfying our Immediate, Self-Serving Needs, Who is Minding the Future?', *American Scholar*, 83/4 (2014), pp. 18-31.

<sup>59</sup> S. Benedetto et al., 'E-Readers and Visual Fatigue', *PLoS ONE*, 8/12 (2013), DOI: 10.1371/journal.pone.0083676.



e-readers have a small integrated light shining on the screen. For reading a printed book in darkness, one would have to buy one of the cheaply available tiny clip-on reading lights. The electronic devices are more convenient for reading at night, as no extra appliance is needed. Even though reading on tablets is still inferior because of the glare, it is possible and likely that anti-glare technology will advance so that reading on screens will measure up to and, due to illuminated screens, even overtake reading on paper.

Because e-reading devices are programmable, they offer convenient features that printed books cannot: for instance built-in dictionaries and hyperlinks that lead to further information. This can enhance the reading experience with information about the author, photographs, videos, audio files etc. Hyperlinks can be seen as a variation of what we know from print, footnotes and citations, but their effect on the reader is different: they “propel” us towards the related bits of text, pictures, graphs or videos.<sup>60</sup> They do not encourage deep reading, but rather the opposite, as they are designed to catch the reader’s attention.<sup>61</sup> This will be further discussed in the chapter about the experiential dimensions of reading. But regarding convenience, it can be said presently that having access to all this information without having to look for it

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<sup>60</sup> N. Carr, *The Shallows. How the internet is changing the way we think, read and remember* (London: Atlantic Books, 2010), p. 90.

<sup>61</sup> *Ibid.*

somewhere else is practical and it is also comfortable to do all entertainment activities on one device, like a tablet.

Furthermore, text customization through changing the font, its size or colour is convenient, for example for people with poor eyesight. But customization does not stop at the form: there is for example a very controversial app, *Clean Reader*, which replaces profanity and allegedly offensive words with “clean” ones. There are more programmes imaginable changing the content like this, for example the names of characters or places with the reader’s choice of words. All these changes and possibilities influence the reading experience; from a utilitarian point of view, having these options of enhancements and adjustments is advantageous.

Maybe not absolutely necessary for reading fiction, but still practical is the searchability of digital texts. This is not available in printed books, although they enable random access and flipping through the book, which is in turn not possible electronically.

Annotations on e-readers do not require a pen at hand, but they are not as easy, quick, and unrestricted as on paper. With *E ink* screens there is not much space for further development, but on LCD screens, annotations by hand on touch screens will soon be possible. But writing and drawing on screens needs to get a lot better to become as practical as taking notes on paper. It might get to the stage where annotations on screens can be made with e.g. a screen pen, similar to what readers are used to. Then the printed book does

not hold any advantages over e-reading devices, besides that the notes are not just digital files and thus easier to be (involuntarily) deleted or made publicly available (more on this topic later).

In general, printed books are much more reliable than any electronic device. Readers of e-books have to think about possible technical issues like the fact that e-readers only support certain e-book formats, quickly outdated hard- and software, and the fact that Digital Rights Management so far prevents people from reading paid for e-books on devices by other companies. Tablets and e-readers are high-tech devices and thus will always need some kind of power supply. The battery life of e-readers currently lasts for several weeks (and even more for new devices that have a second battery in the sleeve), for tablets it is often around 10 hours. Also, batteries often cannot be replaced and their performance usually decreases hugely over time.

After buying a printed book, the reader does not have to think about any issues concerning the “care” of the book. They will always “work”, unless they are burnt, drenched, ripped apart or the ink fades away over time. They do not need updates, they are always virus-free and never crash; reading a printed book never creates the necessity to call a technical service help phone.

For people who value time and effort highly, convenience is a critical factor.<sup>62</sup> E-books are in many aspects more convenient than paper books, especially concerning portability, functions like dictionaries, hyperlinking, changing the settings and immediate access to huge amounts of books. The convenience of e-books is often hailed as their most important virtue and it is definitely true that some of their features are unattainable for printed books. But nonetheless, printed books score with some inherent properties like the fact that they do not need a battery and are much more robust and reliable than any electronic device. Both substrates are convenient, although in distinct ways.

### 1.3. Content

At present, the content available as print and digital book is partly different, which influences people's decision on how to read. Many publishers still predominantly produce printed books and authors sometimes want books to be published only this way, like Stephen King for his novel "Joyland".<sup>63</sup> Other publishers put out specific books only digitally and there are even publishers who exclusively sell e-books, in addition to the plethora of self-publishing websites that are usually also only digital.

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<sup>62</sup> Lai and Chang, 'User attitudes toward dedicated e-book readers', p. 572.

<sup>63</sup> New York: Hard Case Crime (2013), since 2014 available as e-book.

In the future, more and more books will be available as e-book as it will become easier to transform the already digital text files into e-book formats. It depends on the publishers which books they will offer in print and which ones electronically; many publishers now start entirely digital imprints, like Ullstein's *Forever* and *Midnight*, which will only publish e-books in specific genres, somewhere in between self-publishing and traditional publishing. Books only available as print will become more unlikely and therefore, the necessity to buy a printed book because that is the only way it is available will cease to exist.

Born digital books can also include videos or sound files, which create a completely different reading experience. Many projects experiment with added sound, videos and pictures, embracing the digital possibilities. For non-fiction and academic books, this has been fruitful – not so regarding fiction. Apps like *vooks* or the *Enhanced Editions*, a British project that was abandoned recently, have not been successful. It is doubtful that enhanced reading experiences like this ever become mainstream entertainment, as has been argued by Anne Mangen.<sup>64</sup> But again, from a utilitarian point of view, it is an advantage that electronic books can contain all kinds of enhancements, which are not available for printed ones.

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<sup>64</sup> A. Mangen, *New narrative pleasures? A cognitive-phenomenological study of the experience of reading digital narrative fictions* (Trondheim: NTNU Norwegian University of Science and Technology, 2006).

#### 1.4. Health, Environmental and Privacy Issues

Electronic devices with LCD screens can cause eye strain, which manifests itself in symptoms like fatigue, pain around the eyes, blurred vision or headache.<sup>65</sup> They also have an influence on sleep: when reading on an electronic device with backlighting, like all LCD screens, in the evening, this has effects on the time people fall asleep, the quality of the sleep and it lowers the alertness the next morning.<sup>66</sup> However, both visual eye strain and the negative influence on sleep do not occur when using devices with *E ink* displays, as those do not emit light, but reflect ambient light.<sup>67</sup>

Reading digitally is often argued as being more environmentally friendly than reading print. But recent studies have shown e-reading to be only more ecological if at least 50 books or 290 newspapers are read on the device before it is replaced (not taking into account that printed books might be read more than once).<sup>68</sup> Most of these environmental costs come from the manufacturing of e-readers and tablets, and if those processes are developed to use cleaner technologies and less toxic material, and if electronic devices are recycled (especially because of the rare elements used in them, which

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<sup>65</sup> Benedetto et al., 'E-Readers and Visual Fatigue', n. p.

<sup>66</sup> A.-M. Chang et al., 'Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness', *PNAS*, 112/4 (2015), pp. 1232-1237.

<sup>67</sup> Benedetto et al., 'E-Readers and Visual Fatigue', n. p.

<sup>68</sup> H. K. Jeswani and A. Azapagic, 'Is e-reading environmentally more sustainable than conventional reading?', *Clean Technologies and Environmental Policy*, 17 (2015), pp. 803-809 (807), DOI: 10.1007/s10098-014-0851-3.

do not “regrow” as trees for paper do), this is likely to decrease.<sup>69</sup>

A major influence on the decision on how to read is the issue of privacy and data security. Even though reading data (for example what is read, when, how fast etc.) might not be the most sensitive of the personal data digital devices are entrusted with, not knowing who is watching you read is something many people are not comfortable with and it is not unimaginable that certain political regimes can use data like this to for example track and prosecute critics. This is not an inherent property of digital devices, just a practice that the suppliers are very fond of and which can be useful for research. However, if a device is connected to the internet, it is invariably a potential target. These aspects might play a role in the individual’s decision about how to read, because printed books are not exposed to such risks.

To conclude, regarding the relative advantages of e-reading compared with reading on print, the result is ambiguous. Even though e-books have many strengths, especially regarding portability and available content, issues like frailty or lack of privacy and security, which will always apply to these devices, might keep people in favour of printed books in the future.

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<sup>69</sup> Jeswani and Azapagic, ‘Is e-reading environmentally more sustainable than conventional reading?’, p. 807.

## 2. Compatibility

To be adopted, the new technology has to be compatible with the existing normative socio-cultural values and beliefs, but also with the individual's past experiences, needs and life situation.<sup>70</sup>

The cultural background is an important factor in how people perceive products. For many readers in the Western world today, the printed book still embodies stability and is seen as record of culture, it has a strong implication of knowledge, education and intellect.<sup>71</sup> This was for example demonstrated by a marketing campaign by the publishing house Penguin, which used the image of printed books for their purposes: According to their research, men who read books are perceived as a lot more attractive and therefore, the publisher launched the "Are you good booking?" campaign, encouraging young men to pick up a book and read in public.<sup>72</sup>

This symbolic value is not present for electronic devices. Yet using an e-book reader or tablet can symbolise progressiveness and modernity. This is for example illustrated through a recent swearing-in of an US ambassador, which is a

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<sup>70</sup> Rogers, *Diffusion of Innovations*, p. 224.

