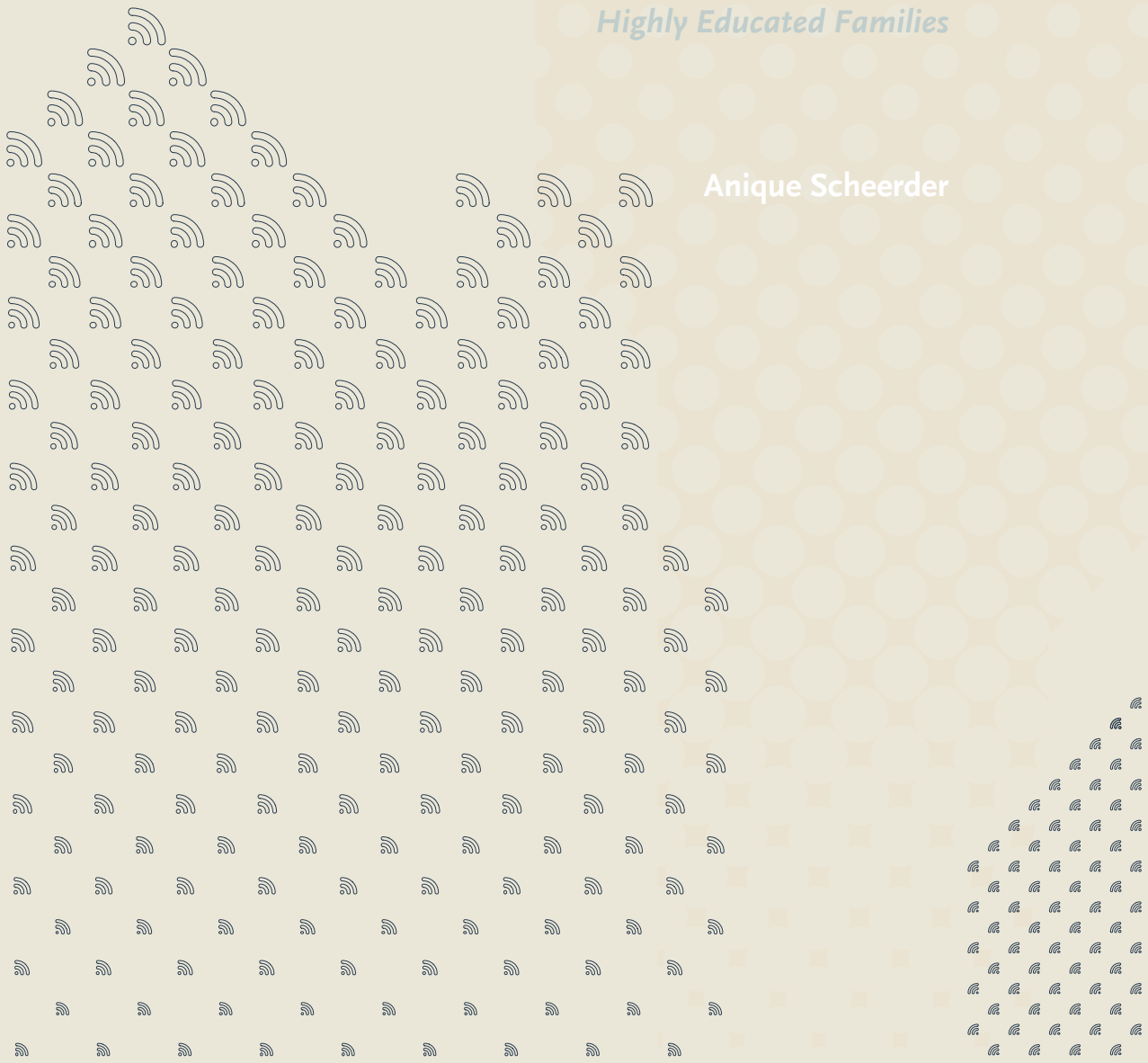# INEVITABLE INEQUALITIES?

Exploring Differences in Internet Domestication Between Less and Highly Educated Families

Anique Scheerder

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Introduction

1.1   Preface

The digital divide entails differences in Internet motivations and attitudes, access, skills, uses and outcomes between populations or segments within a population. While an extensive body of – mainly quantitative – research has provided valuable insights in terms of indicators among which differences occur, digital inequality research suffers from important shortcomings. Although scholars increasingly express their concerns that social disparities are reflected in digital inequalities, there has been limited attention paid to sociocontextual explanations that offer in-depth insights into why identified indicators result in differential Internet access. Furthermore, it remains unclear how the potential tangible benefits of the Internet are related to current notions of inequality. In addition to giving attention to mapping which inequalities exist, this dissertation seeks explanations for those inequalities. The aim is to contribute to our academic understanding of digital divides by unraveling why identified determinants cause digital inequalities. Studying these processes in context will provide guidance regarding how disparities actually arise and where to start reducing these inequalities. The societal goal is to ultimately help reducing social inequalities, as digital inequalities are associated with social disparities. While inequalities feature high on the political agenda, there is only sparse attention paid to the role of technology. By studying how digital disparities are associated with social inequalities, we will contribute to digital divide policy by providing policy makers with input in terms of explanations. In doing so, this dissertation might ultimately aid in diminishing both types of inequality.

   This chapter will continue with an explanation of the current state of digital inequality research and will then proceed with important shortcomings. Subsequently, a description of sociological theory that could explain digital inequalities will be discussed. Finally, a chapter overview shows how digital inequalities will be addressed in this dissertation.

1.2   Digital inequalities

When the Internet was introduced to the greater society in the 1990s, several predictions emerged. Powered by technological deterministic ideas, visionaries talked about utopia as the Internet was believed to offer solutions to many societal problems: it would for example bring democracy, because the Internet

would reshape interactions between the government and citizens (e.g., Budge, 1997; Ward, 1997) or decrease social inequality as information was now available to all. Others offered more dystopian views and anticipated that groups in society would be driven apart as a result of society's reliance on the Internet (e.g., Barber, 1998; Slouka, 1995). The Internet was believed to substitute face-to-face interaction with mediated interaction, and bonds among members of society would be lost (Fisher & Wright, 2001). However, in recent years, we have seen that opportunities for the wider society grew as the Internet matured and broadband Internet access became more widespread in Western societies. This being said, concerns are still expressed by social scientists as well as policy makers. While Internet use is becoming imperative rather than a mere convenience (Schroeder & Ling, 2014), there are still people who cannot catch up with the flexibility and independence inherent in the Internet. This concern has now received considerable attention within digital inequality research in recent years. Scholars increasingly state that increased Internet access in Western societies does not necessarily lead to mitigating digital divides across social groups, but, instead, that technologies reflect or even contribute to current notions of social inequalities (e.g., DiMaggio & Garip, 2012; Hargittai, 2018; Witte & Mannon, 2010). Therefore, it is important to study what causes some to benefit from the Internet while others are marginalized, as positive outcomes derived from Internet use cause an increase in offline resources, while negative outcomes lead to a reduction of one's offline capital (Van Dijk, 2019). First, an understanding of what digital inequalities actually entail is needed.

Since Internet access and the use of personal computers have increased in Western societies, inequalities relating to the Internet have become a topic of interest in digital inequality research. In the 1990s, differences between people concerning their Internet uptake were discussed under the heading of the digital divide, which was then defined as "inequalities in access to the Internet" (Castells, 2002, p. 248). The common term *digital divide* has been contested, especially because of the dichotomy it supposes, assuming that there are two societal groups divided by a large gap (Van Dijk, 2006). The terms *digital divide* and *digital inequality* have often been used interchangeably in the literature. In this dissertation we adhere to the latter, as it does more justice to the less delineated character of the differences in people's Internet use and appropriation, differences that might exist on a continuum of disparities. However, *digital divide* as a term has been commonly used since its introduction, and the concept has been evolving ever since.

Initially, the approach to the digital divide was a simplistic study of the uneven distribution of Internet access (Eastin, Cicchirillo, & Mabry, 2015), which

was observed as a binary distinction between those connected to the Internet and those who were not (Dewan & Riggins, 2005; Mehra, Merkel, & Bishop, 2004). In this *first-level digital divide*, differences were perceived from a physical access perspective. People connected to the Internet were regarded as being on the preferred side of the divide (Newhagen & Bucy, 2004), while those on the wrong side did not have a connection: 'the haves and have-nots' (DiMaggio & Hargittai, 2001). Extending the notion of access, Van Dijk (2005) distinguished between material and motivational access. Motivational access concerns the motivation of potential users to adopt and make the Internet one's own, and will thus always remain a condition for benefiting from the Internet. Material access covers the means required to use the Internet, for example devices used, type of Internet connection, or hardware expenses and software subscriptions (Van Deursen & Van Dijk, 2019).

Once broadband access rates neared 100% in Western societies, having a connection was no longer considered the primary or only barrier to (benefit from) the Internet. Therefore, when broadband Internet access and digital devices became more prevalent, the relevance of a digital divide based on Internet access started to be questioned. As a result, the focus of the digital divide discourse shifted to digital skills and differences in use (usage gap) (Van Dijk, 2005). In this *second-level digital divide* (Hargittai, 2002), the question is not so much if but how people use the Internet; this refers to the digital skills they possess and the online activities they engage in. The underlying idea is that differences in Internet use are not the fault of technology but derive from the way we use it. Research on digital skills moved forward when authors classified the types of skills necessary to bridge the digital divide (Mossberger, Tolbert, & Stansbury, 2003; Van Deursen & Van Dijk, 2011): while the first contributions to second-level digital divide research focused on people's ability to find information online (Hargittai, 2002), subsequent studies proposed a division of subsets of skills. Mossberger et al. (2003) distinguished between technical competence, or "the skills needed to operate hardware and software, such as typing, using a mouse and giving instruction to the computer to type records a certain way", and information literacy, which involves "the ability to recognize when information can solve a problem or fill a need and to effectively employ information resources" (p. 38). Recently, Van Deursen, Helsper and Eynon (2016) differentiated among operational, information navigation, social, and creative skills. The understanding of differences in Internet use has also been expanded throughout the years. Originally, the focus was on the frequency of use; now, different types of activities are the focus of attention, for example, distinguishing between more or less capital enhancing Internet activities (Hargittai & Hinnant,

2008), others formulated user typologies (e.g., Brandtzæg, Heim, & Karahasanović, 2011). Many researchers have aimed to investigate the (indicators of) different types of Internet activities that people engage in (e.g., Blank & Groselj, 2015; Büchi, Just, & Latzer, 2016; Van Deursen & Van Dijk, 2014; Zillien & Hargittai, 2009).

Several scholars have argued that digital divides should be approached more comprehensively, so that not only Internet access, skills and use are addressed but also the consequences of Internet use (e.g., Fuchs, 2009; Selwyn, 2004; Van Dijk, 2005). Correspondingly, the digital inequality discussion has recently shifted towards the *third-level digital divide*, where the actual outcomes of Internet use are the focus. This divide determines who benefits from the returns that the Internet has to offer to those for whom access is no longer in question (Van Deursen & Helsper, 2015; Wei, Teo, Chan, & Tan, 2011), because even when access rates and skill levels among users are similar, they may still yield different outcomes of Internet use (Stern, Adams, & Elsasser, 2009). As this outcome divide pinpoints the actual implications of Internet use for the individual's life opportunities, it seems increasingly important to focus on the third-level digital divide when unraveling how offline disparities might be reinforced by digital inequalities. While a considerable number of studies have shed light on these beneficial outcomes of Internet use and digital inequality research has made strides in recent years, the area still has shortcomings.

1.3   Shortcomings: Fragmented concepts

To determine who is on the right and wrong side of the first-, second-, and third-level digital divides, many scholars have put effort into mapping inequalities by identifying factors that determine differences in Internet access, skills, uses and outcomes (e.g., Chaudhuri, Flamm, & Horrigan, 2005 (access), Hargittai, 2002 (skills), Blank & Groselj, 2014 (uses), Van Deursen & Helsper, 2015 (outcomes), Blank & Lutz, 2018 (outcomes)). However, while these studies aid in taking the first steps to unraveling digital inequalities, the focus of these studies is often fragmented in the sense that they concentrate on one or a few types of Internet activities or skills (e.g., online content creation, Correa, 2010; online shopping, Hernández, Jimenéz, & José Martín, 2011; social network sites, Hargittai, 2007; online banking, Xue, Hitt, & Chen, 2011). In addition, while researchers generally study the same concepts, different terminology is often used, resulting in incoherent definitions (Blank & Groselj, 2014). As a result, it is difficult to deduce

and generalize from the plethora of studies and it remains unclear which determinants are decisive for inequalities in Internet access, skills, uses and outcomes. First, determinants advanced in, mostly, quantitative digital divide studies seem predominantly socioeconomic and sociodemographic. To study whether this tendency indeed holds true and what would then emanate as the most important determinants, the first study in this dissertation focuses on unraveling determinants of the second- and third-level digital divides (chapter 2). The first level is disregarded as the Internet access penetration rates in most Western societies, such as the Netherlands, are by now at nearly 100%. In addition, in order to determine what the Internet actually means to its users, it is crucial to focus on the tangible outcomes that they obtain (third-level), which results from the way people make use of the Internet (second-level). We will make these determinations by answering the research question stated below. One of the most prominent determinants resulting from the overview – educational level – serves as input for subsequent studies in this dissertation.

> *Which significant determinants define Internet skills, uses and outcomes in the English-language academic digital divide literature between 2011 and 2016?*

1.4   Shortcomings: A lack of explanations

While the identification of the determinants of the second and third-level digital divides might aid in taking the first steps towards reducing digital inequalities, as it reveals who uses the Internet in a beneficial way and who does not or who does so to a lesser extent, it remains unclear why digital inequality surfaces among these indicators. Because of their quantitative character, the general factors found often lack theory and explanatory specification. In other words, the detailed mechanisms and the social contexts concerned are often overlooked, which is a concern that has been previously expressed in digital inequality research (e.g., Chen, 2013; Ragnedda, 2018; Tsatsou, 2012).

One of the factors that should be elaborated upon to find detailed mechanisms is education, specifically, how different levels of education lead to different positions in the digital divide. *Educational level* has been put forward many times in quantitative digital divide (survey) research as being decisive for the first-, second-, and third-level digital divides. Educational level is associated with class-based mechanisms; therefore, its implications go beyond literacy

(Schradie, 2011). In addition, educational level is central to one's societal position as it is a fundamental determinant of occupation and income (Lahelma, 2001; Ross & Wu, 1995) and mirrors people's (non)material resources (Von dem Knesebeck, Verde, & Dragano, 2006). Social class definitions often contain levels of education, especially when referring to occupations, such as (new) professionals, high-managerial workers, industrial workers or farmers, because a certain educational level is needed to practice specific professions (Goldthorpe, Llewellyn, & Payne, 1987). Educational level thus forms part of one's social class providing additional, sociocontextual information. The digital inequality literature typically fails to illuminate what one's educational level signifies for Internet uses and outcomes. In this dissertation a distinction is made between the less and highly educated, to find better explanations for how educational level might cause and amplify divides between societal groups.

1.5   Shortcomings: Third-level digital divide unexplored

To determine who benefits the most from using the Internet, it is necessary to identify which outcomes the Internet delivers to its users, as a certain form of use (second-level divide) does not automatically lead to the corresponding beneficial outcome (Van Deursen, Helsper, Eynon, & Van Dijk, 2017). Accordingly, in the past few years, a plea for a shift towards the third-level digital divide has been set in motion. However, the third-level digital divide remains largely unexplored. There are examples of studies that examine the outcomes of media uses, such as those based on the uses and gratifications approach, but these are typically based on broad categorizations of outcomes, such as entertainment and information (Cho, De Zuniga, Rojas, & Shah, 2003), instead of focusing on tangible outcomes. While the actual tangible outcomes of Internet use are especially important when analyzing how online inequalities affect traditional offline inequalities, the large majority of available studies that map inequalities have paid much greater attention to aspects of the first- and second-level digital divides. For the studies that are available, fragmentation again takes a hold, as most studies researching Internet outcomes focus on one or a few specific outcome(s). For example, studies have focused on an increased number of social ties as a consequence of Internet use (Pénard & Poussing, 2010), the acquisition of a new job online (Fieseler, Meckel, & Muller, 2014) or increased political participation (Sylvester & McGlynn, 2010). A comprehensive theory-driven overview is often missing and most

individual outcomes studied are not linked to the digital divide. A few exceptions can be found in the form of studies that attempted to comprehensively measure overarching differences in beneficial outcomes that Internet users obtain (Blank & Lutz, 2018; Van Deursen & Helsper, 2015). A useful theory that can be used as a starting point for classifying beneficial outcomes, is the corresponding fields model (Helsper, 2012). Helsper adapted Bourdieu's conceptualization of economic, cultural, and social capitals to an overarching classification of economic, cultural, social and personal fields. When the term 'fields' is used, the model refers to "spheres of influence in everyday life as well as frames of reference for individual action" (Helsper 2012, p. 404). Every outcome that Internet users derive from being online can be classified into one of the fields. The supposition of the corresponding fields model is that online inequalities relate to offline equivalents. For example, those who are economically advantaged offline by a white-collar job and a good salary are expected to also reap online economic outcomes, such as financial benefits that result from online investments. Taking the supposition into account the question we seek to answer is as follows:

> *Do families with lower and higher educational backgrounds*
> *differentially benefit from positive outcomes of Internet use and if so,*
> *why?*

In addition to having a positive impact, the Internet might also cause unfavorable experiences for its users, resulting in negative outcomes in the user's daily life. Nearly all contributions available approach the third-level digital divide from a positive stance, focusing on differences in beneficial outcomes. As with beneficial outcomes, negative outcomes could well add to increasing social inequalities in society, as experiencing negative outcomes often means a reduction of one's resources (e.g., Blank & Lutz, 2018; Gui & Büchi, 2019). Digital inequalities are thus not only a matter of reaping benefits but also of being able to prevent negative outcomes. While many negative consequences of Internet use have been studied before, most of these outcomes were studied either in the realm of problematic Internet use (PIU) or Internet addiction (IA) or had a fragmented character. Examples of negative outcomes that have been studied in a less overarching way are, among others, work pressure as an economic outcome (Heijstra & Rafnsdottir, 2010), the weakening of social ties as a social outcome (Bargh & McKenna, 2004), cyberbullying as a cultural outcome (Privitera & Campbell, 2009) and physical consequences as a personal outcome (Suris et al., 2014). In addition to their fragmented character, with only a few exceptions,

these studies were not linked to the digital divide and, therefore, often lacked the ability to provide explanations for the larger inequality question.

In this dissertation, the focus will thus be shifted towards the third-level divide. We will do so by comprehensively mapping both positive and negative outcomes of Internet use through qualitative research. Combining a theoretical model with qualitative research will ultimately help us to start unraveling how online outcomes contribute to existing offline disparities. Interviewing people with different educational levels allows us to sort out if experiences with outcomes of Internet use and the meaning people attribute to these outcomes differ across different educational groups. After focusing on the positive outcomes that Internet use might deliver, we will turn to the negative outcomes by answering the following research question:

> *Do families with lower and higher educational backgrounds differentially suffer from negative outcomes of Internet use and if so, why?*

1.6   Digital inequality theory

1.6.1   Bourdieu's ideas of capitals, fields and habitus

Research in the realm of sociology has provided several theoretical approaches that go beyond generic determinants in explaining how digital inequalities arise. A useful sociological theory for looking at social reproduction is the capital theory of Bourdieu (1984). Bourdieu used the term 'capital' to highlight differences between societal groups and is referred to as "accumulated labor [...] which, when appropriated on a private, i.e., exclusive, basis by agents or groups of agents, enables them to appropriate social energy in the form of reified or living labor" (Bourdieu, 1986, p. 241). Bourdieu built on Marx's and Weber's ideas by defining economic, cultural and social capital. Not all social classes are equally provided with the forms of capital, or resources. Bourdieu saw the social world as being distinguished into a variety of distinct 'fields' of practice, such as education, religion or art, in which people function during their lives. In every field, people strive for the maximal accumulation of the form of capital that is specific to that particular field, as these play a crucial role in (re)producing benefits in individuals' life opportunities (Bourdieu, 1984). Social capital was originally defined as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized

relationships of mutual acquaintance and recognition" (Bourdieu, 1986, p. 248). Social capital thus involves an individual's position in a social network that gives a person access to useful resources that can be used and invested to create new capital (Lin, 2000). Bourdieu's definition of cultural capital was not consistent throughout his work, but the term was translated by Swartz (1997) as "verbal facility, general cultural awareness, aesthetic preferences, information about the school system, and educational credentials" (p.74). Cultural capital is said to vary between social classes, but it is also regarded as a precondition for accessing education; therefore, it is assumed to be difficult for lower class children to succeed in education (Sullivan, 2001). Economic capital is referred to as material wealth, and it is found in the form of resources that include income, labor prospects and educational opportunities that individuals employ to mark their place in society (Bourdieu, 1984; Helsper, 2012). The extent to which one has access to social, economic and cultural resources thus determines one's social position (Robinson, 2009).

As Selwyn (2004) indicated, although sociodemographic measures such as one's income are a crucial factor in engagement with ICTs, economic capital alone cannot account for identified digital inequalities. An individual's or group's engagement with ICTs such as the Internet also corresponds with one's social and cultural capital, such as the quality of useful ties in families (social) or the lifestyle a family adopts (cultural). What makes the difference is that one's economic capital or resources allow one to own an ICT-related device, while one's cultural capital, in the form of knowledge or qualifications, enable one to appropriate the device (Selwyn, 2004). In addition, to successfully access and engage with ICTs, an individual also needs social capital (Chen, 2013; Courtois & Verdegem, 2016) in the form of connections between the individual and the networks of other valuable individuals or organizations, such as expert family members or colleagues. One's social context even appears to be decisive with regard to the chances one has for acquiring digital skills (Van Dijk, 2006). As another example, Murdock, Hartmann, & Gray (1996) showed that an individual's ability to draw upon significant social contacts (capital) in the form of advice, stimulation and practical support determines whether Internet use is sustainable. Regarding the third-level digital divide, Helsper & Van Deursen (2015) found that disparities in online outcomes relate to offline social resources such as marital status.

Central to the accumulation of capital is Bourdieu's (1990) concept of *habitus*: "a system of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organize practices and representations that can be objectively

adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them" (p. 53). In other words, the habitus serves as a mental structure that consists of internalized dispositions, schemas, and perceptions, accumulated by the individual while growing up in a particular social context (Swartz, 2002). The habitus predisposes individuals to a certain way of routinely thinking and acting within structured social contexts, or *fields,* without reflecting on their behavior beforehand (Cockerham, 2005). Habitus relates to the concept of *lifestyle* (Weber, 2005), because although one can deliberately shape one's own lifestyle (Abel, Cockerham, & Niemann, 2000), "lifestyles are the systematic products of habitus, which, perceived in their mutual relations through the schemes of the habitus, become sign systems that are socially qualified" (Bourdieu, 1986, p. 172). One's lifestyle depends on *life chances,* which emanate from class positions and are thus a form of structure, and on *life choices* that are more voluntary: a form of agency. The two concepts operate side by side to determine one's lifestyle. As individuals with the same class background share similar habitus, they are likely to have similar preferences in terms of lifestyle choices (Cockerham, 2013).

People's thinking, judgements and actions thus originate from their habitus and will therefore reproduce the structures from which they are derived. Because the habitus is being formed and shaped within a particular social context, and influenced by structural variables such as social class and educational background, individuals with a corresponding social background will develop a similar habitus (Cockerham, 2013). The habitus implies embedded dispositions about (new) technologies, such as the Internet, and is likely to determine the way the Internet is dealt with. One's habitus might thus, through one's lifestyle, be an important factor in the differential accumulation of offline and online resources.

As we have seen so far, habitus, capital and fields are all relevant components that shape the context in which Internet appropriation takes place. This process of making the Internet one's own is expected to differ between the less and highly educated, because of their divergent habitus. Therefore, those who have already acquired a relatively central position within different fields of society might reinforce this position through the digital acquisition of cultural, social and economic capital. A way to study the use and appropriation of the Internet within one's particular social context, is by applying domestication theory.

1.7   Domestication theory

1.7.1   Domestication of the Internet

Taking into account one's social context, as reflected by the relevant social, economic and cultural resources, seems inevitable when finding explanations for why digital inequalities exist. A way to consider the role of one's social context in the way people make the Internet their own and benefit from online outcomes is by applying domestication theory (Haddon, 2006, 2007, 2011; Silverstone, Hirsch, & Morley, 1992). The theory takes a socially constructive perspective, which might provide useful insights into how Internet use is embedded in people's social and cultural contexts. Domestication focuses on the development of what technology means to users and nonusers and how it is immersed in daily life (Silverstone et al., 1992). In addition, the theory offers explanations for how individuals integrate new technologies into their particular social context. According to domestication theory, the Internet is integrated into daily routines in such a way that people shape it to their preexisting practices and values, and the domestication process is likely to differ for each household and individual (Silverstone & Haddon, 1996).

Typically, domestication theory is applied in studies that focus on the adoption and use of the Internet. In this dissertation the application will be extended, by studying the Internet outcomes that emanate from differential domestication processes. Taking a domestication perspective starting from the home context, including an individual's expert connections, family members and work environment, will allow us to unravel what the Internet actually means to its users of different educational backgrounds. Until now there has been little to no attention paid to the role of family in the uptake and use of digital technology; starting from the family context in the home will allow us to comprehensively examine the social context. Although the 'household' is often used as the object of study, it is different from the family context. While one's household describes how an individual's or family's context is structured, the social unit that a family entails is a collective entity in which social contacts in the use of digital media can be studied. As domestication theory requires, the setting of this dissertation is participants' daily lives, and the main focus is on the home-, but also work- and other environments of the family members. Although daily life (in the home) is often found as a setting in the literature, the family as a social unit is mostly overlooked, while differences in the way less and highly educated families appropriate the Internet are likely to be extant. These differences are hard to uncover through the common survey approach that is often applied in digital

inequality research, as it focuses on the individual level in which the daily use, lifestyle and social contacts of those individuals can only be studied to a limited extent. A qualitative approach allows us to include those elements, providing the necessary interpretation to make sense of the determinants that have been studied so far. We will do so by answering the following research question:

> *How do digital inequalities manifest in the Internet domestication process among families with lower and higher educational backgrounds?*

1.7.2   Children's domestication process

While reproduction of social inequalities is one of the main drivers of studying digital divides, a more in-depth way of reproducing inequalities is, for example, by projecting and transferring the differences to children: the outcomes, and corresponding inequalities, are reproduced from one generation to the next (Witte & Mannon, 2010). To study the role of children in the formation of inequalities by means of Internet use, children's own domestication process could be explored, by analyzing the different roles of adults versus children in this process. Conducting Internet research in the current era, lets us deal with an interesting mix of generations: the last generation that knows what it is to grow up without the Internet but is not always skilled in all aspects of the Internet, while their children are growing up not knowing how to live in a nondigital world and not knowing what 'the Internet' actually entails. While parents try to shape their children's media and Internet use, they have a range of strategies to choose from (Livingstone & Helsper, 2008). However, while parents can, to a large extent, regulate their children's Internet use by monitoring them and setting rules, children might also have their own stake in their domestication process.

In parental mediation literature, the focus has to date mainly been on the way that parents try to prevent negative consequences of Internet use for their children (e.g., Internet addiction, cyberbullying) but not per se on the role of parental mediation in children's own domestication process. Although different domestic processes have thus been studied, from both the children's and the parent's perspectives, what we do not know is if and how the creation of digital and eventually even social inequalities is influenced by the way children give shape to and are influenced in their own domestication process. The contribution of children to inequalities arising in the home context might thus be twofold and will be studied by answering the following question:

How do children from families with lower and higher educational backgrounds domesticate the Internet?

1.8   Research goals

This dissertation will not only focus on a relatively new and unexplored theme (the third-level divide), it will also apply a highly needed qualitative approach within digital inequality research (multiple sets of interviews among families with different educational backgrounds). This dissertation has four main research goals.

1. To compose a comprehensive overview of determinants of Internet skills, uses and outcomes mentioned in the digital divide literature from 2011, on to see who is most prone to benefit from or be disadvantaged by the Internet.
2. To shift the focus to the third-level digital divide in the family context by comprehensively identifying which positive and negative outcomes of Internet use determine those digital inequalities.
3. To find explanations for the differences in Internet uses and outcomes. Making the comparison between how less educated and highly educated families integrate the Internet into their daily lives, in terms of how they domesticate it within their social context, is the most important contribution of this dissertation. As the aim to diminish digital inequalities requires the identification of mechanisms and processes, by looking at the differential, daily use of the Internet by less and highly educated users, we set aside the quantitative approach that is often taken in digital inequality research.
4. To provide input for interventions targeted at more egalitarian and beneficial Internet use in both less and highly educated families' daily life settings.

The research goals indisputably lead to applying a qualitative approach, which takes into account the sociocontextual side of Internet use. We will do so by adopting a domestication approach. The population studied consists of families with different compositions, as the domestication of the Internet primarily takes place within the home context and all family members and interactions among those members might influence the process. Families will be selected on the basis of the (parents') educational level, as it is one of the most prominent

determinants throughout all three digital divide levels and is decisive for one's habitus and lifestyle, which might in turn influence the on- and offline resources obtained.

1.9   Chapter overview

In **chapter 2**, a *systematic literature review* of digital divide determinants is presented, focusing on the second- and third-level digital divides. The first level was disregarded, as the scope of digital inequality research is gradually shifting towards the second- and third-level digital divides, where there is still much to be gained. In addition, this dissertation focuses on the actual meaning of the Internet for its users, by examining the way that they obtain outcomes that might mirror existing offline inequalities. To do so, the way that people make the Internet their own should be the focal point. Therefore, Internet access and skills are of less interest in this dissertation, while uses and outcomes are central. The scientific contribution is twofold here: on the one hand, this study will generate a comprehensive, less-fragmented overview of indicators of the two divides. On the other hand, it will also provide the researchers with the most important indicators to be taken into account in the subsequent qualitative studies.