<sup>71</sup> U. Rautenberg, 'Das Buch in der Alltagskultur. Eine Annäherung an zeichenhaften Buchgebrauch und die Medialität des Buches', in M. Estermann, E. Fischer and U. Schneider (eds.), *Buchkulturen. Beiträge zur Geschichte der Literaturvermittlung. Festschrift für Reinhard Wittmann* (Wiesbaden 2005), pp. 487-516 (494ff.).

<sup>72</sup> *Angel London*, 'Case Study Penguin Publishing', <<https://www.angellondon.co.uk/work/penguin-publishing/>> (25.5.2016).



highly symbolic act, on a *Kindle* instead of a paper book.<sup>73</sup> The aspect of image and symbolism is further analysed later, but to be noted here is that both options are socio-culturally acceptable today, while bearing different connotations.

However, one important aspect regarding the compatibility with cultural values is the importance of giving books as presents and lending them out. Even though e-books (and of course e-readers) can be given as presents and the act of giving a present also has significance on a non-materialistic level (as a gesture), presenting someone with an actual book, maybe with a personal dedication, feels substantially different than giving someone a code for an e-book or sending them a link. This becomes apparent through the very low rates of e-books that are given as presents.<sup>74</sup>

A new device also has to be compatible with past experiences of the individual reader. Usually, previously introduced ideas are the mental tools used to assess innovations.<sup>75</sup> Printed books have been around for centuries, much longer than for example the already outdated DVDs or MP3-players, therefore they have a much more stable position than these technologies.<sup>76</sup> Also, users are more likely to adapt a

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<sup>73</sup> *The Washington Post*, 'A U.S. ambassador was just sworn in on a Kindle', 02.06.2014, <<https://www.washingtonpost.com/news/the-switch/wp/2014/06/02/a-u-s-ambassador-was-just-sworn-in-on-a-kindle/>> (06.05.2016).

<sup>74</sup> *The Bookseller*, 'Gift-buying declining, Nielson Book research shows', 20.3.2014, <<http://www.thebookseller.com/news/gift-buying-declining-nielson-book-research-shows>> (06.05.2016).

<sup>75</sup> Rogers, *Diffusion of Innovations*, p. 225f.

<sup>76</sup> *Leesmonitor*, 'Leesgedrag E-boeken'.

new technology when they are not satisfied with the current one,<sup>77</sup> but books are well performing reading machines that did not need further development since page numbers, indexes and later pocketbooks were invented. Therefore it is not surprising that a 2010 study discovered that users will not accept e-books if they are not compatible with their expectations built through printed books.<sup>78</sup> The fact that e-books started out (and many still are) trying to imitate paper books only intensifies this notion. Many readers experience “haptic dissonance”, which is the sense that something is missing that is expected because of the reading experience on paper, especially regarding haptic and tactile feedback.<sup>79</sup> This will be returned to in the chapter about experiential factors.

But this compatibility with individual experiences is not unidirectional: reading digitally can for example free the reader of the expectation of negative experiences with books. The study with young students quoted earlier showed that devoted readers prefer paper books, but reluctant ones favour e-readers.<sup>80</sup> This could indicate, according to the authors of the study, that e-readers can promote a positive attitude towards reading for students to whom paper books are reminders of past difficulties. These readers might take on longer texts if they do not perceive the text on a reading device as lengthy.

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<sup>77</sup> Jung et al., ‘Factors affecting e-book reader awareness’, p. 208.

<sup>78</sup> Lai and Chang, ‘User attitudes toward dedicated e-book readers’, p. 571.

<sup>79</sup> Tveit and Mangen, ‘A joker in class’, p. 180.

<sup>80</sup> *Ibid.*, pp. 179, 182.

But on the other hand, people might not even start reading a book if they cannot see how long it is.<sup>81</sup>

Expectations can be born from experiences with printed books and electronic reading, but also from other innovations. If someone has had a negative encounter with for example a portable DVD player (which have been outdated fairly quickly), they might be less willing to adopt another new entertainment technology like an e-reader.<sup>82</sup> But readers' expectations are already changing: people who own more digital devices and use the internet more frequently than average already show more awareness, interest and intention to use e-readers.<sup>83</sup> As more and more of people's lives happens online, books might lose their standing as perfect reading machines due to expectations built up through digital media usage, for example that texts have to be instantly available and searchable.

E-reading also has to be compatible with the practical needs and the lifestyle of the reader. Whatever the advantages of the new form, they need to answer to the individual's requirements. For example if someone likes to read multiple books at the same time and travels a lot, reading digitally might be well suited. But if someone does not want to spend a lot of money and often drops her<sup>84</sup> smart phone, printed books might be the better solution. Many people also work a lot on

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<sup>81</sup> Merga, 'Are Teenagers Really Keen Digital Readers?', p. 34.

<sup>82</sup> Rogers, *Diffusion of Innovations*, p. 227.

<sup>83</sup> Jung et al., 'Factors affecting e-book reader awareness', pp. 215, 217f.

<sup>84</sup> The generic feminine is used in this thesis, but it is used to include all genders.

screens at their job, and thus might prefer not having more screen-time after work – one of the goals of reading fiction is to get away from daily life and this often means, from screens.

Compatibility is a highly individual characteristic and both printed and electronic books have affordances that could tip the scales in either direction.

### 3. Complexity, Trialability and Observability

Complexity is understood here as “the degree to which an innovation is perceived as relatively difficult to understand and use”, which is negatively related to the adoption of a new technology.<sup>85</sup> As said above, books are a comparatively stable technology and because they play such a big role in western culture and especially in education, practically everybody knows how to use them. So far, navigating a printed book is still more intuitive than using its electronic equivalents.<sup>86</sup>

Digital navigation differs from device to device and the issue of complexity is especially important for high-tech consumer products like tablets or e-readers.<sup>87</sup> In South Korea for example, the fear of high complexity of e-readers was found to be a main barrier preventing adoption.<sup>88</sup> However, as more and more of people’s lives happens online and developers try to

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<sup>85</sup> Rogers, *Diffusion of Innovations*, p. 242.

<sup>86</sup> Carr, *The Shallows*, p. 100.

<sup>87</sup> Shim, Kim and Altmann, ‘Identifying key drivers and bottlenecks’, p. 869.

<sup>88</sup> Ibid.

make interfaces more intuitive, digital navigation is becoming second nature and the needed “meta-literacy” to access and read e-books increasingly expands.<sup>89</sup> It is often said that particularly the generations growing up with digital technologies (“digital natives”) already have very sophisticated and distinct skills regarding these technologies and show different reading habits and technology preferences.<sup>90</sup> But some recent studies and meta-studies did not find substantial evidence for this claim.<sup>91</sup> Scepticism towards digital reading might rather be a general attitude independent of demographic factors and familiarity with the technology.<sup>92</sup> What is more important than age is the personal innovativeness of a reader: people with higher innovativeness are more confident with new technologies and perceive them as less complicated.<sup>93</sup>

In the future, as digital technologies evolve and keep expanding into more aspects of people’s lives, it seems plausible that even though electronic devices are more complex than books (if only because there are so many more possibilities for settings etc.), users will not be deterred by this for long. However, regarding paper books, nothing like

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<sup>89</sup> A. van der Weel, ‘Convergence and its discontents: From a book culture to a reading culture’, *LOGOS*, 20/1 (2009), pp. 148-154 (153).

<sup>90</sup> Tveit and Mangen, ‘A joker in class’, p. 179.

<sup>91</sup> For an overview see A. Mangen and D. Kuiken, ‘Lost in an iPad. Narrative engagement on paper and tablet’, *Scientific Study of Literature*, 4/2 (2014), pp. 150-177 (171).

<sup>92</sup> F. Kretschmar et al., ‘Subjective Impressions Do Not Mirror Online Reading Effort: Concurrent EEG-Eyetracking Evidence from the Reading of Books and Digital Media’, *PLoS ONE*, 8/2 (2013), p.8, DOI: 10.1371/journal.pone.0056178.

<sup>93</sup> S. Lee, ‘An integrated adoption model for e-books in a mobile environment: Evidence from South Korea’, *Telematics and Informatics*, 30 (2013), pp. 165-176 (173).

“computer rage”, which describes the frustration with electronic devices, exists. Printed books will always be intrinsically less complex than electronic reading devices.

To try out and experiment with an innovation decreases uncertainty. This trialability of a new technology, especially if a substantial upfront financial investment is needed, is important, although mostly for early adopters. For later adopters, their peers act as “vicarious trial”.<sup>94</sup> E-reading devices can be tried out in electronics stores, some bookstores (although some already threw them out of their range again because they were not profitable enough for the shops),<sup>95</sup> in some libraries and of course through people owning one in the personal network. Tablets often bring the possibility of e-reading automatically with them, and e-reading software can be downloaded for free on basically any device with internet connection. As many free e-books are available, and thousands of technology reviews too, reading electronically can be tried easily.

The last utilitarian aspect to consider here is if the benefits of using the new technology are visible for the potential user. The benefit of lower prices for example is very present on the online market platforms for books, as the different versions (printed and electronic) are often shown

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<sup>94</sup> Rogers, *Diffusion of Innovations*, p. 243f.