Chapter 3 describes why and how *qualitative interviews* were applied in the empirical studies of this dissertation to grasp meanings and interpretations that had not been brought out before in digital inequality research. As the empirical articles written for this dissertation were all based on interview studies, all the rounds of interviews strongly cohere and therefore a separate chapter was devoted to this method. The chapter will describe the families participating in the study in detail and discuss the interviewing approach.

Chapter 4 approaches the social context in a qualitative manner, in which the family, instead of the individual, will be central. Domestication theory is relevant here because it follows the process of how its users and nonusers attach meaning to a technology, the Internet, and how they incorporate it into their daily life (Silverstone et al., 1992). The theory explains how technologies such as the Internet are integrated into an individual's social context, emphasizing the influence of one's workplace and the household. The domestication of technologies takes place on the basis of preexisting practices and values, and the way the Internet becomes part of daily routines will differ per individual or family with different educational backgrounds (Silverstone & Haddon, 1996).

In **chapter 5**, the outcomes of Internet use as a consequence of the way in which its users domesticate the Internet will be further explored. To see if the digital inequalities mirror and reinforce offline inequalities, an exploration of the form in which inequalities in outcomes arise is needed. Although some attempts have been made to map such beneficial outcomes, a theoretically driven discussion is often missing (Ragnedda, 2018). Applying the corresponding fields model (Helsper, 2012) to the outcomes found in qualitative domestication research, will enable the researchers to see what outcomes actually mean to Internet users in terms of their offline resources as well as how differences in these outcomes arise between the less and highly educated.

After making an inventory of positive outcomes of Internet use and analyzing how these benefits mirror offline inequalities, the focus will shift to negative outcomes of Internet use in **chapter 6.** The minor share of digital inequality research that includes the third-level digital divide, aiming at mapping Internet outcomes, has mostly focused on the beneficial outcomes that Internet users might acquire while they are online. However, outcomes of Internet use can also be negative. Additionally, the efforts of scholars mapping negative Internet outcomes have been largely fragmented. Negative outcomes of Internet use can also be classified according to the four domains of the corresponding fields model (Helsper, 2012), resulting in negative economic, social, personal and cultural outcomes. In the sixth chapter, differences in negative outcomes between the less and highly educated will be studied by conducting qualitative interviews. Combining the negative with the positive outcomes will allow us to see the effect of differential online outcomes on the preexisting offline resources or capital of less and highly educated families.

In **chapter 7**, the role of children within families will be studied to determine the way they use and benefit from the Internet. As inequalities are suggested to be transferable while children are growing up in a particular social context, studying how children make the Internet their own seems invaluable in fighting inequalities. In chapter 7, children's perspectives on the domestication process will be combined with their parents' views on parental mediation strategies, to gain insights into their mutual roles.

In **chapter 8**, the key findings of the various studies will be summarized and reflected upon in the general discussion. Implications for science and society will be discussed. Additionally, recommendations for future research will be drawn after the limitations of the current contribution are established.

02

Determinants of Internet skills, uses and outcomes. A systematic review of the second- and third-level digital divide

2.1   Introduction

This chapter will provide a starting point for the empirical studies that follow in this dissertation, by means of identifying the most prominent determinants of the second- and third-level digital divides. In chapter 1 we have seen that a plethora of studies have been conducted to identify determinants of digital divides. Unfortunately, there is a lack of consistency in the terminology used, both for the type of digital divide addressed (skills, uses and outcomes), as well as for the determinants. Scholars refer to the same concepts using different nomenclatures. Additionally, terms are often not theoretically grounded (Van Deursen, Helsper, Eynon, & Van Dijk, 2017). A comprehensive overview and categorization of the determinants of Internet skills, uses and outcomes would help to identify where future research should be directed. It will provide a framework for building digital divide theory and allow policy makers to identify the groups that are lagging behind. This will provide input for the development of adequate policies targeted at more egalitarian Internet use, finally aiming to decrease digital and subsequently social inequalities. This article aims to answer the following research question:

> *Which statistically significant determinants define Internet skills,*
> *uses and outcomes in the English-language academic digital divide*
> *literature between 2011 and 2016?*

To answer this question, we strive to (1) identify the amount of research that has been conducted on each level of the digital divide (skills, use and outcomes) and what determinants are found for each level, and (2) delineate the different terminologies that seem to cause confusion. To develop a comprehensive overview, we conducted a systematic literature review that focuses on the second- (skills and uses) and the third- (outcomes) level digital divides in the past six years. Our contribution focuses on the second- and third-level digital divides and disregards the first level. As this dissertation aims to map what the Internet actually means to its users, it is key to study the way that people make the Internet their own and benefit from it – in terms of Internet use and outcomes derived. This contribution starts with a short description of determinants studied, followed by an explanation of the applied method and ends with the results of the systematic literature review. In the final section, the implications and limitations of this study are discussed.

2.1.1   *Determinants of digital divides*

As was outlined in chapter 1, digital divide studies can be divided into three levels along which digital inequalities exist, knowing the first-, second-, and third-level digital divides. The first-level divide covers differences in (material and motivational) Internet access, the second-level divide comprises differences in Internet skills and uses and the third-level divide focuses on disparities in the actual outcomes that Internet users acquire (for an extensive description of the levels, see chapter 1). Studies of the first-level digital divide have shown that Internet access is unequally distributed among individuals with different demographic characteristics, such as age, gender, socioeconomic status, ethnicity and geography (e.g., Helsper, 2010; Mossberger, Tolbert, & Stansbury, 2003). Many of these factors also determine skills and use. Blank & Groselj (2014), for example, found evidence that age, educational level and employment status cause a large proportion of the differences within the second-level digital divide. Van Deursen & Van Dijk (2010) showed that similar determinants of Internet use determine Internet skills, although the relative influence of these determinants depends on the type of skills and use measured. Recently, researchers have focused on the determinants of Internet outcomes by distinguishing factors that are needed to capitalize on Internet use to acquire benefits (e.g., Van Deursen, Helsper, Eynon, & Van Dijk, 2017). Van Deursen, Helsper, Eynon, & Van Dijk (2017) showed that different outcomes from Internet use were the result of different digital divide determinants. For example, while employment status was shown to be important for employment- and education-related Internet outcomes, it did not affect social outcomes.

2.2   Method

2.2.1   *Systematic review*

A systematic literature review was performed to develop a comprehensive overview of the determinants of Internet skills, uses and outcomes of the digital divide. This review followed the protocol of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) for systematic reviews (Moher, Liberati, Tetzlaff, & Altman, 2009). This framework was chosen to ensure that the study was transparent and replicable. Systematic reviews are a method for identifying and synthesizing all available existing research on a topic and, therefore, are a method to meet the aforementioned research goals. From the

research question, several search terms were selected after identifying Internet skills, uses and outcomes as primary terms.

The query executed for this review was threefold. It established the determinants of Internet skills, uses and outcomes. A comprehensive search was conducted using Web of Science, PsycInfo and Scopus, which together covered a wide range of social science journals. To obtain optimal results, three Boolean search strings were constructed. A Boolean search is performed to combine all search terms in a structured way. As illustrated below, all three search strings consisted of distinct parts. First, the main part, concerning skills, uses or outcomes was included. Then, search terms were added to ensure that the results would contain determinants of the main part, including *indicators, predictors,* and *determinants.* Additional terms, such as *factors* or *antecedents,* did not deliver any additional useful results. Last, the term *digital divide* was added to the search strings to ensure that the determinants of the digital divide that were found were investigated and identified in the context of the digital divide and, therefore, applicable to our framework.

  Skills. From the preliminary research the three most common terms used by researchers when writing about the ability to use ICTs were as follows: *online, digital* and *Internet skills.* In addition, several terms were found that were used in the same context, such as *digital literacy, digital competence* and *information literacy.* Including these terms in the search did not yield any additional results. The final Boolean search string used to search for papers related to Internet skills was as follows:

('Internet skills' OR 'digital skills' OR 'online skills') AND (indicators OR predictors OR determinants) AND ('digital divide')

  Uses. Both 'Internet use(s)' and 'Internet usage' are used interchangeably in existing digital divide literature. Moreover, the term *activities* also generated useful results, but only when used in combination with *online* or *Internet.* The term *digital activities* did not yield additional useful results. The combination and extension of these terms resulted in the following search string:

('Internet use' OR 'Internet activities' OR 'online activities' OR 'Internet usage') AND (indicators or predictors or determinants) AND ('digital divide')

  Outcomes. From a detailed analysis of the literature on digital divides, we determined that the terms *outcomes, benefits, effects* and *opportunities* were the most commonly named benefits of using the Internet. The initial search delivered too many unusable results because the majority of the articles focused on

benefits, outcomes or opportunities in general, not explicitly in the context of Internet use. Therefore, the concepts were combined with the term *Internet* in two ways, *outcomes of Internet* and *Internet outcomes*, to specify the type of results to be included. This resulted in the following Boolean search string: ('effects of Internet' OR 'Internet effects' OR 'outcomes of Internet' OR 'Internet outcomes' OR 'benefits of Internet' OR 'Internet benefits' OR 'Internet opportunities') AND (indicators OR predictors OR determinants) AND ('digital divide').

2.2.3   Selection criteria

Several search restrictions were applied to limit the amount of irrelevant results. The results had to meet the requirements that articles are published in (1) English language, (2) (peer-reviewed) academic journals, (3) between 2011 and 2016. The time span was chosen because we expected that within six years, all relevant second- and third-level digital divide determinants would be studied in at least one of the relevant articles. Criteria for inclusion of a search result in the review are as follows:

1. Articles should include determinants of the second- and/or third-level digital divides to ensure they referred to Internet skills, uses and/or outcomes.
   - Articles that included dependent variables such as *intention to* or *propensity to* were excluded.
   - Only articles that included determinants of Internet skills focusing on a specific type of skill, not general concepts such as *self-efficacy,* were included. However, the concept *Internet skills* could also be mentioned by means of terminology such as, *digital skills, e-skills, digital competence.*
   - Articles that suggested user typologies (e.g., sporadic user, entertainment user) that not explicitly refer to determinants of skills, uses or outcomes were excluded.
2. The term *digital divide* must have been used in a way that ensured that the author(s) took the digital divide (or digital inequality) discourse/perspective as point of interest.
3. Articles had to be generalizable and not focused on a specific profession, study, area of conflict or organization, except for universities. The shared characteristics of groups should not be narrower than typical digital divide factors, such as age, gender or educational level. Articles that focused on specific groups, such as pregnant women, geography teachers, welfare workers and refugee

migrants, were excluded. The same applied to studies focusing on specific situations, such as the US elections of 2008 or local governmental initiatives.

4. Articles focusing on qualitative research were excluded from the review because of the lack of generalizability of possible determinants identified within those studies.

2.2.4   Study selection

The search resulted in the identification of 2,148 articles. After the exclusion of duplicates (1,202) and the inclusion of articles that were identified through other methods (2), 948 articles remained for systematic reviewing. Articles were reviewed using a fixed structure, based on the PRISMA method. After applying the selection criteria, 126 articles were selected for inclusion in this review. Articles included in the review are attached in Appendix 2a of this chapter.

2.2.5   Selection bias

When conducting a systematic literature review, there is the possibility of a selection bias in which the researcher unintentionally selects those articles that support his or her prior beliefs (Booth, Sutton, & Papaioannou, 2016). Therefore, the reviewer rigorously aimed to include articles based on relevance by adhering to the predefined criteria. To verify that the selected articles met the selection criteria, a second independent researcher performed an analysis of >10% of the articles found with the search query. The resulting Cohen's Kappa was .67.

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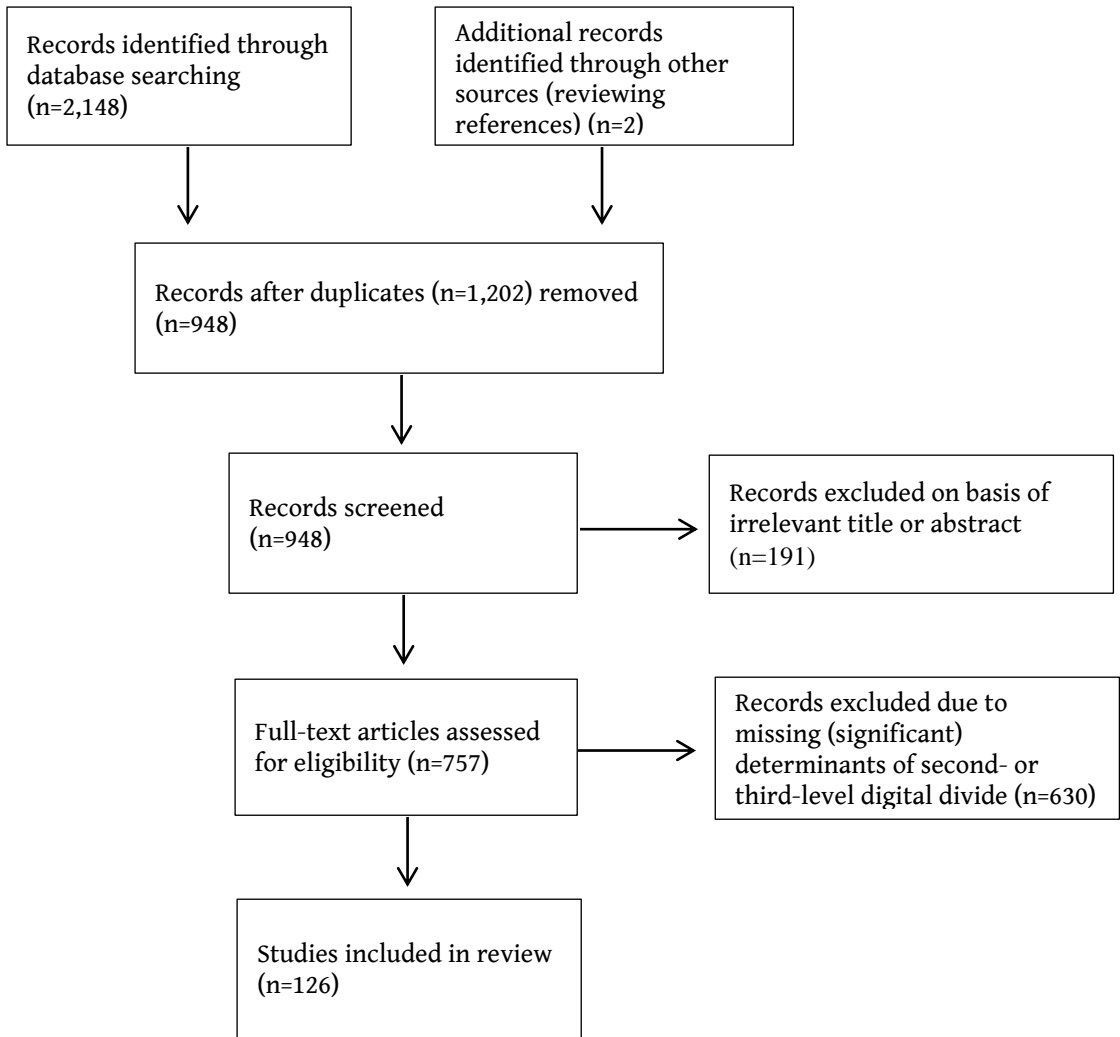
Figure 1. *PRISMA flowchart*

2.3   Results

Because of inconsistencies in terminology, theoretically grounded classifications were selected and adapted to present the findings.

2.3.1   *Categorization of digital divide types and determinants*

Internet skills
The classification of Internet skills was predefined to ensure that all identified skills could be placed in a primary category (see Appendix 2b for a complete overview of all identified skills). Four primary Internet skills groups were defined (adapted from Van Deursen & Van Dijk, 2009):

- *Medium-related*, with subcategories *software skills* (including *making spreadsheets, browser use and email, word processing and flow charts* and *software use and file manipulation*) and *operational skills* (including *instrumental skills*).
- *Content-related*, including *formal skills, information skills* (including *eHealth skills*), *strategic skills, creative skills* and *social skills* (including *communication* and *networking*).
- *Safety & security*, under which *ethics, safety and acceptable use* and *security* were combined.
- *General*, such as *Internet skills, digital competence* and *digital literacy*.

Internet use
Internet use can be defined in terms of frequency and the type of activities performed. For frequency we created the subcategory *frequency* of Internet use. The type of activities performed can be considered as variety of activities, and the specific activities. *Variety* of Internet use is placed in a separate subcategory. To categorize specific activities, we used Helsper's corresponding fields model (2012) which provides a theoretically grounded categorization of *economic, cultural, social* and *personal* uses and outcomes. All uses that were found using the review (see Appendix 2c) were placed in one of the four primary categories. In accordance with the model, these primary categories were then divided into subcategories. The economic category was subdivided into *employment and education, property* and *income and finance*. The cultural category included *belonging* and *identity*. The social group was divided into *informal networks, formal-civic networks, e-government* and *political networks*. We added *e-government* as a self-contained subcategory.

Last, the *personal* group of Internet uses contained *health/well-being, self-actualization* and *leisure/personality.*

Internet outcomes
Internet outcomes were categorized in a similar way as the specific Internet activities. In addition to *economic, social, cultural* or *personal* categories, a general Internet outcomes category was created to classify Internet outcomes that did not fit into the other categories. See Appendix 2d for a detailed categorization of the Internet outcomes.

Digital divide determinants
All categorizations of determinants were made by evaluating the operationalization that researchers used for specific terms to ensure that the determinants were in the correct category. For example, *household income* and *work circumstances* were placed in the category termed *economic*. Additionally, determinants that focused on the frequency, intensity, breadth and variety of Internet use were divided into two categories: *frequency* of Internet use and *variety* of Internet use, which were both subcategories of the *motivational* determinants. In the end, seven determinant categories were established: *sociodemographic, economic, social, cultural, personal, material* and *motivational.* The *sociodemographic* category consisted of determinants such as *age* and *gender*, while the *social* category included determinants such as *social networking* and *political participation*. The *cultural* category contained determinants such as *cultural capital* and *cultural possessions*. Within the *personal* category, determinants were placed into *leisure* or *health-related activities* subcategories. Both the *motivational* and *material* categories included determinants that were preconditions for Internet use. The *motivational* category comprised determinants such as *online skills* and *Internet attitude.* Last, the *material* category was characterized by the more material determinants, such as *home Internet access* and *number of devices*. See Appendix 2e for an overview of the (sub)categories of the determinants.

2.3.2   *Focus of digital inequality research*

First, the total amount of determinants mentioned in digital divide literature is analyzed. See Table 2.1.

Table 2.1 *Number of determinants for Internet skills, uses and outcomes*

Divide Determinants	Skills	Uses	Outcomes	*Total*
Sociodemographic	42 (31.3%)	304 (35.2%)	19 (25.7%)	*365 (34.0%)*
Economic	40 (29.9%)	248 (28.7%)	15 (20.3%)	*303 (28.3%)*
Social	3 (2.2%)	81 (9.4%)	8 (10.8%)	*92 (8.6%)*
Cultural	4 (3.0%)	29 (3.4%)	1 (1.4%)	*34 (3.2%)*
Personal	10 (7.5%)	78 (9.0%)	6 (8.1%)	*94 (8.8%)*
Material	13 (9.7%)	42 (4.9%)	1 (1.4%)	*56 (5.2%)*
Motivational	22 (16.4%)	82 (9.5%)	24 (32.4%)	*128 (11.9%)*
Total	*134*	*864*	*74*	*1072*

Table 2.1 shows that the number of articles in each of the three divides reveals that in recent years, the main focus of digital inequality research was on the second-level digital divide, especially addressing types of use. The third-level divide is underexposed. While the skills divide accounts for a minor share of the second-level digital divide determinants, it still delivers twice as many determinants compared to the Internet outcomes divide. Additionally, Table 2.1 shows that *sociodemographic* and *socioeconomic* determinants were the most common determinants studied in both the second- and third-level digital divide. By contrast, both *social* and *cultural* determinants were less studied, especially for Internet skills and outcomes divides. For the uses divide, *social* determinants were the most frequently addressed and were the result of factors such as *formal volunteering, online network size* and *offline social activities.*

Finally, Table 2.1 shows that *motivational* determinants (e.g., *Internet experience* or *frequency* of Internet use) were addressed the most frequently across the three divides. The second most frequent were *material* determinants (e.g., *Internet access* or *number of devices*), which were primarily applicable to Internet skills and uses. In the following sections, the determinants will be discussed in more detail.

2.3.3   Determinants of Internet skills

To identify determinants of Internet skills, we first needed to categorize the different terms that surfaced in the literature. For example, terms used for Internet skills included *digital skills, Internet skills* (n=8)*, e-skills* (n=1) and *digital literacy* (n=2). The term *skills* was used more commonly than the terms *literacy* and *competence.* Additionally, the term *digital skills* (n=45) was more common than the terms *Internet skills* (n=8), *digital competence* (n=8) and *Internet literacy* (n=5)*.* All

these terms were placed in the category of *general digital skills* to adhere to the goal of presenting the results clearly. Furthermore, the primary category of *general digital skills* also included *digital literacy* (n=2), *ICT competencies* (n=2) and *basic IT skills* (n=1), which were added after studying the operationalizations. Other skills referred to more specific Internet skills, broader skills or subcategories, such as *eHealth literacy* (n=16), *computer skills* (n=4) or *media literacy* (n=5). For these specific types of Internet skills, unique terms were used and, thus, no primary term was required.

Table 2.2 *Determinants of Internet skills*

Skills / Determinants	Medium-related	Content-related	Safety & security	General	Total
Sociodemographic	10 (52.6%)	14 (24.6%)	3 (100%)	15 (26.8%)	*42 (31.1%)*
Economic	4 (21.2%)	18 (31.6%)	0	18 (32.1%)	*40 (29.6%)*
Social	0	1 (1.8%)	0	2 (3.6%)	*3 (2.2%)*
Cultural	0	0	0	4 (7.1%)	*4 (3.0%)*
Personal	0	6 (10.5%)	0	4 (7.1%)	*10 (7.4%)*
Material	2 (10.5%)	5 (8.8%)	0	6 (10.7%)	*13 (9.6%)*
Motivational	3 (15.8%)	13 (22.8%)	0	7 (12.5%)	*23 (17%)*
Total	*19*	*57*	*3*	*56*	*135*

The majority of the determinants were linked to the categories of *general digital skills* and *content-related skills*. Table 2.2 shows that the *sociodemographic* and *socioeconomic* determinants were most common. *Social* and *cultural* determinants were less studied, while *motivational* determinants were important for *content-related skills,* but not as important for *general digital, medium-related* and *safety & security skills*. Last, personal determinants (e.g., *health information seeking* or *personality traits*) represented a marginal share of determinants for *general digital* and *content-related skills* and were not determinants of *medium-related* or *safety & security skills* (see Appendix 2b).

2.3.4   Determinants of Internet uses

Concerning the terminology within both the uses and outcomes category, some determinants often appeared the same, but did cover slightly different concepts when the operationalizations were analyzed. For example, the *income* category often referred to one's individual income, while the *SES income* category referred to household income. A similar situation existed for the *mental health, health condition* and *health status* categories. Therefore, these concepts were combined to

make the large number of determinants manageable and clear. A list of the aggregated use determinants is shown in Appendix 2c.

Table 2.3 *Determinants of Internet uses*

Uses \ Determinants	Frequency	Variety	Bene-ficial	Economic	Social	Cultural	Personal	Total
Sociodemographic	41(41.4%)	10(40.0%)	3(50.0%)	34(27.6%)	69(30.7%)	1(25.0%)	136(37.6%)	*294(34.8%)*
Economic	32(32.3%)	9(36.0%)	2(33.3%)	43(35.0%)	58(25.8%)	2(50.0%)	100(27.6%)	*246(29.1%)*
Social	4(4.0%)	1(4.0%)	0	12(9.8%)	29(12.9%)	0	25(6.9%)	*71(8.4%)*
Cultural	3(3.0%)	1(4.0%)	1(16.7%)	6(4.9%)	14(6.2%)	0	13(3.6%)	*38(4.5%)*
Personal	6(6.1%)	1(4.0%)	0	4(3.3%)	26(11.6%)	1(25.0%)	32(8.8%)	*70(8.3%)*
Material	4(4.0%)	1(4.0%)	0	9(7.3%)	10(4.4%)	0	19(5.2%)	*43(5.1%)*
Motivational	9(9.1%)	2(8.0%)	0	15(12.2%)	19(8.4%)	0	37(10.2%)	*82(9.7%)*
Total	*99*	*25*	*6*	*123*	*225*	*4*	*362*	*844*

Table 2.3 shows that the offline determinant categories correspond with the corresponding online uses. For example, *economic* determinants predicted online economic activities. The same could be observed for *social* and *personal* categories. Furthermore, most studies focused on the determinants of *economic, social*, *personal* and *frequency* of Internet use. *Personal* determinants were connected to activities such as *health information seeking* (health), *watching videos* (leisure) or *blogging* (self-actualization). *Beneficial* and *cultural Internet uses* so far gained less attention. Again, *sociodemographic* and *economic* determinants accounted for the largest share, followed by *social* determinants. *Motivational* determinants were also relatively common in the *economic, social* and *personal* use categories, as was the group of *material* determinants.

2.3.5   *Determinants of Internet outcomes*

Internet outcomes are far less studied than Internet skills and uses (Table 2.4). Studies that focus on Internet outcomes primarily included *social* and *personal* determinants, followed by *economic* determinants. *Social* determinants of Internet outcomes were primarily linked to network building and strengthening, both formal and informal. *Motivational* determinants were mostly related to *personal* Internet outcomes.

Table 2.4 *Determinants of Internet outcomes*

Outcomes / Determinants	Beneficial	Economic	Social	Cultural	Personal	Total
Sociodemographic	0	5 (38.5%)	15 (39.5%)	0	1 (5.3%)	*21 (28.0%)*
Economic	0	3 (23.1%)	8 (21.1%)	0	3 (15.8%)	*14 (18.7%)*
Social	0	2 (15.4%)	6 (15.8%)	0	0	*8 (10.7%)*
Cultural	0	0	1 (2.6%)	0	0	*1 (1.3%)*
Personal	0	1 (7.7%)	3 (7.9%)	1 (100%)	1 (5.3%)	*6 (8.0%)*
Material	0	0	0	0	1 (5.3%)	*1 (1.3%)*
Motivational	4 (100%)	2 (15.4%)	5 (13.2%)	0	13 (68.4%)	*24 (32.0%)*
Total	*4*	*13*	*38*	*1*	*19*	*75*

2.4 Discussion

2.4.1 Main findings

Internet access has become a standard for most Western populations. As a result, digital inequality research shifted to focus on determinants of Internet skills, uses and outcomes. With regard to the research question, the review shows two limitations of digital inequality research of recent years that warrant attention.

First, research has primarily focused on identifying determinants of Internet use and, to a lesser extent, Internet skills. To determine who benefits the most (or least) from Internet use, this dissertation is dedicated to the third-level digital divide. Likewise, other digital divide scholars are encouraged to devote future research to the outcome divide. Differences in Internet outcomes are likely to have profound consequences, not least in the reinforcement of existing social inequalities. Furthermore, research on Internet outcomes reveals the real stakes of being online and could stir the motivation of policymakers to create policies that lead to more egalitarian Internet use.

The second limitation that the review uncovers is that the most common determinants studied across all digital divides are sociodemographic and socioeconomic. Demographic determinants are primary, but nevertheless descriptive and superficial factors with limited explanatory power. Access and motivational determinants are also expected because they can be considered prerequisites for using the Internet. Second- and third-level digital divide research on social (e.g., digital support and formal volunteering) and cultural (e.g., cultural capital and religion) determinants need more attention and might provide better explanations of how Internet users obtain (or do not) beneficial outcomes. Social determinants can for example be used to study how individuals

interact and negotiate with others in different contexts, such as home or labor. It is likely that social and cultural determinants require additional information in order to interpret their meaning. For example, a respondent stating to need support when using the Internet, might also be asked about where and how this support is found, or what it means for the way in which benefits from Internet use are obtained. Although social and cultural determinants demand more effort to unravel their exact meaning, preferably by means of qualitative research, they can provide us with extensive explanations for why some Internet users obtain more beneficial Internet outcomes than others.

The review revealed that many different terms were used to describe similar concepts. For future research we recommend using the term *digital skills* when referring to the skills needed to use the Internet in general. Moreover, when referring to the terms for activities and outcomes used in specific studies, it would be convenient to use theoretically grounded categories, for example those proposed in Bourdieu's capital theory (1984), Helsper's (2012) corresponding fields model or Van Dijk's (2005) resources and appropriation theory. Taking Bourdieu as an example, his capital theory stated that people's actions are shaped by the social space they live in, as defined by institutions, norms and conventions. According to Bourdieu, it is important to not only take into account traditionally considered economic capital, but also social and cultural capitals for determining one's status and position. From this perspective, economic, social and cultural capitals could serve as overarching categories. Then, studies would become more comparable. Concerning the determinants, it will be difficult to compose universal, fixed digital divide terminology, because of the multiplicity. However, also here, adopting similar terms and classifications would make the literature clearer and more manageable.

2.4.2   Limitations and future research

In the current review, we departed from the unilateral view that Internet outcomes are generally beneficial, such as outcomes are typically operationalized within digital divide literature. Recently, more attention has been devoted to the negative outcomes of Internet use, such as problematic Internet use, Internet addiction or privacy issues. These negative consequences were not taken into account within this review but do require attention in future research.

The systematic literature review was limited by some restrictions. First, only determinants mentioned in articles from 2011 onwards were included. Although the choice for this time span was substantiated, this review might have excluded relevant articles that were published before that time. In addition, within each of

the three search strings the term *digital divide* was inserted, meaning that only articles mentioning or focusing on the digital divide were included. It might well be that indicators of Internet skills, uses and outcomes were also mentioned within articles that do not specifically adopt a digital divide focus. Future research could elaborate on this review by finding a way to include the determinants of Internet skills, uses and outcomes that were found in other fields of research.