<sup>95</sup> *The Guardian*, ‘Waterstones to stop selling Kindle as book sales surge’, 6.10.2015, <<http://www.theguardian.com/books/2015/oct/06/waterstones-stop-selling-kindle-book-sales-surge>> (07.05.2016).

alongside each other. E-reader producers also put a lot of money and effort into advertising the benefits of the newest models and e-reading in general, leading with arguments like “Lighter than air”<sup>96</sup>, “thousands of titles for free”<sup>97</sup> or how the *Kindle paperwhite* is the “ultimate device for reading”. Even though observability is high, there are still features and aspects of digital reading that are not recognized widely, for example the existence of free e-books or enhanced literature.

As interim conclusion, it can be said that utilitarian aspects can lead people in either direction: to buying printed or electronic books. Both have utilitarian values: e-books are very convenient due to their portability, availability, digital possibilities like hyperlinking and synchronizing multiple devices. Printed books are more reliable, robust, independent from battery life and the functioning of electronic systems. From a utilitarian perspective, printed books are likely to stay, as they have highly valued, functional inherent affordances not transferable to electronic devices.

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<sup>96</sup> Advertisement for the *Kindle Fire HDX* (Amazon).

<sup>97</sup> Advertisement for the *Nook* (Barnes and Nobles).

## D. EXPERIENTIAL ASPECTS

In 2014, 79% of Germans said they love printed books and that an electronic device would lessen the reading experience.<sup>98</sup>

This shows that consumers are not only *homines oeconomici* but also make decisions based on feelings and subjective experiences. This dimension has been neglected in consumer research for a long time, but it is more and more acknowledged today: there are even new research areas called “funology” or “hedonomics”. In contrast to the classical argument that rationality and emotions are separate, and even seen as antithetical, it is clear today that the two cannot be separated.<sup>99</sup> Every single functional feature described above also influences the experience.<sup>100</sup> As companies are realizing the importance of subjective responses, they now often try to sell experiences, not only products or services.<sup>101</sup> Amazon for example advertised the *Kindle* with the slogan “Hold me. Read me.”,<sup>102</sup> accentuating the sensual dimension and the subjective relation to the object.

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<sup>98</sup> Börsenverein des deutschen Buchhandels, ‘Verankert im Markt’, p. 5.

<sup>99</sup> H. M. Khalid and M. G. Helander, ‘Customer Emotional Needs in Product Design’, *Concurrent Engineering: Research and Applications*, 14/3 (2006), pp. 197-206 (198), DOI: 10.1177/1063293X06068387.

<sup>100</sup> *Ibid.*, p. 205.

<sup>101</sup> A. Joy and J. F. Sherry, ‘Speaking of Art as Embodied Imagination: A Multisensory Approach to Understanding Aesthetic Experience’, *Journal of Consumer Research*, 30 (2003), pp. 259-282 (259).

<sup>102</sup> *The New Yorker*, ‘What Kindle wants’, 3.1.2011, <<http://www.newyorker.com/books/page-turner/what-kindle-wants>> (20.05.2016).



An important concept in consumer experience research is “embodiment”, meaning the connection of body and mind to understand human thinking and experiences.<sup>103</sup> All experiences with interfaces, here referring to printed books and electronic devices, are influenced by their materiality.<sup>104</sup> In comparing the reading substrates, there are quite a few different affordances that make for distinct encounters with the text.

Utilitarian factors are mostly perceived consciously, but many of the subjective experiential ones are unconscious, often finding expression in statements like “It just feels different” or “I somehow like it better”. In the following, I try to analyse what evokes these subjective judgements regarding printed and electronic books. Again, the categories are not clear cut, but rather interdependent.

## 1. Immersion

People who seek entertainment usually do so because of the intrinsic motivation to experience something positive: to enjoy it.<sup>105</sup> When reading fiction for fun, readers want to be moved, to be emotionally involved. To get drawn into a narrative, the reader needs to get absorbed, to lose herself in the fictional world, be unproductive and engaged in reading for reading’s

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<sup>103</sup> Joy and Sherry, ‘Speaking of Art as Embodied Imagination’, p. 259.

<sup>104</sup> Mangen, *New narrative pleasures?*, p. 13.

<sup>105</sup> P. Vorderer, F. F. Steen and E. Chan, ‘Motivation’, in J. Bryant and P. Vorderer (eds.), *Psychology of Entertainment* (New Jersey: Lawrence Erlbaum Associates, 2006), pp. 3-17 (6).

sake.<sup>106</sup> Immersion in the phenomenological sense means the degree to which the reader feels corporeally, cognitively and emotionally connected to the fictional world (and isolated from the real one).<sup>107</sup> There are four factors influencing the immersion in a book: the (in)tangibility of the text, attentional aspects, reading-effort and comprehension.

### 1.1. Intangibility of Digital Text

Anne Mangen argues that phenomenological immersion is related to the printed page, and that this will keep being true.<sup>108</sup> Even though her research is mainly focused on hyperfiction, some of her arguments can be transferred to reading regular, linear narrative fiction.

Readers always perceive the material substrate, the sensory modalities of the device that is read on, even when they are deep in the phenomenological signitive intending, meaning deeply immersed in a story. As said before, not only the story itself, but the material influences engagement: the embodied experience is the basis for the involvement in the text of a book.<sup>109</sup>

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<sup>106</sup> V. Nell, *Lost in a Book. The Psychology of Reading for Pleasure* (New Haven/London: Yale University Press, 1988), p. 2.

<sup>107</sup> Mangen, *New narrative pleasures?*, p. 24.

<sup>108</sup> A. Mangen, 'Hypertext fiction reading: haptics and immersion', *Journal of Research in Reading*, 31/4 (2008), pp. 404-419 (416), DOI: 10.1111/j.1467-9817.2008.00380.x.

<sup>109</sup> Mangen, *New narrative pleasures?*, p. 232.

Digital texts are intrinsically intangible, which leads to a very different reading experience than with printed books: the haptic interaction with the narrative takes place at a distance from the text; in contrast to reading in print, where the reader is literally in touch with the material substrate of the text.<sup>110</sup> Printed books present an inseparable unity of form and content, while in electronic books, the text and the material substrate are split up. The page read on a screen just now does not exist anymore; digital text is latently dynamic as it can be enlarged, hyperlinked etc.<sup>111</sup> Texts on screens are ethereal, they are binary data, inaccessible to our senses without the help of a display and this intangibility, instability and inaccessibility has negative effects on phenomenological immersion.<sup>112</sup>

Closely linked with the intangibility of digital text is the absence of invisible, yet existing dimensions. Parts of material objects like books are always invisible (not only visual, but pertaining to all senses), like the last page of a book, when the first one is opened. But knowing that the temporary unavailable features nevertheless exist, gives the object depth and dimension and is part of the phenomenological experience.<sup>113</sup> Printed books thus have a “temporal and spatial constancy”<sup>114</sup> that gives security about its stability and physical

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<sup>110</sup> Mangan, 'Hypertext fiction reading', pp. 405, 408.

<sup>111</sup> Mangan, *New narrative pleasures?*, p. 207.

<sup>112</sup> *Ibid.*, p. 229.

<sup>113</sup> *Ibid.*, p. 236.

<sup>114</sup> *Ibid.*, p. 229.

extents. E-readers have these dimensions, but electronic texts do not have this kind of invisible features: they do not have materiality that indicates those hidden, yet existent parts. How many pages the reader still has to read digitally is only visible via small visual cues that are not inherent in the material shape of the book. Due to this and the intangibility of electronic books, the perceptual intending does not support the signitive intending of the story read.<sup>115</sup>

To get absorbed in a story, the physical features of the technology should be transparent and recede into the background, so as to not disturb the immersion of the reader.<sup>116</sup> Haptic dissonance in handling a medium influences the immersion in the story if the device is experienced as awkward or impractical.<sup>117</sup> In a recent study, people reading on tablets reported more awkwardness regarding the manipulation (e.g. getting to the next page) of the medium than with printed books, regardless of their prior experience with the device.<sup>118</sup> On the other hand, some teenagers were found to experience the page-turning of paper books as difficult, impractical and old-fashioned.<sup>119</sup> What is considered “awkward” depends largely on subjective experiences with technologies. As electronic devices get more intuitive, their

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<sup>115</sup> Mangen, *New narrative pleasures?*, p. 240.

<sup>116</sup> Mangen, 'Hypertext fiction reading', p. 406.

<sup>117</sup> Mangen and Kuiken, 'Lost in an iPad', pp. 151, 154.

<sup>118</sup> *Ibid.*, p. 160.

<sup>119</sup> Tveit and Mangen, 'A joker in class', p. 182.

handling may become more practical and also, getting used to one specific e-reading device can improve the handling experience.

However, the human-technology relations when reading printed books or electronic ones are rather different. When reading on paper, the relation is hermeneutic: the book is the mediator and presenter of a fictional world and, to some extent, steps back behind the fiction it transmits.<sup>120</sup> When reading on a screen, the relation is rather one of alterity, where the technology is opaque, due to the intangibility of the text and the affordance, even necessity, of active interaction with the technology. On screens, reading is oscillatory: fluctuating between “looking at and looking through”, while print is more transparent, lets us look through and becomes an invisible vehicle.<sup>121</sup>

From a phenomenological point of view, electronic devices are a poor environment for immersion due to the effects of immateriality: that the reader can never get in tangible contact with the letters, is always removed from them as they are incorporeal and because digital texts lack spatiotemporal salience.<sup>122</sup>

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<sup>120</sup> Mangen, ‘Hypertext fiction reading’, pp. 413ff.

<sup>121</sup> Mangen, *New narrative pleasures?*, p. 217.

<sup>122</sup> *Ibid.*, p. 241.

## 1.2. Attention – the Realm Behind the Click

Intertwined with immersion is the aspect of attention, which is allocated in part consciously (the decision to read a book), and in part unconsciously (the degree to which people get immersed).<sup>123</sup> The ability to give full attention to a text and not be distracted makes immersion possible,<sup>124</sup> and immersion on the other hand facilitates giving one's full attention to a text. This of course relies to some extent on the complexity of the content, the genre and style of the text, as readers are more able to resist distractions when the text is less effortful to read and they are interested in it.<sup>125</sup>

The printed book and electronic devices have different affordances, which are the perceived features of objects that offer opportunities for certain uses. The fact that there is always something waiting behind the next click when reading on a screen, affords haptic interaction with the content, and captures the attention away from the signitive, the experience of the story.<sup>126</sup> Turning the pages of a paper book also requires this kind of interaction, but until now, it is more intuitive and automatic than navigating a screen, as already mentioned above.

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<sup>123</sup> Mangen, *New narrative pleasures?*, p. 241.

<sup>124</sup> Mangen and Kuiken, 'Lost in an iPad', p. 166.

<sup>125</sup> Mangen, *New narrative pleasures?*, p. 190f.; Mangen and Kuiken, 'Lost in an iPad', p. 154; Nell, *Lost in a Book*, p. 74.

<sup>126</sup> Mangen, *New narrative pleasures?*, p. 253.

Readers tend to want to scan screens with “clickability” for spaces that will yield change through clicking; they are inclined to explore the endless possibilities lurking in the background,<sup>127</sup> which are potentially greater than in printed books. When reading electronically, there is always a door open into the vast space of the internet or the capacity of the device, even if this involves only browsing the web shop, reading recommendations for books, changing the backlighting or the typeface. This inclination is due to the psycho-biological human urge to avoid psychic entropy, which describes the disorder of the mind when it is idle. Order in the mind can be secured more easily through outside stimuli than endogenous ones (like the reader’s imagination when reading a story).<sup>128</sup>

On tablets, the channel for reading is shared with other kinds of media like videos or audio; a recent advertisement for the *Kindle Fire* (which is the tablet version of the Amazon e-reader) says “web, movies, apps, games, reading and more”, pushing e-books to the last place on the list of activities. Reading thus comes out of its “relative isolation”<sup>129</sup> as everything connected to the internet is basically a platform for interruption, especially when alerts are turned on, announcing for instance new e-mail. And as reading, especially longer texts, requires more cognitive effort than watching a movie, browsing an online shop or scrolling through Facebook updates, the mind

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<sup>127</sup> Manguerra, *New narrative pleasures?*, pp. 186, 188.

<sup>128</sup> *Ibid.*, pp. 184ff.

<sup>129</sup> van der Weel, ‘Convergence and its discontents’, p. 151.

is likely to wander to “easier” activities if they are only one click away.<sup>130</sup> This affordance to click and explore other things results in an impatient mode of reading, which is in contrast to deep immersion.<sup>131</sup> Also, as emotional responses need time to develop,<sup>132</sup> reading on a multi-purpose device might feel less emotionally intensive if this mode of reading is experienced.

A Dutch study found that people reading paper books or on e-readers read more linearly and skimmed the text less than people using tablets.<sup>133</sup> With e-readers, the affordance to “do something else” is thus lower than on tablets, but it still exists.

Paper books are not clickable and thus do not offer the possibility of “attentional switching”.<sup>134</sup> The only thing people can do with a printed book (regarding its original purpose of reading) is turning pages, leafing through it or putting it away. In accordance with this, digital reading has been found to be more shallow than reading print and to be more vulnerable to distractions.<sup>135</sup>

Anyway, in a recent study Anne Mangen and Don Kuiken found no significant difference between tablet or print book reading regarding narrative realism, cognitive perspective taking and the three variables indicating immersion: lost self-awareness, sense of presence and lost sense of time with regard

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<sup>130</sup> van der Weel, ‘Convergence and its discontents’, p. 151.

<sup>131</sup> Mangen, *New narrative pleasures?*, p. 188.

<sup>132</sup> Mangen and Kuiken, ‘Lost in an iPad’, p. 169.

<sup>133</sup> *Leesmonitor*, ‘Leesgedrag E-boeken’.

<sup>134</sup> Mangen, *New narrative pleasures?*, p. 188.

<sup>135</sup> For an overview see: Mangen, ‘Hypertext fiction reading’, pp. 406ff.



to fiction.<sup>136</sup> This challenges the phenomenological argument made above, that immersion is harder to obtain on screens than on paper. But as to the experiment they undertook, there are some factors that might have influenced the outcome of the study: The settings of the tablets used were fixed to a certain way and the participants were asked specifically to only read the text. In an environment like this, a scientific experiment, people are much less likely to act as they would in their leisure time, where they might not be as focused on carrying out a given task. So the claims made above regarding the attentional aspects of online reading remain valid. But the study nevertheless indicates that reading from the different surfaces is the same regarding immersion, which refutes the theoretical argument made about the phenomenological effects of immateriality. Yet to be completely sure, more research in this area needs to be carried out.

What is certain: it is much harder to immerse in a device that allows for attentional switching. E-readers and tablets offer more and more distractions with every new device and the features that are some of the strongest advantages of e-reading (the possibility to carry a whole library on one device, immediate access and the opportunity to switch typefaces etc.), are factors that actually hinder the immersion in the text.

So far, because people tend to read shorter snippets and less deep digitally, the impatient mode of “snacking”

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<sup>136</sup> Mangen and Kuiken, 'Lost in an iPad', pp. 161ff.

information is prevalent on screens. However, it is not impossible that we could develop different modes of reading online, parallel to our different modes of reading print: a newspaper is read differently than a personal note, than a short story. This is also suggested by reading-researcher Maryanne Wolf: she is optimistic that people can learn to read deeply on screens, if trained properly – that is why she is currently working on apps to teach this skill to students.<sup>137</sup> Different reading modes on screens would facilitate deep reading of electronic books, although it is not clear to what extent.

### 1.3. Cognition and Reading

One of the most striking aspects of immersion is that it is effortless.<sup>138</sup> It has been stated often that reading on screens is more laborious than on paper and many people still print out texts if they need to read them quickly, thoroughly, or both. But it is a well-known observation in cognitive science that the perception of one's own behaviour can be different than the actual practice and neural activity. In a study using eye tracking and brain activity measuring from 2014, it was found that the reading effort is perceived a lot higher than it actually is: the measured cognitive efforts are the same on paper, tablet

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<sup>137</sup> *The New Yorker*, 'Being a better online reader', 16.7.2014, <<http://www.newyorker.com/science/maria-konnikova/being-a-better-online-reader>> (12.05.2016).

<sup>138</sup> Nell, *Lost in a Book*, p. 75.

and e-reader. Also, according to the authors of this study, older people with lessened eyesight read more effortlessly on screens, possibly because of the higher contrast between text and background.<sup>139</sup>

Research on the differences of comprehension between reading on screen and on paper is inconsistent. There are studies stating that reading comprehension is better for printed books<sup>140</sup> and others showing that there is no difference between paper and screen.<sup>141</sup> But one factor that contributes to comprehension is the sense of location in a text. This sense was found out to be lower on screens than on paper, as there is uncertainty about the reader's location in the text.<sup>142</sup> This is connected to the before discussed invisibility of objects: the parts that one cannot see in an electronic device are not in relation to the visible parts; the pages not yet read are not perceivable other than through small visual cues on the screen. This leads to uncertainty about ones location in the text and its length and thus, getting a sense of the general structure of a text is harder.<sup>143</sup> Add in zooming and screen rotation and the

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<sup>139</sup> Kretschmar et al., 'Subjective Impressions Do Not Mirror Online Reading Effort'.

<sup>140</sup> For example H. Jeong, 'A comparison of the influence of electronic books and paper books on reading comprehension, eye fatigue, and perception', *The Electronic Library*, 30/3 (2012), pp. 390-408, DOI: 10.1108/02640471211241663.

<sup>141</sup> For example S. J. Margolin et al., 'E-readers, Computer Screens, or Paper: Does Reading Comprehension Change Across Media Platforms?', *Applied Cognitive Psychology*, 27 (2013), pp. 512-519, DOI: 10.1002/acp.2930.

<sup>142</sup> Mangen and Kuiken, 'Lost in an iPad', p. 160.