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Appendix 2b. *Determinants of Internet skills*

	Medium-related			Content-related					Safety & Security	General
	Medium-related	Operational (instrumental)	ICT-software	Content-related	Information navigation	Strategic	Creative	Social		
Education	2	2		3	9	4				7
Gender	1	1	4	1	2	1			2	9
Age	2	2		3	6	1			1	6
Internet experience (years)	2	1		1	1					4
Household/family SES	2									5
Internet access	1			1						2
Cultural capital										4
Frequency of use					1					2
Traditional literacy					2					1
Parental education						1				2
Internet access type							1			
Operational skills		1			3	1		1		
Number of electronic devices					1					2
Social–informal networks					1					1
Internet motivation/attitude				2						
Medium-related skills				2						
School performance					2					
Income										2
Formal skills					1	1				
Educational resources										1
Digital support										1
Internet access locations										1
PC at home										1
ICT autonomy										1
Personal–leisure/personality										1
Individual SES					1					
Employment status										1
Mastery orientation										1
Previous achievements										1
Personal–health					1					
Residency										
Health status					1					
Digital skills					1					
Internet access quality				1						
Information skills						1				

Appendix 2c. *Determinants of Internet uses*

	Frequency	Variety	Beneficial	Economic			Social					Personal		
				Property	Education/ employm.	Income/ Finance	Belonging	Informal networks	Formal networks	Political networks	e-Gov	Health	Self-actualization	Leisure
Age	17	4	1	5	11		1	17	1	9	1	13	19	19
Educational level	18	4	1	7	8	1	1	15		9	4	16	15	15
Gender	12	4	1	3	6	2		7	3	11	4	15	22	22
Household income	5	2	1	5	1		1	7		6	2	6	11	11
Employment status	7	1		3	4	1		8		2		2	8	8
Residency	10	2	1	3	3			10			2	4	5	5
Ethnicity	3	1	1	2	2			13				5	4	4
Marital status	2			1				3	1	1		2	5	5
Digital skills	4				1	1		4		3		4	2	2
Offline socializing	2				2	2		6					3	3
Political orientation	1	1		1				1		8			2	4
Internet attitude	5	2		1	1			1	1	1			3	1
Internet access type	1				2	1		5					3	
Internet access	3	1		1	2	1		1				1	1	1
Internet access points					1			2				1	3	3
Pers. trait–neuroticism					1			3		1		1	2	3
Offline news consump.	1							2					4	3
Parental status					1	1		2				1	2	2
Traditional literacy	3	1			1			1				2	2	
Pers.-leisure/personalit.					1			3		1				4
Frequency of use					1	1		3				1	2	2
Household/family SES		1			3			2					1	1
Social–informal networks					1			3		4	2	2		2
Personal–self-actualiz.					1			1		1			1	2
Use of other technologies												5		
Health status	2							1				1	1	
Household/fam. compos.	1				3			1				1		
Digital support					2			1		2			1	1
Pers. trait–openness								2						
Internet experience (yrs.)						1		1	1				1	1
Instrumental skills						1			1				1	1
Individual SES	2	1				1						1		
Networking skills								1					1	1
Social-political networks										4				
Online network size								1		1				
eHealth literacy					1			1				4	1	1

Appendix 2c. *(continued)*

	Frequency	Variety	Beneficial	Economic			Social					Personal		
				Property	Education/ employm.	Income/ Finance	Belonging	Informal networks	Formal networks	Political networks	e-Gov	Health	Self-actualization	Leisure
Social class				1		1					1	1		
Economic–educ./empl.					1			1				1		2
Number of electr. devices						1						1		2
Creative skills								1					1	1
Information skills					3									
Operational skills					1								1	1
Trust in online health info	1											2		
Offline health activities							1					2		
Offline academic orient.	1				2									
Occupational class				2									1	
Internet self-efficacy					2							1	1	
Pers. trait-conscientious										2				
Media use	1									2				1
Formal skills														
School performance					1							1		
Working hours (week)						1								
Internet use												1		1
Technological efficacy					1					1			1	1
Educ. attainment parents								1						
Religion				1		1								
Privacy concerns										1			1	
Pers. trait-extraversion								1				1		
Pers. trait-agreeable										1			1	
Content-related skills		1												
Medium-related skills		1												
Satisfaction w/ physician												1		
Instrumental Internet use								1				1		
School sector					1									
Formal volunteering														
Internet use at work														
Owning goods	1									1				
Cognitive function	1													
Leisure activities	1													

Appendix 2d. *Determinants of Internet outcomes*

	Beneficial	Economic	Economic — Property	Economic — Education & employment	Cultural — Belonging	Social — Social	Social — Informal networks	Formal networks	Political networks	e-Gov	Personal — Health/well-being	Self-actualiz.	Leisure
Internet use				1			1				8		1
Age				2			3	2	1		1		
Employment status			1	1			1	2			3		
Frequency of use			1			1		2			2	1	
Personal–self-actualiz.				1	1				2	1	1		
Gender							3	1	1				
Educational level			1	1			1	2					
Marital status			1			1	1		1				
Social–political netw.				1					2				
Social–informal netw.				1			2						
Household income		1						1	1				
Internet attitude/motiv.	1						1						
Digital skills				1							1		
Household compos.							1						
Content-related skills	1							1					
Internet use language							1						
Communication skills	1												
eHealth literacy	1												
Internet access											1		
Residency								1					

Appendix 2e. *(Sub)categories of determinants*

Sociodemographics	Age, gender, marital status, residency, living area, living environment, urban/rural dimension, life space.
Economic	Income, household income, household wealth, household poverty, family income, SES, household SES, individual SES, owning goods, financial situation, work situation, employment status, employment type, employment status parents, occupational status, social class, life stage, educational level, Years of schooling, educational resources, parental education, educational level parents, school sector, academic orientation, doing homework online, working hours, type of activity - job seeking.
Social	Household composition, family size, family composition, family living arrangement, parental status, having children, parental mediation, number of children, informal networks, connected family members, connected friends, amount of Facebook friends, network size online, socializing, social activity, social support, assessing digital support networks, Facebook friends' instrumental support, formal volunteering, degree of social isolation, social orientation, loneliness, type of activity – e-mailing, type of activity – Facebook, type of activity – social media, type of activity – social network, type of activity – Instant Messaging, type of activity – Social Networking Sites, Facebook interactions, express political content (Facebook), connections w/ political actors (Facebook), political networks, type of activity – social media for political purposes, cyber political participation, political orientation.
Cultural	Cultural, cultural capital, cultural status, cultural possessions, religion, ethnicity, Internet use language.
Personal	Type of activity - information seeking, type of activity – entertainment, type of activity - web support, groups (health related), type of activity - downloading/listening to music, type of activity – gaming, type of activity - podcast use, type of activity - online news, online news use, media use, traditional news media use, online media multiplexity, amount of media, offline news consumption, language integration, traditional literacy, literacy, language skills, English skills, previous achievements, school performance, academic performance, grade level, mastery orientation, shyness, confidence, self-efficacy, cognitive function, health status, mental health, health condition, health interests, physical activity, offline health activities, seeking offline health information, satisfaction with physician, trust in online health information, personality traits – neuroticism, personality traits – extraversion, personality traits – conscientiousness, personality traits – openness, personality traits – agreeableness, psychological distress.
Material	Internet availability, Internet access, access locations, home access, home ICT access, school access, access type, access quality, number of electronic devices, PC at home, use of other technologies.
Motivational	Attitude towards ICTs, attitude towards computers, Internet attitude, Internet motivation, perceived Internet relevance, Internet use, frequency of Internet use, usage frequency, (amount of) time spent online, intensity of Internet use, Internet experience, years of experience, digital skills, Internet skills, e-skills, computer skills, ICT skills, operational skills, formal skills, information skills, strategic skills, medium-related skills, creative skills, ICT competence, digital competence, media literacy, Internet literacy, digital literacy, Internet efficacy, Internet efficacy, eHealth literacy, technological efficacy, Internet use at work.

03

*Following families'
Internet domestication: the
methodology*

3.1 Introduction: Choosing a qualitative approach

From the systematic review outlined in chapter 2, it became evident that sociocontextual determinants of Internet skills, uses and outcomes have so far largely been overlooked in digital inequality research. Including those factors demands a qualitative approach that will be applied in the empirical studies of this dissertation (chapter 4-7). By taking this qualitative approach, we aim to fill the gaps that cannot be bridged by quantitative research alone, which still dominates digital inequality research. While quantitative research often yields results that are representative of and generalizable to a larger population, qualitative research has the ability to be indicative by providing interpretations of the determinants that have been quantitatively studied so far. Qualitative research is less delineated than quantitative methods often are, and the results can be interpreted in context, which we will do by applying domestication theory (chapter 4). As digital inequality research has so far not sufficiently explained *how* digital inequalities manifest among certain segments of the population, this dissertation takes a qualitative approach. The aim is to unravel some of the processes behind those inequalities.

The field studies in this dissertation all had a qualitative focus and together consisted of a series of interviews. The interviews were held at the participants' homes to determine how the Internet is embedded in their social context. Instead of taking individuals as the subject of study, in this series of interviews the family formed the starting point (see section 1.7.1 in chapter 1). The full project consisted of 5 interview rounds, which formed the basis for four chapters and articles. By choosing a design that involves several rounds of interviews, comprehensively studying the families' domestication process and its corresponding outcomes remained manageable for both the interviewees and the interviewers. In addition, spreading the inventory of outcomes over different rounds enabled to include as many outcomes as possible, as some (life) events do not occur regularly but might happen over the course of this study, such as voting for national elections, (chronical) illness or buying insurance for a new car. The rounds of interviews focus on the following themes:

- *Round 1: domestication*
- *Round 2: positive outcomes of Internet use*
- *Round 3: negative outcomes of Internet use*
- *Round 4: positive outcomes of Internet use II*
- *Round 5: children's domestication process*

3.2   Participants

Recruiting families for participation was done by means of a flyer and website that were both designed for this particular study. When participants received a flyer, by means of door-to-door distribution or on social media, they could subscribe on the website. These means of distribution were chosen to obtain a diverse sample and pursue an adequate representation of the Dutch population. After participants indicated their interest on the website, they were approached by telephone and given an additional explanation of the study design. Then, participants were asked to provide some additional information: their family composition, educational level(s) of the parent(s) and address details. Finally, the family representative was given the opportunity to ask questions and they were told to receive a confirmation within a specific time span in case they were selected. In the meantime, the principal researcher made an inventory of interested families and accordingly selected a diverse sample through quota sampling (see below).

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As explained in the introduction (chapter 1), *educational level* was the main selection criterion because it can be regarded as an important component of one's societal position. In addition, educational level is one of the most important contributors to all three digital divide levels, which also emanated from the review in chapter 2. Education was determined by the highest educational level of the single parent or both parents of the family, as within socialization theory, the parent with the highest educational level has before proven to be dominant in determining the family's socioeconomic status (Korupp, Ganzeboom, & Van der Lippe, 2002). Intermediate vocational education and every educational level below that was classified as 'less educated', and higher vocational education and everything above that was classified as 'highly educated'. A family was classified as 'highly educated' in the case of both a less and a highly educated head of the household (n=3). Families were thus selected by means of quota sampling (e.g., Acharya, Prakash, Saxena, & Nigam, 2013; Robinson, 2014), with *educational level* (high and/or low) being the most important quota. In addition, two household characteristics were considered: we aimed for equal family compositions across the less and highly educated groups by considering *the number of children* and *marital status* (Table 3.1). These household characteristics were accounted for to find a larger variation of outcomes within the two educational groups. Having or not having children and marital status define the family structure and are important aspects in the Internet domestication process (Punie, 2005). While the

distribution of families with and without children is almost equal in the two groups, the percentage of single parents is higher in the less educated group than in the highly educated group. This disparity in the number of single parents between the two groups is representative of the Dutch population (Central Bureau for Statistics, 2017). We aimed to include 40 families in the study; therefore, we recruited 50 families to control for dropout. In total, 48 Dutch families participated in the study, and both family heads (if applicable) participated side-by-side in the interviews. The respondents were approached both as representatives of their families' Internet behavior, for example, when it concerned the rules and regulations applied, and as representatives of their individual use and appropriation. From the fourth round on, one family had to withdraw because of the bereavement of one of the family heads; therefore, 47 families participated in the last two rounds. The exact family compositions of the participating families are outlined in Table 3.1.

Table 3.1 *Composition of participating families*

	Less educated group (*N*=24)	Highly educated group (*N*=24)
Families with children living at home	**15** (5)	**16** (3)
1 child	3	5
2 children	5	10
3 or more children	7	1
Adult children (not living with parents)	**7**	**4**
Families without children	**2** (2)	**4** (2)
Total	**24**	**24**

 Note. Aggregate numbers for categories and overall grand totals are in bold. Number of single individuals and single-parent families are in parentheses.

3.3   Procedure

Before the start of each interview, both parents or the single parent of the family had to complete an online questionnaire. This questionnaire served as preparation for the interviewer so that a starting point for the semi-structured interviews could be determined. The questionnaires were based on established theory or literature. For the first round, domestication theory was used (see table 3.2; Appendix 4a); for the second, third and fourth rounds, the corresponding fields model was used as a starting point (see Appendices 5a, 6a). The last round

was based on a combination of domestication theory for the children's section and parental mediation theory for the parents' section (see Appendix 7a).

Round 1 – Interviews about the phases of the domestication process

The characteristics of the phases of domestication – appropriation, incorporation, objectification and conversion – were translated into an online questionnaire (Table 3.2, Appendix 4a). Both the questionnaire and the interview had a chronological character in which the participants were first asked if they could remember when they started to use the Internet and what device was used. The interviewer used the answers provided in the questionnaire as a starting point to build on. Gradually the follow-up questions moved towards current Internet use, and participants had to indicate which devices and applications they currently use and for what purpose. In the case of the presence of children in the household, the parents were asked questions about the way they regulated Internet use for their children, if learning occurred between parents and children and if they used Internet in the upbringing of their children. These questions were asked in the first round because they fit the purpose of comprehensively approaching the domestication process. In the fifth round, only the children themselves participated. The questionnaires and interview questions from round 1 are attached in Appendix 4a.

Table 3.2 *Domestication phases*

Appropriation	*Initial use of Internet*	▪ First encounter ▪ First time use	▪ Where did you first hear about the Internet? ▪ For which purpose(s) did you first use the Internet?
	Acquisition of connection/ device	▪ Motivations/ ▪ reasons for purchase ▪ Digital devices used ▪ Future purchasing plans ▪ Ownership	▪ For which reason did you buy a connection/device? ▪ What was the first digital device you owned? ▪ Which digital devices did you ever use? ▪ Who owns the devices used within the home? ▪ Which devices would you like to buy in the future?
	Purchasing process	▪ Division of roles ▪ Online/offline shopping	▪ Who makes the decision to buy a new device? ▪ What does the purchasing process mostly look like?

	Getting to know the Internet	• Learning to use Internet/corresponding devices • Getting and giving help	• How did you learn how to use the Internet? • Do you help each other with Internet use at home? • Do you seek help from others outside the home? • How would you describe your digital skills?
Objectification	*Aesthetic place in the home*	• Place devices within the home • Expression of style, taste and values	• Where in the home are the abovementioned devices situated? Why? • At which places in the house do you use Internet? • Is there a place in the home specifically arranged for Internet use?
Incorporation	*The way in which the Internet is used*	• Internet activities employed	• Which apps and websites do you use regularly?
	Place in daily routines	• Role of Internet in daily routines • Family routines • Rules concerning Internet use • Life without Internet	• Describe your daily Internet routine. • Do you adhere rules to govern Internet use within the home? • Is the Internet of importance for your free time? • Does the Internet influence interaction in the home? • Would you be able to live without the Internet?
Conversion	*Interactions with outside world*	• Expressions about the Internet	• Do you talk with others about the Internet? • Which devices do you use outside the home? When?
	Redesign and redefinition	• Integration devices • Redefining meanings of the Internet	• Do you use combined/integrated devices? • Did the meaning of devices/the Internet change over time?

Rounds 2 and 4 – Interviews about the positive outcomes of Internet use

Both the second and fourth round of interviews served to develop an inventory of the positive outcomes that less and highly educated families obtain from their Internet use and to find explanations for why they yield these outcomes. In between both interviews, eight months of time lapsed, and the same family members participated in both rounds. The reoccurrence of this round was included to reflect on positive outcomes that do not occur often. As many events do not occur on a regular basis, or last a relatively short period of time, the expectation was that two interviews would capture a larger range of positive outcomes. By repeating the interview in eight months, the chance that outcomes did not occur or were already forgotten by participants was reduced. Possible outcomes in the personal, economic, social and cultural fields were derived from Helsper, Van Deursen, & Eynon's (2015) work. These authors proposed a range of outcomes based on Helsper's (2012) corresponding fields model in the Digital Skills to Tangible Outcomes (DiSTO) project questionnaire. All outcomes were translated into questionnaire statements, for example, *my financial situation has been improved through the Internet.* The resulting questionnaires that were filled out by the participants beforehand, served as a starting point for the interviews. After this first round of questions, participants could add to the proposed list by numerating additional positive outcomes that had occurred to them. All outcomes were subsequently discussed with the interviewer, in which the participants were also asked to elaborate on their satisfaction with these outcomes. Both the questionnaire and interview questions can be found in Appendix 5a.

Round 3 – Interviews about the negative outcomes of Internet use

The third round of interviews served to study negative outcomes in order to grasp the meaning of the Internet to its users in a comprehensive manner, as both positive and negative outcomes can have repercussions for existing offline resources (Van Dijk, 2019). While the four fields of the corresponding fields model (Helsper, 2012) were taken as a starting point, no explicit and comprehensive categorization of potential negative outcomes of Internet use is available. As such we started with an inventory from the available literature to identify as many potential negative outcomes as possible in the personal, economic, cultural and social fields. These outcomes were then translated into statements that formed the basis for the questionnaire. The participants could indicate which of the stated negative outcomes they had experienced. The outcomes ticked by the participants formed the basis for questions asked by the interviewer.

Subsequently, the participants themselves could complement the list by listing and discussing additional negative outcomes that they had experienced and that were not stated in the questionnaire. In addition, for all outcomes mentioned, the way(s) in which the participants coped with these specific outcomes were also discussed, in terms of preventive and passive coping strategies. One interview round was applied to identify negative outcomes. Due to practicalities (time restrictions), it was not possible to conduct two rounds as with the interviews covering positive outcomes. Both the questionnaire and the corresponding interview questions for round 3 can be found in Appendix 6a.

Round 5 – Interviews with children

During the fifth round of interviews, we asked the children (if any) of the participating families to participate in the interview session (Table 3.3). 25 children participated in this study, while 72 children were part of the participating families: the remaining 47 children were either too young to participate in an interview study (< 9 years old) or were grown-ups already living on their own. The aim was to study the way that children make the Internet their own, as influenced by different family backgrounds (less or highly educated) and the mediation processes their parents apply. During round 1 (domestication) the adults or parents of the family were asked about the rules they apply to their children's Internet use and about their more general views on media and their children. This information served as input for the fifth round: children did not have to fill out a questionnaire beforehand. At the end of this first round, parents were solicited for their consent for their children to participate in an interview, and if they did consent, they were asked to make an inventory of their children's willingness to participate and to return this inventory to the researcher. The vocabulary of the interviews was adapted to the age and educational level of the children and some questions were divided into sub questions for the youngest participants. The children were asked which rules – according to them – applied to Internet use in the household, what they think of these rules, and where and how they learned to use the Internet: did their parents play an important role here, or was it the primary school that steered this process? The children were also asked about their Internet use in relation to their friends and if they had ever experienced something unpleasant online. In principle, the children participated in the interviews on their own without their parents joining them, unless the children only wanted to participate in the presence of their parents. The children were assured that their answers would not be shared with their parents or others and that they did not have to answer any questions they did not

want to discuss. The set of questions that served as the basis for each personalized interview, can be found in Appendix 7a.

Table. 3.3 *Demographics of participating children*

	Highly educated parents		Less educated parents		Total
	Male	*Female*	*Male*	*Female*	
8-10 years old	3	3	0	1	7
11-13 years old	3	1	2	2	8
14-16 years old	1	1	2	0	4
17-19 years old	0	0	3	1	4
20-22 years old	0	0	1	1	2
Total	7	5	8	5	25

3.4   Analysis

Each of the 191 interviews of the first four interview rounds were transcribed verbatim and then coded within the qualitative analysis software program Atlas.ti. For the first four interview rounds a coding scheme was established, combining an inductive and deductive approach: the scheme was initially structured on the basis of categories derived from the theory used for the relevant round of interviews. For the domestication round, the categories were based on the four phases of domestication (Appendix 4b), while, for the outcomes interviews the four domains of the corresponding fields model were used and responses could be classified under subthemes if necessary (see Appendix 5b for positive outcomes and Appendix 6b for negative outcomes). Then, these predefined coding themes were supplemented with codes related to the participants' own interpretation of the domestication phases or outcomes (inductive), by rereading the transcripts while identifying subcategories. Next, the investigator returned to the data by first 'testcoding' three transcripts from each round to evaluate whether each category was broad enough to categorize all data. Finally, the codebook was finished. To each of the interviewing rounds a second coder was assigned to code a sub sample of transcription, to control for the reliability of the coding by calculating intercoder reliability. For the domestication, positive and negative outcomes rounds, Cohen's kappa values were determined which denoted good agreement between the coders (Table 3.4). The findings were translated from Dutch to English for final write-up.

The last round of interviews (with 25 children) was explorative, because of the small number of participants. Interview questions were based on

domestication theory but adapted to the children's age, constituting a simplified version of the questions in round 1. Therefore, no specific codes were anticipated: the interview questions served as the codes. The interviews were transcribed and read to identify latent themes, and then the themes were inserted in Excel and summarized for each participant.

Table 3.4 *Inter-rater agreement as measured by Cohen's Kappa (κ)*

Round 1 – domestication: κ = .73
Round 2 and 4 – positive outcomes: κ = .83
Round 3 – negative outcomes: κ = .82
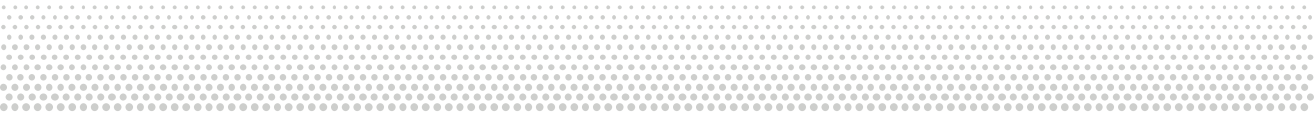
04

Internet use in the home: Digital inequality from a domestication perspective

4.1   Introduction

As was underlined in chapter 2, a focal point of digital inequality research has been the identification of determinants of Internet skills, uses and outcomes. Yet, as digital inequality research is still heavily dependent on quantitative approaches, it remains at a descriptive level and provides little explanatory power. Although these approaches help identify which segments of the population benefit most from the Internet, they do not explain *how* determinants result in beneficial Internet use. To provide such an understanding, it is necessary to step back from the common quantitative approach used in digital inequality research (Helsper, 2012; Mason & Hacker, 2003; Tsatsou, 2014). Little empirical attention has been paid to sociocontextual factors, such as how the Internet is embedded in family life or how one's job stimulates (advanced) Internet use.

A framework to investigate how sociocontextual factors influence the way in which people use and benefit from the Internet is offered by domestication theory (Haddon, 2006, 2007, 2011; Silverstone, Hirsch, & Morley, 1992). As introduced in chapter 1, this theory may – with its socially constructive perspective – provide useful insights on how Internet use is embedded in people's social and cultural contexts. This study seeks to unravel how the Internet domestication process plays a role in digital inequalities. While domestication theory typically focuses on the way that people adopt and use the Internet, in the current contribution we will also analyze the actual meaning of this process in terms of the outcomes that people derive from Internet use. In-depth interviews with members of 48 Dutch families with different compositions and educational backgrounds were conducted in the Netherlands. Educational level of attainment was chosen as selection criterion (24 low, 24 high) as it can be considered one of the most important contributors to digital inequality (chapter 2) and as an important component of socioeconomic status (Shavers, 2007). By adopting a qualitative approach, we explain how a family's educational background contributes to digital inequalities in the home and family context. The following research question will be addressed:

> *How do families with lower and higher educational backgrounds*
> *domesticate the Internet?*

4.2 Theoretical framework

4.2.1 Digital inequality

While digital inequality research once started with a general focus on information and communication technologies (ICTs), in the past decades, it has mostly focused on the Internet. The first-level digital divide focuses on differences in the distribution of Internet access, which was originally perceived as a binary distinction (Dewan & Riggins, 2005; Mehra, Merkel, & Bishop, 2004). Since Internet access has increased in most Western countries, having a connection is no longer considered the primary condition for benefiting from the Internet. A second-level digital divide (Hargittai, 2002) emerged regarding skills and types of use (e.g., Blank & Groselj, 2014; Zillien & Hargittai, 2009). Recently, scholars have started to focus on the outcomes of Internet use or the ways in which people can benefit from the Internet (e.g., Blank & Lutz, 2018; Van Deursen & Helsper, 2015).

Digital inequality research has identified a large variety of determinants to explain the first-, second-, and third-level divides, as was underscored by the systematic literature review in chapter 2. On a more general level, the majority of uncovered determinants are limited to sociodemographic and socioeconomic indicators, such as *age, gender, educational level* and *income* (chapter 2). This line of work has been very important to uncover who is benefiting most from Internet use and who is lagging behind. For example, those who are more highly educated possess higher levels of different types of digital skills (Correa, 2015), use the Internet in a more capital-enhancing manner (Hargittai & Hinnant, 2008), and thus benefit most from Internet use (Van Deursen, Helsper, Eynon, & Van Dijk, 2017). However, factors that could offer more in-depth explanations as to *why* some people benefit more from using the Internet than others are largely overlooked. Domestication theory offers a useful framework for identifying the sociocontextual influence on digital inequalities, as it takes a social shaping approach to understanding technology and the social constructs in which technology use actually takes place (Richardson, 2009).

Domestication focuses on the development of what technology means to users and non-users and how it is immersed in daily life (Silverstone et al., 1992). Besides, the theory offers explanations for how individuals integrate new technologies into their particular social context. This sociocontextual perspective contrasts with the materialist perspective that is often applied to digital inequality research, in which the social context and one's daily life aren't considered. The influences of the household and workplace (Haddon, 1992) are emphasized in the process of attaching meaning to and making the Internet one's own. According to domestication theory, the Internet is integrated into daily routines in such a way that people shape it to their preexisting practices and values, for which the domestication process is likely to differ between each household and individual (Silverstone & Haddon, 1996). Within domestication theory, four phases can be distinguished (Hynes & Rommes, 2005).

- *Appropriation* addresses the acquisition and possession of Internet access and devices to use the Internet. This phase explains how families give substance to the purchasing process, such as who decides to buy a new device. Furthermore, appropriation concerns the motivations and reasons for Internet use. This focuses on the initial use of the Internet and the process of getting to know the Internet and its corresponding devices. The Internet is appropriated when it enters the home and use is initiated; it is now a domestic object within the home.
- *Objectification* focuses on the expression of style, taste and values, for example, by how the devices are aesthetically given a place within the home (Chambers, 2016) and thus concerns the spatial aspect of domestication (Berker, Hartmann, Punie, & Ward, 2006). For example, placing a desktop computer in a home office differs from displaying it in the living room where it is central for every household member. Objectification is also about exploring the features and possibilities of an ICT when it is given a place in the home, but for the Internet to be incorporated it has to be actively used, such as in a particular task or Internet activity (Silverstone et al., 1992).
- *Incorporation* focuses on the place of Internet in the daily routines of the user. It emphasizes that the Internet is not only part of the daily family routine but also influences it (Berker et al., 2006). This phase concerns the way the Internet is assimilated into temporal routines (Chambers, 2016) and how it is used within those routines while it is also influenced by contextual factors such as gender and status (Birkland, 2013). For example, having one laptop in the household involves organizing

schedules and the regulation of which activities can be employed and
which cannot.
- Finally, *conversion* concerns the relations and interactions of the
household members and the outside world. Devices have become
familiar, and their use is integrated into the daily routines of the
household and its individual members. At this point, domestication can
be called successful, rather than finished, since the shaping of use, values
and display will never be fully completed (Berker et al., 2006). The
symbolic enhancement of the household's public image takes place
during the conversion phase, such as by talking to others outside the
household about one's Internet use. While the meanings that household
members associate with the Internet will stabilize and the Internet as an
object has become a matter of course, conversion is a process of
continuous negotiation (Mansell & Silverstone, 1996; Silverstone, 2006).

Although these phases in theory occur chronologically, in reality, the phases
often overlap and can return later on in the domestication process (Hynes &
Rommes, 2005). A process of the redesign and redefinition of a device may also
take place, such as when a device is integrated into another device (e.g., after
connecting a TV to the Internet, it may obtain another meaning for the user).
Inherent in domestication is that it is an ongoing process. The domestication
process can be considered successful when the technology at hand is no longer
perceived as new and has become part of the daily routine (Berker et al., 2006). At
this point, the meanings of the Internet are reflected upon and may change at
any point (Mansell & Silverstone, 1996; Silverstone, 2006).

4.2.3   Inequalities in domestication

In early domestication studies, the focus was predominantly on unraveling
participants' personal meaning of media or ICTs in general (as the Internet wasn't
omnipresent at the time of investigation). Participants were predominantly
selected on the basis of their work situation, family structures, or age (e.g.,
Haddon & Silverstone, 1993; Hartmann, 2005; Russo Lemor, 2005). Later,
domestication studies focused explicitly on the Internet instead of adopting a
more holistic view on ICTs (e.g., Bakardjieva, 2005; Hynes & Rommes, 2005). Very
few of these studies are linked to digital inequality (Bergman & Van Zoonen,
1999; Richardson, 2009; Ward, 2005) and (to our best knowledge) none of them
looked specifically at the role of educational attainment in relation to how the
Internet is domesticated. In the current contribution, we use educational
differences as a starting point for unraveling differences in the domestication

process between families. Furthermore, we consider one's educational background as part of the larger social context. Domestication studies typically adopt a narrow view of one's social context: the home. Yet, the home is not the only place in which the Internet is used, and family members are not the only peers who can influence or teach an individual (Haddon, 2011). Given the ubiquity of the Internet adds considerable dimensions to the domestication process, the household context should be extended (Haddon, 2006, 2011), or as Haddon argues: "the strength of the domestication approach lies in providing the context to people's ICT decisions" (p. 314)*.