<sup>143</sup> *Ibid.*, p. 152.

sense of location gets lost even more.<sup>144</sup> When reading on paper on the other hand, readers have “immediate sensory access” to the text which makes it easier to locate what and “where” one is reading in the context of the book.<sup>145</sup> If the reader experiences this spatial representation of the text, reading comprehension is strengthened.<sup>146</sup>

This “sense of the text” might matter especially when reading narratives because those are usually a series of chronologically ordered events which are supported by sensory modalities. A kinaesthetic experience of pages going from one hand to the other, parallel to the progressing of the story, increasing and decreasing the paper stacks in each hand, may enhance immersion.<sup>147</sup> This has not been ultimately verified yet, but the most recent study concerned with this, which has not been officially published so far, finds that when people read on paper, they are more able to reconstruct the chronological order of events of the plot.<sup>148</sup>

Also, in a study about brain reactions to advertisements which was conducted by the market research company *Millward Brown* in cooperation with Bangor University, the researchers found out that “tangible materials leave a deeper footprint in the brain”, not only because material objects

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<sup>144</sup> Mangen and Kuiken, ‘Lost in an iPad’, p. 164.

<sup>145</sup> *Ibid.*, p. 152.

<sup>146</sup> *Ibid.*, p. 164.

<sup>147</sup> *Ibid.*, p. 152.

<sup>148</sup> *The New Yorker*, ‘Being a better online reader’.

activate two senses (sight and touch), but also because they stimulate the area of the brain that deals with integrating spatial and visual information.<sup>149</sup> This makes the information more “real” and more connected to memory.

In conclusion, it is not yet completely clear if reading comprehension and effort are much different on the two substrates and immersion is possible in both printed and electronic texts. However, the materiality of printed books supports the sense of location in a text, which leads to slightly superior comprehension and memory. The property of printed books that they do not offer possibilities for attentional switching will stay an advantage until and if people learn to read in different modes online and acquire the skill to resist the digital temptations.

## **2. Emotions**

### **2.1. Emotional Processing**

Emotions strongly influence appraisal of situations and experiences, and vice versa.<sup>150</sup> In the German study quoted above, 43% of people said that they have an emotional relationship with their books and that they are part of their

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<sup>149</sup> Millward Brown and the Center for Experimental Consumer Psychology of Bangor University, 'Using Neuroscience to Understand the Role of Direct Mail', Case Study 2009, p. 2, <[http://www.millwardbrown.com/docs/default-source/insight-documents/case-studies/MillwardBrown\\_CaseStudy\\_Neuroscience.pdf](http://www.millwardbrown.com/docs/default-source/insight-documents/case-studies/MillwardBrown_CaseStudy_Neuroscience.pdf)> (11.05.2016).

<sup>150</sup> D. Miron, 'Emotion and Cognition in Entertainment', in J. Bryant and P. Vorderer (eds.), *Psychology of Entertainment* (New Jersey: Lawrence Erlbaum Associates, 2006), pp. 343-364 (349).

personality.<sup>151</sup> The main part of this emotional relation stems undoubtedly from the story that is read, from the “narrative emotions”.<sup>152</sup> But it also makes a difference and modifies emotions on what substrate people read; this evokes “aesthetic emotions”.<sup>153</sup> A beautifully designed book can influence how the reader experiences the story, or if someone tries out an e-reader and really likes the book she reads on it, this influences her assessment of the technology positively.

The above cited study by *Millward Brown* and Bangor University found out that physical material involves more emotional processing than digital media. It evokes more emotional memories and three specific brain areas that are involved in emotional processing and engagement show stronger activity when presented with printed material.<sup>154</sup> Also, the brain activity indicates that a person is more focused on her own thoughts, feelings, and emotional response, when viewing physical, printed media; the individual effect is all in all greater.<sup>155</sup>

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<sup>151</sup> *Börsenverein des deutschen Buchhandels*, ‘Pressemappe Buchkäufer und -leser 2015. Profile, Motive, Einstellungen’, p. 33, <[http://www.boersenverein.de/sixcms/media.php/1117/Buchk%C3%A4ufer\\_und\\_leser\\_2015\\_Pressemappe.pdf](http://www.boersenverein.de/sixcms/media.php/1117/Buchk%C3%A4ufer_und_leser_2015_Pressemappe.pdf)> (13.04.2016).

<sup>152</sup> R. A. Mar et al., ‘Emotion and narrative fiction: Interactive influences before, during, and after reading’, *Cognition and Emotion*, 25/5 (2011), pp. 818-833 (822), DOI: 10.1080/02699931.2010.515151.

<sup>153</sup> *Ibid.*

<sup>154</sup> *Millward Brown* and *Center for Experimental Consumer Psychology* of Bangor University, ‘Using Neuroscience’, p. 2

<sup>155</sup> *Ibid.*, pp. 2f.

Even though emotional involvement in a story is mainly dependent on the text itself, material substrates like printed books are more likely to engage the reader emotionally.

## 2.2. Emotions Towards Objects

Not only the emotional engagement is different for printed books and electronic reading, but also the sentiment towards the substrates themselves. There are techniques to measure emotions towards objects, but they have not been applied yet to printed books or electronic reading devices.<sup>156</sup> In general though, emotional attachment to a current object, in this case the printed book, strongly deters people from adopting a new technology despite the utilitarian values it might offer.<sup>157</sup>

Paper books often mean more to a person than their content. As Donald Norman writes in his book *Emotional Design*: “These objects are more than utilitarian. [...T]hey lighten up my day.”<sup>158</sup> People emotionally attach to objects, even if they are only the container for the source of the emotion: the story. This emotional relation between the person and the object is mainly determined by the symbolic value of

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<sup>156</sup> For an overview see Khalid and Helander, ‘Customer Emotional Needs in Product Design’, p. 203.

<sup>157</sup> Waheed et al., ‘Emotional attachment and multidimensional self-efficacy’, p. 1148.

<sup>158</sup> D. A. Norman, *Emotional Design. Why we Love (or Hate) Everyday Things* (New York: Basic Books, 2004), p. 4.

the “thing”.<sup>159</sup> This comes from the value of the story, which is transferred onto the object; the content is epitomised. But the value can also stem from the autograph of the author inside it, a handwritten personal dedication or annotations by someone else, or by the fact that one edition is always admired by visitors. The attachment to a paper book is created through memories:<sup>160</sup> What we felt when we read it, who gave it to us, where we read it, the provenance of the book etc. Material books thus can become personal artefacts, brimming with emotional triggers.

If someone looks at an e-reader lying on the table, she might remember the most recent book read or the favourite one. But the number of memories attached to an object is finite: in order to remember more than a few books recently read on a single device, the reader needs to go to the platform that gives access, to see all the covers of the e-books bought. The device itself cannot store all the memories that a pile of books can and it also cannot embody all the stories read on it. What people feel towards it is dynamic, depending on the most current experiences. Walking by a bookshelf, there is a dimension of chance on which book our eye might fall, we can browse through our memories.

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<sup>159</sup> D. McDonagh, A. Bruseberg and C. Haslam, ‘Visual product evaluation: exploring users’ emotional relationships with products’, *Applied Ergonomics*, 33 (2002), pp. 231–240 (231).

<sup>160</sup> Schifferstein et al., cited after J. Chapman, *Emotionally Durable Design. Objects, Experiences & Empathy* (London/New York: Routledge, 2015), p. 68.



Because paper copies are scarce, in contrast to digital ones, they are more unique and feel more individual. Also, second hand printed books keep a charm of their own that many people still treasure, for example annotations or finding old bookmarks by chance, making the book more special. To quote Norman again: with material objects, “each conveys a personal meaning: each has its own story.”<sup>161</sup>

The emotional attachment to electronic devices, for example tablets, can be strong, too, as they often hold personal information, photos and communication. But E-readers and tablets are not produced to be used for decades as they were designed for the “disposable mindset of consumer electronics”<sup>162</sup> and will be replaced at one point. The content might be transferred to a new device, but this temporality is likely to lessen the intensity of the emotions towards the object.

Emotional attachment is stronger for material books than for electronic books and devices. However, these aspects might not influence someone’s decision for analogue or digital reading in general, as these processes are usually unconscious. And even if people are aware of them, they might still read electronically and only keep and buy the most important, personally meaningful books as paper editions.

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<sup>161</sup> Norman, *Emotional Design*, p. 4

<sup>162</sup> Liu, K., ‘When Ebooks are the only “Books”’, *LOGOS*, 21/3-4 (2010), p. 123-132 (126), DOI: 10.1163/095796511X560015.

### 3. Sensory Modalities

Though deciphering letters and words is done with the eyes, reading is actually multi-sensory.<sup>163</sup> Many people prefer printed books because they “feel better”; even those teenagers that generally prefer e-books said that the best thing about a printed book is its sensual quality: the feel, the smell and the tactile experience.<sup>164</sup>

The sensory modalities making up an experience are discussed separately here, but they are, as cognitive scientists and phenomenologists agree, one integral system.<sup>165</sup> And everyone’s sensory system is “tuned” to a different reality and thus leads to different perceptions.<sup>166</sup> However, some general remarks can still be made about the different sensory reading experiences on paper and screens.

#### 3.1. Visual Aesthetics

Even though novels are usually bought because of their content, the visual appearance of a book is also an influencing factor. Many people enjoy the aesthetic characteristics of paper books like their jacket covers, typography and illustrations.<sup>167</sup>

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<sup>163</sup> Mangen, ‘Hypertext fiction reading’, pp. 404ff.

<sup>164</sup> Tveit and Mangen, ‘A joker in class’, p. 182; Mangen and Kuiken, ‘Lost in an iPad’, p. 169.

<sup>165</sup> Mangen, *New narrative pleasures?*, p. 148.

<sup>166</sup> Ibid.

<sup>167</sup> Chen and Granitz, ‘Adoption, rejection, or convergence’, p. 1221.

On e-reading devices, the reader chooses one font and all the books appear in it, until it is changed again. Although the possibilities of individualising the appearance of a book can be practical, as discussed above, some readers might feel that it is rather bothersome to have to make decisions about the form themselves. They might just want to start reading from a well-designed page, without for example the aesthetically crude consequences of poor automatic justification and hyphenation or having to decide which font suits which text best.

There are hundreds of different fonts used in printed books, as well as colour schemes, formats, dust jacket designs etc. and even serials have page layouts that have been composed to look agreeable. For these books, someone actually sat down to design them from spine to fore edge, often giving them a distinct aesthetical appearance (although there are of course poorly designed paper books as well).

From a technical point of view, digital images can have such a high resolution today that even extreme zooming in does not affect the clarity of the image; there can be as many pixels per inch in a digital image as there can be dots per inch on paper. But for example the surfaces of glossy pictures on matte paper cannot be distinguished on a screen. Thus, an edition of Dante Alighieri's *Divine Comedy*, illustrated by Gustave Doré will always be a different experience on paper

than on a screen. Accordingly, reading on an electronic device is reported to have “less character” than a paper book.<sup>168</sup>

Regarding legibility, some researchers propose that *E ink* devices (or tablets in certain circumstances)<sup>169</sup> are actually better than paper.<sup>170</sup> Additionally, there are now special fonts for e-reading that look good in every size and on all displays and devices, for example “Bookerly” for *Kindle* and “Literata” for Google’s reading app. They have been created for improved reading comfort and readability. But they were also designed to establish a visual brand for the devices or stores they are used on.<sup>171</sup> Those fonts might improve reading experiences as they are better fitted for digital purposes, but it is a mistaken belief that one font really works well for every single book.

To be appealing to readers who care about good typography and layout, publishers should offer a “recommended version” including font, size etc. So far, e-books are still tightly tied to the conventions that developed over hundreds of years for printed books. But in the future, new visual ideas regarding the design of e-books might be conceived, giving readers a different, enjoyable reading experience.

There are some visual features that electronic devices cannot provide, for example the different impressions of

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<sup>168</sup> Chen and Granitz, ‘Adoption, rejection, or convergence’, p. 1221.

<sup>169</sup> Kretzschmar et al., ‘Subjective Impressions Do Not Mirror Online Reading Effort’, n. p.

<sup>170</sup> Benedetto et al., ‘E-Readers and Visual Fatigue’, n. p.

<sup>171</sup> *Typetogehter*, ‘Literata’, <<http://www.type-together.com/literata>> (12.05.2016).

different paper surfaces. But when the technical issues regarding automatic adjustments will be solved and e-books find their own designs, detached from print paradigms, their visual aesthetics may become as agreeable as printed books are perceived today, although of course in a different way. Also, digital representation offers possibilities like moving images or sound that are not available for analogue reading.

### 3.2. Touch and Feel

The haptic (feeling with the extremities) and the tactile (skin sensations, pressure, temperature etc.) reading experience differ greatly between printed books, e-readers and tablets.<sup>172</sup> Books on e-reading devices all feel the same and do not give any specific haptic signals connected to the content. But besides that, flipping through the paper pages of a book is tactilely richer than swiping or clicking on a screen.<sup>173</sup> Not only the book as a whole is three-dimensional, but also the pages themselves: they can be bent, folded, flicked through and so forth, there can be textured dust jackets or ribbon bookmarks. Also, different kinds of paper or printing techniques can be used, adding another tactile dimension, making the experience more sensory still.

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<sup>172</sup> Mangen, *New narrative pleasures?*, p. 150f.

<sup>173</sup> Mangen, 'Hypertext fiction reading', p. 405.

As said above, many people like the “feel” of paper books in their hands. But others actually appreciate sleek digital devices just as much, or even more.<sup>174</sup> Haptic and tactile preferences thus come down to individual taste, even though so far, more people appreciate the richer sensory modalities of printed books. This is also true for the olfactory sense: many readers like the smell of new or old paper and ink (there is even a perfume developed by a publisher that is supposed to smell like freshly printed books),<sup>175</sup> others do not.

#### 4. Trust and Reliability

In the German study quoted above, 39% of the participants said that content in printed books is more reliable than in digital editions.<sup>176</sup> Even though the accuracy of objective information is not very important in fiction, a printed book still implies trustworthiness, because there was obvious effort put into producing it and more than one person (the author) approved of it. Also, there are no options to change the content in a few seconds, like for example with the *Clean Reader* app mentioned above.

When choosing an e-book, it is harder to find out which books have been edited and which ones are self-published

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<sup>174</sup> Chen and Granitz, 'Adoption, rejection, or convergence', p. 1221.

<sup>175</sup> Steidl, 'Paper Passion Perfume', <<https://steidl.de/Buecher/Paper-Passion-Perfume-0332496160.html>> (12.05.2016).

<sup>176</sup> Börsenverein des deutschen Buchhandels, 'Pressemappe Buchkäufer und -leser 2015', p. 23.

without even having been proofread. Thus, quality signals like a well-known publisher's name, are much more important in the digital context. Selecting an e-book can involve more effort and risk than picking a printed one because judging the nature and quality of an electronic book is harder: instant, easily interpretable indications like a carefully designed hardcover, the quality of the paper, the size and binding of a book and so forth are non-existent in a digital environment. In many cases though, especially if the decision to buy a book has been made independently, for example because of a review in a newspaper, this issue is not relevant.

A related issue is the frequently observed untrustworthiness of online recommendation systems. It is known that recommendations and comments can be bought, for example by the publisher or the author to enhance their success, or they can be manipulated otherwise. This of course also applies for printed books purchased online, but as e-books are solely bought from online platforms like Apple's *iTunes Store* or the Amazon e-book store, where ratings are very important, this applies here especially.

To buy and read a book online, the reader has to trust in the technology and the humans behind it – only then can she trust the specific interaction on the internet.<sup>177</sup> Buying something online via e-commerce always bears more risk than

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<sup>177</sup> B. Friedman, P. H. Kahn and D. C. Howe, 'Trust Online', *Communications of the ACM*, 43/12 (2000), pp. 34-40 (37).

going to a bookstore and paying in cash. So far, there are only a few indicators for online security that are dependable; the amount of different online trust seals on websites is bewildering. Also in regard to data collection in e-readers and platforms, there is a higher insecurity connected to electronic reading, as has been discussed.

Reading e-books always entails dependency on the supplier, as e-books are not sold, but given access to. This is negative insofar as the supplier stays in control of the books, and can withdraw them in the worst case from the devices. This has occurred for example when Amazon erased editions of (ironically) George Orwell's *1948* from people's *Kindles*, because a third party without the proper rights added them to the store.<sup>178</sup> Likewise, a whole personal digital library was deleted by Amazon because a customer downloaded content not legally available in the region she was living in.<sup>179</sup> Although Amazon has promised to improve, this shows the power of the supplying platforms and the dependency of readers on their policies and practices.

Using an electronic device generally involves higher dependencies than reading a printed book: the reader has to trust that the device will work, that the servers do not go

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<sup>178</sup> *The New York Times*, 'Amazon Erases Orwell Books from Kindle', 17.7.2009, <<http://www.nytimes.com/2009/07/18/technology/companies/18Amazon.html>> (07.05.2016).

<sup>179</sup> *The Guardian*, 'Amazon wipes customer's Kindle and deletes account with no explanation', 22.10.2012, <<http://www.theguardian.com/money/2012/oct/22/Amazon-wipes-customers-kindle-deletes-account>> (07.05.2016).



down, that the supplier stays in business, that the text is formatted correctly and can be displayed on the device, that the internet connection is stable, and so forth. A printed book on the other hand is stable, it does not change and does not need upkeep. It is also more “secure” as there is essentially no danger of losing personal data.

Essentially, buying an e-book requires a lot more trust in more stakeholders. This is due to the inherent properties of digital files: that they have to be displayed in some way, that they are dynamic and easily erasable. To buy and read a printed book, a less strong basis of trust is needed, as, once bought, its existence and readability is independent of third parties and its “functioning” can be assessed in a few seconds.

## 5. Buying a Book

Browsing and discovering new books of all sorts has moved partly online due to convenience and vast choices. However, 64% of Germans still buy books after browsing in a brick-and-mortar shop.<sup>180</sup> And actually, more people buy a book in a store after discovering it online than the other way round.<sup>181</sup> Many readers still choose the less convenient and often more expensive way of getting hold of a new book because it is a

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<sup>180</sup> Börsenverein des deutschen Buchhandels, 'Pressemappe Buchkäufer und -leser 2015', p. 37.

<sup>181</sup> Ibid., p. 42.

different experience: bookshops can be places that mediate social interactions, especially in the numerous shops that combine books with coffee culture.<sup>182</sup>

Browsing in a bookshop and finding the new favourite novel coincidentally is very difficult online as there are, depending on the website, usually algorithms at work defining what one sees. This can of course be an advantage, because readers only get to see books they might actually be interested in, but on the other hand it keeps people in their own personal bubble of homogenous topics and genres.