4.3   Method

For the details of the method used in this study, see chapter 3, in which an overview of the participants (characteristics) is included. The questionnaire and corresponding interview questions are attached in Appendix 4a of this chapter. The corresponding coding scheme can be found in Appendix 4b.

4.4   Results

The results of the interviews will be discussed for each domestication phase, comparing lower educational attainment groups (LEA) with higher educational attainment groups (HEA).

4.4.1   Appropriation

Initial use of the Internet
Within both LEA and HEA, about half of the members heard about the Internet for the first time because a family or household member talked about it. The other half of the HEA-members first heard about the Internet at school or at work, with school also being the place where the Internet was used for the first time.

> *"We had to follow computer lessons. The final part was on programming and my primary school teacher couldn't figure it out. Eventually I taught him how to do that, I had already learned it myself at home." –* HEA, male, 39

When HEA-members found out about the Internet either at work or at school, this was mostly the result of their age and life stage at the moment the Internet emerged. LEA-participants relatively often found out about the Internet because it was generally known. The majority of this group used an Internet connection for the first time just to 'search for something'.

> *"For me, it was solely for business purposes. In the beginning I thought: do I really need it? But eventually I couldn't refuse anymore."* – LEA, male, 71

Acquisition of a connection and device
LEA-members often purchased an Internet connection because they felt they had to 'keep up with times', as a type of obligation.

> *"The kids needed it for school so therefore we had to purchase a connection. Having a PC was a welcome extra for us."* – LEA, male, 54

HEA-members wanted to connect to the Internet at home because of the convenience, making this a more voluntary choice. For the younger HEA-participants, it wasn't a choice because the Internet was already present. Concerning device ownership, most family heads now share devices, except for smartphones.

> *"We use each other's devices. Our kids are in an iPad school, so therefore we purchased two separate iPads."* – HEA, F, 47

> *"The kids aren't allowed to have their own tablet, but they do use ours."* – HEA, female, 45

When family members have one or more devices for themselves, these devices are mostly used for work. This especially accounts for those in HEA. Furthermore, HEA-parents are critical towards device ownership for their children; they tend to postpone it as long as possible. Families in which everyone has his or her own devices are mostly families with a single parent; the majority of this type of ownership thus was applicable to LEA-families.

> *"The kids have their own devices. The middle one has a tablet, a laptop and an iPhone, the youngest has an iPhone for gaming. He turns five next month."* – LEA, female, 36

Independent of status group, nearly all families own at least one laptop, one tablet and a mobile phone, and about half of both groups still own a desktop computer. There are not many differences concerning the types of devices that families own, although HEA-families usually have more pieces of each type. Mainly HEA-members possess one or more 'other' devices that connect to the Internet, such as a game console or smart TV.

Getting to know the Internet
The way in which people first learned how to use the Internet does not specifically differ between status groups, but it is mostly dependent on age. While householders under the age of 40 often learned to use the Internet unconsciously through learning by doing, older family members often needed courses or the help of children or other experts. The way in which household members now seek support differs. The heads of HEA-families help their children more often. LEA-children often help their parents. Mutually helping each other, no matter what role in the family, is more common in HEA.

> *"No, I can no longer help my children, we passed that stage. It is now the other way around."* – LEA, female, 49

> *"We do help the kids, but it's also the other way around.* [Son's name] *can still help us, or he helps his sister with something."* – HEA, female, 47

In turn, seeking help from a member outside the household, but within the social network, is more common among LEA-families. This does not stem from the availability of experts in LEA-members' social network, but from their own skill level. HEA-members solve problems themselves more often.

Some of the HEA-participants indicated an early, general interest in ICTs. This was often given practical meaning by joining a computer club.

> *"I still had to come to class, but the teacher didn't ask me questions anymore. He understood so much less than I did. I started programming independently."* – HEA, male, 39

> *"Computers were my hobby and the Internet was part of it. I joined a computer club to gain more experience and knowledge."* – HEA, male, 39

Most of these members now have ICT-related jobs. This combination of an overall, early interest in Internet, together with a job in ICT, reflects the early adoption of the Internet but also keeping up with new developments. The ability to pursue one's ICT-interest was dependent on whether parents could afford and would support buying computers and software or joining a computer club. In regard to getting help or helping others, these people often are the experts within the family or their larger social network.

Purchasing process
The Internet consumption process differs between LEA and HEA due to having or not having an expert or early adopter in the family. In HEA-families, early adopters or ICT-interested family members largely determine the purchasing process. Generally, these household members perform online research and create a shortlist. If applicable, the other head of the family indicates his or her requirements, after which a final choice is made. Often, the expert already indicates a 'first choice'.

> *"I mostly conduct research. I read reviews and read through things endlessly. The result is often a shortlist of two or three devices that I present to her."* – HEA, male, 41

For most of the members in both groups, the type of product would determine whether they would gather information by contacting experts and if they would buy in a physical or online shop. Clothing and digital devices are products that people would rather buy in a shop because of the face-to-face contact with a seller and the possibility of getting a warranty. Older people often let themselves be guided by warm or professional experts before making decisions. Another reason for buying in physical stores is that people want to support local entrepreneurs (especially in rural areas). A purchasing desire expressed several times within HEA was domotics (home automation). The highly educated, ICT-working heads expressed a strong interest but also a critical view towards purchasing and integrating such devices into the household. Most of these HEA-members are waiting until these technologies mature.

> *"The problem with the Internet-of-Things is that there's a fine balance between ease of use and security [...], so it is at the expense of safety."* – HEA, male, 45

A few LEA-members mentioned an interest in domotics, mostly in relation to 'fun'. Interest in buying a smart TV in the near future was mostly expressed by LEA-members, since many HEA-families already own such a device. Other than that, most families did not have specific wishes.

4.4.2   Objectification

Aesthetic place in the home
The Internet is being used in both groups throughout all rooms, as well as outside the house and on different devices. The general rule seems to be that the device that is most handy and practical is being used—often a smartphone or tablet. People switch to tablets and laptops when a device with a bigger screen or detached keyboard is needed, such as for watching a movie or writing reports. A home office is mostly present when at least one head of the family has a job in which working at home is an option and Internet is required, mostly among HEA-members. In cases where a desktop computer is present, this is often placed in a quiet and spacious room so the employee can work undisturbed.

> *"I am mostly in our home office actually, because it's comfortable and I can work very concentrated over there."* – HEA, male, 61

Some LEA-families have a 'game room', where household members can entertain themselves without disturbing others.

> *"I don't need all that equipment in my living room, and certainly not in the kids' bedrooms, so we created a kind of gaming room."* – LEA, female, 34

Expression of style, taste and values
Overall, the physical placement of devices has little to do with the expression of values, tastes or styles, but is a result of personal interest. Independent of status group, most people do not have a strong desire to own the latest devices or to place a device in a central place in the home. When people prefer to own the newest devices, this is because of a predilection for gadgets, not because they like

to show off. Having a strong brand preference often results from familiarity and habituation, so they do not have to adapt to new operating systems.

> *"I do have a large preference for Apple, but that is because I'm used to it and find the system very user friendly. I would never want the most expensive and newest device."* – HEA, female, 39

While people do consider the appearance of devices such as smart TVs, this is because of personal aesthetic preferences. It seems that because the Internet and its corresponding devices are (physically) omnipresent, devices are no longer used to distinguish oneself from one another. Only in one LEA-family did the heads buy the newest devices to look good, which had to do with the fact that they own a fashion store and therefore want to 'match their appearance with their image'. HEA-families mentioned specific functionalities that are important when orienting on new devices, such as processor speed and memory. In contrast, LEA-families focus more on value for money or price quality.

> *"The price-quality ratio should simply be right."* – LEA, male, 47

> *"It's about the functionalities of the device in combination with the purpose you're using it for."* – HEA, female, 32

4.4.3   Incorporation

Place in daily routines
The way people go through the incorporation phase differs between people who have a job and those receiving unemployment benefits. The latter was only applicable to LEA-members and argued that they do not have a fixed pattern of Internet use but use it whenever they feel like it. There are differences among working people. HEA-members check notifications and news in the morning, use the Internet as part of their work during the day (or working shifts), and use it as a source of relaxation during the night or after work. Most LEA-members also use the Internet whenever it is deemed useful or desired, with the addition that the Internet is used throughout work shifts if it is inherent in the type of job.

> *"Nah, it just goes on during the day. The computer is on until I go to bed."* – LEA, male, 53

Lastly, an equal number of members from both groups have a fixed Internet routine in the morning, mostly checking notifications and news. After this routine, the pattern varies depending on their specific activities that day.

The way the Internet is used
There are not many differences between LEA and HEA concerning the type of Internet activities performed; information seeking, shopping and following the news are mentioned most. Both of the groups use the Internet for work-related purposes and for social media. However, in regard to work-related Internet use, for LEA-members, most of the time Internet use has organizational or administrative purposes, while HEA-members oftentimes cannot perform their job itself without an Internet device. This also reflects the reasons why people use devices outside of the home, as 'working externally' was mentioned much more in HEA. Concerning social media, LEA-family heads use it as a way to maintain social contacts, while HEA-members more often use it for professional purposes.

> *"I play games via Facebook, it's called Facebook Room [...]. It is pastime."* – LEA, male, 53

> *"I'm on LinkedIn for networking. Searching for that one person who's got something I need."* – HEA, female, 29

While online shopping delivers financial benefits for both groups, convenience and time savings are more important among HEA-members. A trend observed within HEA was that the meaning and usefulness of social media are undergoing redefinition. Some participants deleted their Facebook account or at least shifted to professional social media use only, as the meaningfulness of social media platforms are critically reflected upon. The main reason for quitting specific social media is that its prime uses shifted away from being social with friends and family to a place where everyone expresses opinions or places unwanted content.

> *"The purpose of Facebook has changed over the years. Nowadays it is more for reading articles, not for maintaining social contacts, for which it was meant originally."* – HEA, male, 39

> *"It ignores what it was actually made for. [...] It has nothing to do with social contacts anymore."* – HEA, male, 49

Family routines

The Internet has influenced household routines and interaction from the moment it entered the home for both groups. For about one-third of members of both groups, the Internet facilitates maintaining contact between household members when away from home. However, an equal number consider the Internet a disturbing factor for communication within the home. Household members, both parents and children, often are occupied by smartphones and have less attention for others.

> *"We used to watch TV altogether, now we're increasingly doing our own thing, individually."* – LEA, female, 56

> *"Look at our sons, it <Internet> will come anyway sooner or later. But we also want to tell them that there is an outdoor playground, or one can paint inside. Enjoy it."* – HEA, male, 39

HEA-parents seem to be concerned with consciously thinking of ways to diminish this tendency. While rules are present to regulate household Internet use (e.g., restrictions on type of websites and fixed times online) in both groups, HEA-parents more often use the Internet as an educational source or for finding information about upbringing.

> *"I'm consciously working on that. For school for example, I'm searching for the apps that are important for learning numbers and letters."* – HEA, female, 40

> *"I search for information, about babies and when they sleep through the night for example. Everyone wants their baby to sleep through after week 12, so I searched for how I should approach it."* – HEA, female, 32

Life without the Internet

Most HEA-members believe that living without the Internet would take some effort but is possible, except for work-related tasks and online governmental services. It would just involve finding another way to perform tasks. LEA-members consider living without the Internet impossible. Those with unemployment benefits or those who are retired consider it important for entertainment and believe they are highly dependent on the Internet for the fulfillment of their daily routines.

"I just had an Internet breakdown lasting two days. I couldn't do anything online, then you got me!" – LEA, male, 53

"If the Internet doesn't work over here, it's not a disaster. Internet is convenient, but there are so many other things by which you could be entertained. For work it's another story though." – HEA, male, 36

4.4.4   *Conversion*

Interaction with world outside the home
Within both groups, most members talk about the Internet. However, conversations do not involve expressing or promoting people's own or newly acquired knowledge. In most cases, it is about content found online. Some HEA-members talk about new developments, stemming from personal interest, or advocate for responsible Internet use.

"I do like to talk about the Internet at work, but also in other spheres. It's awareness. I start preaching a bit, about what is wise and what isn't." – HEA, male, 39

Beyond that, the 'negative influence' of the Internet on social behavior is a conversation topic. The omnipresence of digital devices makes buying or displaying a device for people's own status obsolete.

"The anti-social aspect, that everyone is always with their phone. For me that's a reason not to be fond of the Internet at all." – LEA, male, 43

"What's brought up sometimes, is the annoyance. The continuous use of mobile phones by people, I think that's something that annoys us all." – HEA, female, 60

Nearly all members of status groups consider the presence of and using the Internet a matter of course. The 'taken for granted' stage seems almost saturated. Only some senior members stressed that using the Internet does not always come naturally to them.

Redefinition

Redefinition first happens through changed device functions. Within both groups, about one-third noticed that their smartphone has increased in functionality and has taken over the functions of other devices, such as e-mail and music. Second, redefinition concerns connecting different devices, such as combining smartphones with activity trackers to support workouts, or tablets with a television to stream movies. The latter type of redefinition occurs more in HEA.

> *"Before, you used a mobile phone only to make phone calls, nowadays also for gaming and reading. It has actually become a computer."* – LEA, female, 42

> *"We don't have a TV subscription anymore [...]. There is a TV, but that's only for casting YouTube or other online services."* – HEA, male, 39

HEA-members often have thought out motives for integrating devices. They more often delve into the functionalities and added value. The integration should eliminate other devices, make daily routines easier or even fully facilitate daily practices.

> *"I'd like to have domotics devices, new developments that can make our life more convenient. [...] The goal is always time saving and productivity."* – HEA, male, 39

> *"I'd like to have a smartwatch, but at this moment the application is limited. I don't see the added value yet."* – HEA, male, 41

Redefining personal meanings of the Internet

In addition to the redefinition of devices, the redefinition of the Internet in general is often mentioned. HEA-members seem to increasingly want to disconnect in their free time and are consciously doing so. Some of them want to go 'back to the past' by performing activities without the Internet, giving examples such as *going outside for a walk, playing board games with family members* or *reading a paper book.* They consider the Internet a convenient tool in facilitating routines in daily life and making life easier and faster, but not as something on which they are fully dependent. Both this dependency and the disruption of

conviviality in the home are reasons to reconsider the added value of the Internet.

> *"You shouldn't participate because everyone is doing so. You just have to ask yourself: what can I yield from it?"* – HEA, female, 63

> *"The trick is to take care that the Internet isn't going to dominate. That might be the biggest mistake."* – HEA, male, 39

Disconnecting is a result of consciously weighing, and thus defining, what being online yields. The fact that a large part of HEA-members use Internet at work already results in a desire to disconnect in their free time. Disconnecting might help them spend quality time with their family or on their own, but it also helps in developing themselves or their children in nondigital ways.

> *"I don't know if I'm suitable for this subject anyway, I notice that I'm going back. I feel the need for 'being old school' again."* – HEA, female, 41

> *"I'm online because the Internet is there, it's available. Otherwise, I would watch news programs on TV or I would practice sports more. In that sense, I actually see the Internet more as a limitation."* – HEA, female, 37

While the Internet remains of high importance in daily lives, it is increasingly seen as a means to facilitate daily routines and to take over chores that do not need human action. As a result, HEA-families save time that can be used for other activities. Of course, the possibility to redefine and disconnect in such a way is dependent on having the resources to do so: being able to find the right services online (digital resources, skills) and having the economic resources to invest in these services.