A second aspect that can be perceived as either beneficial or confounding is the huge variety of platforms where people can look for an e-book: there are publisher's websites, *Google Books*, *Project Gutenberg*, self-publishing websites and the *iTunes Store* just to name a few.<sup>183</sup> Choosing a book might also depend on the format that the owned device is able to display, and the platforms it can be connected to. When purchasing a printed book on the contrary, the reader can buy anything they want in every format and in every bookstore.

“Buy local” initiatives are gaining momentum and people still seem to value the real life experience of going to a shop, maybe talking to a person and spending time leafing through books, even though they can be bought more easily, quickly and often at lower prices online. However, if someone

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<sup>182</sup> Chen and Granitz, 'Adoption, rejection, or convergence', p. 1224.

<sup>183</sup> van der Weel, 'Convergence and its discontents', p. 152.

decides to read e-books, the matter is practically decided as today, only few offline bookstores sell e-books. However, a store can be imagined, where the readers browse through the physical books and download the electronic version directly on-location.

How much influence the experience of buying book actually has on the decision of format is hard to fathom. But the example of Amazon's two new physical bookstores (and there are rumours that they will open many more) shows the importance of the shopping experience. Richard Mollet, who was then chief executive of the Publishers Association summarized in November 2015, that "even Amazon has seen the benefit of a physical browsing experience."<sup>184</sup>

## 6. Image

The desire to gain social status can be a strong motivation to adopt an innovation.<sup>185</sup> But social status can also be the reason why people stick with what they know: the Börsenverein-study quoted above found that 21% of the participants said that for them, printed books are an important status symbol.<sup>186</sup>

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<sup>184</sup> *The Guardian*, 'Amazon begins a new chapter with opening of first physical bookstore', 3.11.2015, <<https://www.theguardian.com/technology/2015/nov/03/Amazon-books-seattle-store-opened-university-village>> (24.05.2016).

<sup>185</sup> Rogers, *Diffusion of Innovations*, p. 213.

<sup>186</sup> *Börsenverein des deutschen Buchhandels*, 'Pressemappe Buchkäufer und -leser 2015', p. 33.

The cultural symbolism and status of the printed book has already been described: they generally confer knowledge and culture for a relatively low price. The following part is about what individual persons want to demonstrate through the symbolism inherent in the printed book or the electronic device, so how the substrate is congruent with the self-image readers want to exhibit. Objects can be seen as extensions of the self, as medium that transmits information, like social status.<sup>187</sup> Through this “symbolic consumption”, possessions are used to express identity.<sup>188</sup>

Conferring status through e-books is possible, but only on some platforms online. Reading on a Kobo device for example, one can get connected with friends and see their libraries, what they are currently reading, the “awards” they won for completed tasks (some related to reading; some not) and even their reading statistics. But on the big social platforms like Goodreads or Facebook, everybody can add books without costs to their virtual bookshelf, without having read a single page or possessing a copy of any kind. Because this can be done with one click and without costs, people are more likely to suspect that they have not been read than is the case with printed books; self-representation on the internet is known to be exceedingly distorted. So far, the status of online bookshelves depends on the platform: a “verified” bookshelf

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<sup>187</sup> C. Zeller, ‘From Object to Information: The End of Collecting in the Digital Age’, *Arcadia*, 50/2(2015), pp. 389-409 (393), DOI: 10.1515/arcadia-2015-0027.

<sup>188</sup> McDonagh, Bruseberg and Haslam, ‘Visual product evaluation’, pp. 231f.

like on Kobo is more credible (and thus conveys more status), than one on Facebook. The development of virtual bookshelves which are actually visible in the home (like the one envisioned in Susana Tosca's article "Dreaming of e-reading futures")<sup>189</sup> is far from realisation today and thus, e-books can hardly communicate an image in the offline world.

Conferring status through electronic devices like e-readers or tablets is on the other hand possible offline: for example the image of a person of technical sophistication or wealth.<sup>190</sup> But also, e-reading could suit avid readers, as it implies and transmits the reading of a lot of books.<sup>191</sup> However, because e-reading triggered an increased interest in genre fiction like romance and fantasy novels, reading on an electronic device can also be seen as reading less literary books, but rather "easy entertainment".

Image is today in big parts communicated through social media channels, and printed books, even though being artefacts of an analogue world, are actually surprisingly present on these platforms. On Instagram for example, the hashtag #booklover returns over 260.000 photos; of the first hundred only four show e-readers, the rest shows printed

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<sup>189</sup> S. Tosca, 'Dreaming of e-reading futures', *Digital Creativity*, 26/2 (2015), pp. 83-91 (86-91), DOI: 10.1080/14626268.2015.1046082.

<sup>190</sup> C. Antón, C. Camarero and J. Rodríguez, 'Usefulness, Enjoyment, and Self-Image Congruence: The Adoption of e-Book Readers', *Psychology and Marketing*, 30/4 (2013), pp. 372-384 (375), DOI: 10.1002/mar.20612.

<sup>191</sup> *Ibid.*, p. 376.

books.<sup>192</sup> This becomes even more evident through the term “bookporn”, which turns out hundreds of thousands of photographs of books and bookshelves on basically all social media platforms. So even in the digital sphere, paper books are used to convey status more often than the electronic versions.

Creating an image incorporates the issue of control over the trade-off between visibility and privacy (see table 1).

	Visibility		Privacy	
	<i>Online</i>	<i>Offline</i>	<i>Online</i>	<i>Offline</i>
<b>E-books</b>	YES	NO	NO	YES
<b>P-books</b>	YES	YES	YES	YES

Table 1: The reader’s control over visibility and privacy in the offline and online world.

Online-visibility, which means the deliberate display of books and reading habits on the internet, can be, as stated above, in general the same for printed and electronic books. In the offline world though, nobody can see what a person is reading (or even doing) on a tablet or e-reader, if it is not specifically shown to them. The e-book is thus inherently invisible in the material reality and one can hardly create a specific image through it – this is only possible through the device (e.g. with a certain kind of device or a sleeve). On the other hand, it is very

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<sup>192</sup> Retrieved the 15.5.2016.

hard to read digitally without leaving traces and without data getting collected. So the reader of an e-book cannot display the book offline, and also has no control over her privacy online.

With a printed book, the reader has more control: it is a lot easier to send out an individual message, through the cover of the book, the format etc., but one can also hide the book with a jacket. Regarding the web, the reader also has total control if she wants her reading to be visible online, or not at all.

Regarding image congruency, it depends on the individual reader and how she wants to present herself; whether the connotations of printed books and their visibility match her image, or electronic devices. However, the reader has more control over the terms of visibility and privacy when reading a printed book.

## 7. Ownership

E-books are usually not owned; the money paid for them only buys access. These books thus have transitioned from being a product to being a service.<sup>193</sup> Many readers today, even young readers who grew up with the internet and its non-material dimensions, still tend towards reading printed books when reading for entertainment as they like owning the book better

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<sup>193</sup> A. van der Weel, 'From Ownership to an Access Economy of Publishing', *LOGOS*, 25/2 (2014), pp. 39-46 (44), DOI: 10.1163/1878-4712-11112043.

than to only get access.<sup>194</sup> As “buyers are not necessarily readers”,<sup>195</sup> a German study from 2008 found out that 10% of the book buyers are either “Regalsteller”, who buy more books than they read or book-buying non-readers.<sup>196</sup> This shows that to own a book is important because of its presence in the home and the status it confers as ownership establishes connections between the object and the identity of the owner.<sup>197</sup> “Things do not become personal because we have selected some alternatives from a catalogue of choices. To make something personal means expressing some sense of ownership.”<sup>198</sup>

On the other hand, for those people, who read a book merely as diverting entertainment (those who might throw away or sell books after they read them), access is more important and more practical than ownership of a physical book. But even if people perceive e-books as belonging to them, the sense of ownership is reduced with digital content, and people tend to have a lesser sense of achievement when looking at their digital library than looking at their material bookshelf.<sup>199</sup>

If there is a difference regarding the emotional connection to the story itself if a book is owned or only

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<sup>194</sup> Merga, ‘Are Teenagers Really Keen Digital Readers?’, p. 32ff.

<sup>195</sup> van der Weel, ‘From Ownership to an Access Economy of Publishing’, p. 43.

<sup>196</sup> Börsenverein des deutschen Buchhandels, ‘Buchkäufer und -leser 2008’, p. 2, <[http://www.boersenverein.de/sixcms/media.php/976/Buchkaeuffer\\_und\\_Leser\\_2008\\_kurz.pdf](http://www.boersenverein.de/sixcms/media.php/976/Buchkaeuffer_und_Leser_2008_kurz.pdf)> (14.05.2016).

<sup>197</sup> Chen and Granitz, ‘Adoption, rejection, or convergence’, p. 1223.

<sup>198</sup> Norman, *Emotional Design*, p. 220.

<sup>199</sup> Chen and Granitz, ‘Adoption, rejection, or convergence’, p. 1221.



accessed, needs to be researched further than what is known already: that people value things more if they own them (“endowment effect”).

E-books are infinitely reproducible, and with this abundance comes the tendency to hold on to and even collect scarce objects that confer saliency, to distinguish oneself from others.<sup>200</sup> There are many different reasons for collecting books, but it is generally still tightly connected to material things and our emotions towards them: as Walter Benjamin writes in his essay “Unpacking my library”, collectors have a “relationship to objects which does not emphasize their functional, utilitarian value – but studies and loves them as the scene, the stage, of their fate”.<sup>201</sup> Fate here refers to the Latin *pro captu lectoris habent sua fata libelli* (“According to the capabilities of the reader, books have their fate”), saying in essence that the reader’s appropriation (in terms of content and symbolic value) defines the book. As discussed above, emotional connections to objects are stronger than to digital files. And even though there might be beautiful electronic editions worth “collecting”, libraries of e-books have a temporary nature as e-books are *simulacra*, copies without an original that are “temporary actualizations of a binary code that lies dormant within an electronic storage device”.<sup>202</sup>

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<sup>200</sup> Zeller, ‘From Object to Information’, p. 393.

<sup>201</sup> W. Benjamin, ‘Unpacking my Library’, *ibid.*, *Illuminations* (New York: Harcourt, Brace & World, 2009), pp. 59-68 (60).

<sup>202</sup> Zeller, ‘From Object to Information’, p. 397.

But this aspect of collecting might lose its importance over time, as has happened with music and movies: even people who feel strongly about for example a band, resort oftentimes to owning their albums digitally. This might apply to giving presents: the bond to materiality could dissolve if a digital mindset develops that values digital content as much as material objects. Digital gifts, like vouchers for music downloads, are already sold by all major internet players, and gift cards for online redemption are available at most supermarkets. So far, the symbolism and meaning of material gifts and ownership is strong, but it is conceivable that this will change, especially for the part of society that is very active in the digital world anyways.

Ownership of the material object is still important to many readers. But as the communication of status moves online and more and more people are satisfied with access to for example music and films, this might decrease in the future. Whether readers prefer ownership or access relies on their idea of status, their habits (like for example one-time or re-reading of books) and their emotional relationship with books.

## **8. Social Reading**

Reading has been a largely solitary activity, at least in the last centuries. But there have always been social reading possibilities like book clubs or community reading campaigns

like “One City One Book”<sup>203</sup>. These social book activities are however not linked to the material book – they can just as well be participated in with e-books.

In fact, electronic reading offers many new opportunities for social reading that printed books never will be able to provide, making reading more of a social experience.<sup>204</sup> The *Kindle* for example is equipped with the “Popular Highlights” function which lets readers see what all other *Kindle*-users highlighted in a book. Furthermore, the “Public Notes” feature lets readers publish their highlights and annotations, follow other readers and directly see their comments in one’s own text. Equivalent to this in a printed book would only be annotations by former readers, which is different in scope and often purpose (for example for private re-reading).

The reader can furthermore share snippets of texts on social media and the digital book thus becomes the opening of many “participatory and productive activities”.<sup>205</sup> E-books can be imagined as the starting point for global conversations among readers, as well separated geographically as temporally.<sup>206</sup> Social interaction is possible on a much wider

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<sup>203</sup> For example by the Dublin City Council: Dublin One City One Book, <<http://www.dublinonecityonebook.ie/or>> (29.06.2016) or similar in Berlin: Eine Stadt ein Buch, <<http://2012.einestadteinbuch.at/>> (29.06.2016).

<sup>204</sup> N. S. Baron, *Words Onscreen, The Fate of Reading in a Digital World* (Oxford: Oxford University Press, 2015), ‘Not Long; Please Read: A Preface’.

<sup>205</sup> A. Mrva-Montoya, ‘Beyond the Monograph: Publishing Research for Multimedia and Multiplatform Delivery’, *Journal of Scholarly Publishing*, 46/4 (2015), pp. 321-342 (329).

<sup>206</sup> K. Liu, ‘When Ebooks are the only “Books”’, p. 128.

scope when reading e-books, one can have discussions with people one has never met, with multiple others and where and whenever one wants to.

How this influences the act of reading has not been researched yet, but it is plausible that the reader's attention gets directed to specific parts of a text which have been highlighted by others, and their own judgement becomes less relied on. Also, it could influence the involvement in a story, for example lessen the individual emotional response if the reader sees that thousands of other people were moved by the same passage. Printed books preserve the solitude of reading; being in a digital environment is always in some aspect social, because the data is collected and displayed and other people's reactions are only one click away.

“Community-enriching reading practices” such as giving books away, sharing and selling used ones might be just as well possible in the future with e-books (lending is already possible).<sup>207</sup> But digital books do not provide the same bonding experience that printed ones can, for example when sharing books with friends or family, because real life communities and relationships are deeper and more developed than digital ones.<sup>208</sup> Offline discussions about books are also more likely to be set off by a printed book lying around than an e-reader or tablet.

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<sup>207</sup> Liu, 'When Ebooks are the only "Books"', p. 126.

<sup>208</sup> Chen and Granitz, 'Adoption, rejection, or convergence', pp. 1221ff.

Reading electronic books adds many possibilities for social interaction that printed books do not have. Printed books on the other hand are more likely to trigger offline discussions because of their visibility, and also provide solitude. So this question again comes down to the reading habits of people, and if they prefer social interaction when reading, or isolation.

## **E. CONCLUSION AND OUTLOOK**

There are good reasons for buying e-books today, like availability, portability, customization, nearly endless storage and social reading opportunities. These important advantages all arise from the property of being connected to the internet, which is in turn based on the characteristic of being an electronic device. However, the internet connection is also responsible for major drawbacks: the fragility of the device, its dependence on multiple third parties and technologies, its format restrictions, attentional distractions and privacy and security issues.

Printed books cannot provide the reader with the possibilities of the internet. But this is not only a disadvantage; it also has the positive effects of paper books being more robust, secure, private, independent, reliable and being more in control of the reader. They also engage the reader more emotionally and have richer sensory modalities. In the end though, it is not a binary choice between the substrates. People

often read on different devices, many are “hybrid readers”<sup>209</sup>, using different books in different situations and needs. This however does not mean the printed book will disappear – it is a valuable alternative with unique properties.

In the future, some e-reading functionalities will be developed further to make e-books more attractive and comfortable to read. It has taken quite long to develop the codex into its perfect form as it is today and digital reading will also need more than the few years that have already passed since its existence, to reach its maximum usability. Some new developments will bring e-reading experiences closer to reading on paper, for example devices that show what is read for everyone to see or flexible and robust screens. Susana Tosca for example imagines a reading chair, in which one sits with a blanco codex and the content of the wanted book gets projected on the pages.<sup>210</sup> But to fulfil their potential, e-books also need to free themselves from our expectations, which are born from printed books and become more their own form, especially regarding design.

There are already new technologies that can inspire advanced reading devices, for example conductive paint that could allow a paper book to be connected to the internet.<sup>211</sup> But even then, the aforementioned drawbacks of connectivity exist; whatever devices will be developed, if they are connected

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<sup>209</sup> *The New York Times*, ‘The Plot Twist’.

<sup>210</sup> Tosca, ‘Dreaming of e-reading futures’, pp. 86-91.

<sup>211</sup> *Bare Conductive* <<http://www.bareconductive.com/>> (19.6.2916)

to the internet, this results in issues that can only be solved with offline books.

When asking the question of the survival of printed books, the parallel with music and films is often drawn: both have fallen victim to digitalisation and material records are only of marginal importance today. But this is not what will happen to printed books. Music and films are always mediated, there is always a (electronic) device needed; music cannot be experienced through touching a cassette. And in having to use a device, advantages like robustness, reliability and independence from format and electricity disappear. Also, e-books are not just a different format; they offer a different reading experience. Listening to a CD or a digital file is in essence, the same sounds in our ears. Reading on the other hand is more multisensory and its material features cannot be imitated by digital files.

What seems to be probable though is that dedicated e-reading devices that exist today are not going to be the dominant technology; as has been said before, e-reader ownership has been declining since 2014. Some countries, like South Korea, who have high growth rates for smart devices, even skip the stage of the e-reader completely and turn directly to reading on non-dedicated devices like tablets.<sup>212</sup> And even though people tend to be more satisfied with reading on e-

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<sup>212</sup> Shim, Kim and Altmann, 'Identifying key drivers and bottlenecks', p. 861.

readers than tablets, as a Dutch study shows,<sup>213</sup> the e-reader in its current form is not going to be the device of the future.

However, a new technology might come along that nobody can imagine today, disrupting the whole market, like the iPhone did around ten years ago. And not only the devices are going to change, people might develop new skills for reading online, and maybe a mindset that values digital objects the same as material ones. This would improve electronic reading experiences, but printed books will remain to have significant advantages.

However, the general trend to read less long form texts has not been stopped by digital reading; e-books will not “save” reading, as it is not the devices that keep people from reading long form, but the mentalities and the availability of so many other entertainment possibilities.

Print will not disappear as long as people read novels for fun, similar to the fact that going to museums is still very popular (instead of looking at the collections online), going to the cinema, to concerts and shopping in stores. The experiential factors are too important and paper books have intrinsic properties that e-books, due to their connection to the internet and character as electronic device, cannot replicate.

Paper books are not going anywhere. They are a valuable technology that has its own, important properties which cannot be transported onto an electronic device.

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<sup>213</sup> *Leesmonitor*, ‘Leesgedrag E-boeken’.





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