Only a few LEA-members want to spend less time online sometimes, but their motives differ from those of the HEA-participants. Somewhat older householders prefer to disconnect because they grew up and used to live without the Internet and know that, for them, performing offline activities can be just as pleasurable as being online.

"Well, I had rather seen it somewhat more personalized. We used to have a bank office. If you had any problem, you would go there. That way you can talk to them and explain the problem." – LEA, male, 77

Table 4.1 *Summary of differences in domestication phases between HEA and LEA*

	HEA	**LEA**
Appropriation	▪ Out of Interest ▪ Work or study related ▪ Work devices at home ▪ Critical toward children's device ownership ▪ Parents help children ▪ Solve problems themselves ▪ Purchasing process guided by expert family member ▪ Interest in domotics	▪ Feeling of need ▪ Family members have their own devices ▪ Children help parents ▪ Seek help outside the household ▪ Purchasing process dependent on product type, age and rural-urban dimension
Objectification	▪ Specific functionalities are important, style is not	▪ Price-quality ratio and value for money are important, style is not
Incorporation	▪ A fixed, daily Internet routine ▪ Effective use as a result of consciously weighing Internet activities ▪ Online shopping for time savings, financial benefit as a bonus ▪ Social media for professional purposes, undergoes redefinition ▪ Internet often inherent in the job ▪ Can imagine living without the Internet, finding alternatives ▪ Taking action to diminish influence of Internet on social family routines	▪ Using Internet whenever desired, without fixed pattern ▪ Mostly 'surfing' the Internet ▪ Online shopping for financial benefit ▪ Social media to maintain contacts ▪ Internet at work serves administrative/organizational purposes ▪ Can't imagine living without the Internet
Conversion	▪ Talking about Internet out of interest ▪ Advocating for responsible use ▪ Internet integrated in daily lives, but urge to disconnect in free time ▪ Weighing and redefining what Internet means	▪ Talking about content found online Going with what comes up/is desired

4.5   Discussion

4.5.1   Main findings

The purpose of this contribution was to better understand how a family's educational background might contribute to digital inequalities. We did so by looking at differences in the appropriation, incorporation, objectification and conversion phase of the Internet domestication process. Before discussing differences, it is worth stressing that LEA- and HEA-members had things in common, for example as they engaged in similar activities online, including serious (work and organizing purposes) and leisure activities. Recent investigations reveal that while a broad range of activities is now common among people with different levels of education, at the same time relative differences increase, causing those with higher levels of education to reinforce their already strong positions in society (Helsper, 2012; Van Deursen & Helsper, 2015). Some of the differences in all four of the domestication phases provided potential explanations as to why Internet use and routines are shaped differently for families with different educational backgrounds.

For HEA-members, Internet domestication can be summarized as proactive, reflective and critical, which results in overall well-considered Internet use. Departing from the appropriation phase, HEA-members generally have positive and specific reasons for Internet adoption, including using the Internet in the course of employment. Purchases are researched in a systematic way, valuing various technological features, and parents are mostly able to solve any issues for themselves and their children. They have a critical attitude towards recent Internet developments, which is for example reflected in postponing the moment when their children start using the Internet, or in limiting or even ceasing to use social media themselves. In general, LEA-members adopt an initial approach that is less dedicated to continuously evaluating the usefulness or remunerative character of specific devices and activities at stake. Furthermore, parents in LEA-families are more likely to be assisted by their children and also request help from others in their social network. Online, LEA-members seek value for money when making purchasing decisions and value the Internet's financial benefits more. Their relatively limited developed Internet skills and knowledge make them feel obliged to use the Internet in order to 'keep up' with others. Although some routines in Internet use were present, they often use it spontaneously.

The observed differences between LEA- and HEA-members can be considered in light of the (information) habitus. As set out in chapter 1, the *habitus* (Bourdieu, 1990) refers to the mental structure that individuals develop during

their life, while growing up in a particular social environment. Individuals with a comparable (educational) background develop a similar habitus and make similar lifestyle choices, which predisposes them to a certain way of routinely acting and thinking in daily life in general. The results underline that these attributes also transfer to the way the Internet is domesticated. Robinson (2009) elaborated on Bourdieu's idea of the habitus, by formulating the *information habitus*. Relating that concept to the results in this chapter, HEA-members adopt an approach or habitus of 'studious leisure', which results in consciously exploring possibilities and benefits that the Internet has to offer. HEA-members attempt to limit unnecessary activities, while LEA-members adopt an approach or habitus that could be denominated as 'keeping up with the crowd'. These are important observations that receive little attention in common digital inequality research, which typically presents sociodemographic indicators for differences in types of access (chapter 2). Differences in the Internet domestication process between the less and highly educated are likely to contribute to important phases of Internet appropriation where inequality presents itself: motivation, material access, Internet skills, uses and the tangible outcomes obtained from Internet use (Hargittai, 2002; Helsper, Van Deursen, & Eynon, 2015; Van Dijk, 2005). Although we did not link our domestication results explicitly to these phases of inequality, new insights and explanations of why differences in education contribute to digital inequality are offered. The differences already take shape in the early stages of domestication. A sequential process seems to take place, in which the initial approach toward the Internet seeps through to subsequent phases and is transferred to children. The results even suggest that differences in the initial approaches towards the Internet are reinforced in subsequent phases. Overall, considering digital inequalities from a domestication perspective enables to add deeper explanations to traditional notions of stratification based on economic class (Weber, 1947).

On a final note, based on the above one might expect that HEA-members perceive the Internet as more important than LEA-members. However, while HEA-members do consider the Internet as a helpful tool to support daily tasks, they do not perceive it as something indispensable. Their reflective approach makes them rethink the value of the Internet for their own life, in several cases even resulting in an urge to disconnect in their free time. In contrast, LEA-members regard the Internet as undoubtedly indispensable in their daily lives; as something they could not live without. This is reflected in their urge to 'keep up with the crowd'.

Limitations and future research

In the current contribution we normatively assumed that differences in Internet domestication are likely to result in digital inequality. Future research might take the considerations of one's social context one step further by empirically linking Internet domestication to different stages of digital inequality. This might help us to better understand how social inequalities are reinforced by the use of technology (DiMaggio & Garip, 2012; Van Deursen, Van Dijk, & Ten Klooster, 2015). If the normative assumption drawn in this study, that differences in the domestication process might lead to differences in objective benefits derived from Internet use, holds true, an important question that remains is whether LEA-members actually consider themselves as being marginalized. As we did not delve deep into the agency and efforts of less educated users in mitigating inequalities, future research should further explore this question from the LEA-members' perspective. The results on the subjective importance of the Internet among LEA- and HEA-members raise questions about the 'more Internet is better' viewpoint that so often accompanies (quantitative) digital inequality research. Here, it is typically assumed that those who use the Internet more frequently and extensively reap the most benefits. Future research should examine if extensive Internet use indeed leads to more beneficial outcomes, or that HEA-members' urge to disconnect might actually abate negative effects of Internet use (therewith increasing the relative amount of benefits).

 Additionally, HEA-member's urge to disconnect touches upon the idea of being 'alone together' (Turkle, 2011). Many HEA-participants expressed their concerns about how the Internet nowadays negatively affects their relationships. A large amount of those participants also expressed their desire to increasingly 'go offline' for more qualitative interactions. Future research might study how different educational groups perceive the idea of being alone together and how the Internet and its various applications play a role here.

Questionnaire	Example interview questions
Where and when did you first hear of 'the phenomenon Internet'? …………………………………………………………… …………………………………………………………… ……………………………………………………………	Can you elaborate a bit on your thoughts about the technology back then? In what stage of your life was this? How eager were you to get to know 'the Internet'?
Think about the first time you used the Internet, what did you use it for? …………………………………………………………… ……………………………………………………………	What was the reason to use this application? Was it your own initiative or were you asked to do so? How did you like your first time online?
What was the reason you purchased an Internet connection? …………………………………………………………… …………………………………………………………… …………………………………………………………… …………………………………………………………… …………………………………………………………… ……………………………………………………………	Would you indicate yourself as an early adopter? As you state that it was the imitative of [family member], didn't you feel this need yourself? Was the Internet used for this reason only for a long time, or did other applications follow soon?
How (of whom) did you learn how to use the Internet? …………………………………………………………… ……………………………………………………………	Can you elaborate on 'by myself'? What did this look like? What did the lessons/courses look like? Did you feel like it was a necessity?
Did you ever follow courses or workshops to learn how to use the Internet and its corresponding devices? If so, which ones? O Yes, namely: ………………………………………… O No	Can you elaborate on [course], what did you learn here? Why did you follow this course or workshop? How useful was it for you to follow this course?
For which purposes do you use the Internet nowadays? Try to answer as complete as possible, you can fill out several purposes. …………………………………………………………… …………………………………………………………… …………………………………………………………… …………………………………………………………… …………………………………………………………… …………………………………………………………… …………………………………………………………… ……………………………………………………………	How is the balance between offline and online for [specific purpose]? Why do you prefer to do [specific activity] online instead of offline? What would be the reason for you to still do [specific activity] the offline way (sometimes)? What is the benefit of doing [specific activity] online? I see you didn't indicate [specific activity] online, is that right? Do you do this offline?

	If so, why not online?
How would you grade your Internet skills on a 1-10 scale? 1 2 3 4 5 6 7 8 9 10 O O O O O O O O O O	How satisfied are you with your Internet skills? Can you explain why you indicate [grade]? Which skills would you like to acquire? If there's no improvement possible, why not a 10?
What was the first device with Internet that you used? O Personal computer (PC) O Laptop O Tablet O Smartphone O Other, namely:	Was this device your own? Where did you use this device? What did you use it for?
Which of the following devices have you ever used? O Personal computer (PC) O Laptop O Tablet O Smartphone O Other, namely:	Which of these devices don't you use anymore? Why not? How did device use change throughout the years? Which device wasn't user friendly according to you, why not?
Which of the aforementioned devices do you still use? O Personal computer (PC) O Laptop O Tablet O Smartphone O Other, namely:	Which of these devices do you use for work-related purposes? Do you use specific devices for specific activities? Which of these devices do you use most and why? Which of these devices are shared? Are any of these devices your own?
Do you now use (some of) these devices for other purposes than before? O Yes O No, the functionalities of all devices have stayed the same	Did you execute this activity on another device before? If so, why? What was the purpose(s) you used [device] for before?
Are there any devices with Internet you would like to buy in the future? O Yes, namely:... O No	Why do you wish to buy this device? Why haven't you bought it yet? What does this device have that others don't? Which 'new activities' can you use this device for, that you can't execute now?
Do you think it is important to always have the newest version of a device? O Yes O No	Why do you think this is important? What do you prioritize instead of having the newest device? How often do you buy a new device?

Appendix 4a. *(continued)*

Questionnaire	Example interview questions
Who makes the decision to buy a new device? O Me O My partner O My partner and me, in consultation	Can you elaborate on the purchasing process? What does this look like? Has the division always been this way? Does it occur this way for any new device?
At which moments during the day do you use the Internet? Try to be as complete as possible, fill out all moments that come to mind.	Can you describe a day from beginning to end: when and what for do you use the Internet? When does this routine deviate? Since when do your days look like this? To what extent are you satisfied with the place of the Internet in your daily routine?
Describe what you would be unable to do without the Internet.	Why wouldn't this be possible anymore? How could you try to do this offline instead? To what extant would you miss this? Did you execute this [specific activity] before the Internet too?
Is the Internet of importance for your spare time? O Yes O No, not at all	Why do you think it is (not) important for your spare time? How much of your spare time do you spend online?
How do you use the Internet in your spare time?	Why do you prefer to do this [specific activity] online instead of online? How would you fill your spare time otherwise? Has this changed throughout the years? If so, how?
Where in the house do you use the Internet?	Are specific places/rooms tied to specific activities? Which ones and why? Where does most Internet use take place? Why? You indicate to have a home office/computer room, why is that?
Are there devices you use outside of the house (with the exception of the smartphone)? If so, which ones? O Yes, the following device(s):........................ O No	What do you use these devices for outside of the home? How did you do this before the Internet was available? Are any of these purposes nonwork-related?
Do you use the Internet publicly, so outside	(combined with previous question)

the home or workplace? O Yes O No, never	
Do you talk with others about your Internet use (sometimes)? O Yes O No, never	What do you talk about mostly? With what purpose do you talk to others? Is this always work-related?
Are there any rules at home concerning Internet use? O Yes O No, not a single one	Can you elaborate a bit on the rules that you apply at home? Have these rules changed over the years? How do you ensure compliance with these rules?
Does the Internet influence interaction between family members? O Yes O No	How is family interaction influenced? What do you think about this influence? Do you take action to diminish this influence? How?
Do you help each other within the family with Internet use (at home)? O Yes O No	Please elaborate a bit on this help provided: whom helps whom? For which kind of activities do you provide help? For which activities do you receive help? Have these mechanisms changed over the years?
Do you get help from outside (non-family members) sometimes? O Yes O No	From whom and what for do you receive help? Did you seek this source yourself? Would this kind of help also be available within the family?
What does the Internet mean to you?	How has this meaning changed over the years? Do you think it is different for others? In what way? How is your current situation (family, work) related to this meaning?
Is it a matter of course for you to use the Internet? O Yes O No	Why is/isn't it? Since when did you feel like it became a matter of course?
Imagine, the Internet doesn't work anymore. Would you have a problem? O Yes O No	Why do you think this would be a problem? What would you miss the most? How would you respond to a malfunction?
Which websites do you visit regularly?	(integrated above)
Which apps do you use regularly?	(integrated above)

Appendix 4b. *Coding scheme domestication*

Domestication phase	Description of domestication element	Code
Appropriation	Getting to know 'the phenomenon Internet'	A1
Appropriation	Purpose first time Internet use	A2
Appropriation	Place first time Internet use	A3
Appropriation	Reason purchase Internet connection	A4
Appropriation	Learned to use the Internet from	A5
Appropriation	Courses or workshops	A6
Appropriation	Current Internet use types	A7
Appropriation	Benefits Internet use (personal meanings)	A8
Appropriation	Disadvantages online (i.o. offline) (personal meanings)	A9
Appropriation	Estimation Internet skills	A10
Appropriation	Person who decides about new device	A11
Appropriation	Purchasing process	A12
Appropriation	Help w/ Internet	A13
Appropriation	Help w/ Internet externally	A14
Appropriation	Things to learn	A15
Appropriation	How to implement help	A16
Incorporation	Online: replacement of or addition to offline	B1
Incorporation	Pattern Internet use	B2
Incorporation	Daily routines not possible w/out internet	B3
Incorporation	Importance Internet spare time	B4
Incorporation	Influence Internet on spare time	B5
Incorporation	Rules family	B6
Incorporation	Monitoring children	B7
Incorporation	Influence interaction family	B8
Incorporation	Internet use upbringing	B9
Incorporation	Problem without Internet	B10
Objectification	Internet use spaces in the home	C1
Objectification	Reasoning Internet use specific spaces in the home	C2
Objectification	Which devices outside of the home	C3
Objectification	Reasoning devices outside of the home	C4
Conversion	Changed functions devices	D1
Conversion	Meaning Internet (use)	D2
Conversion	Matter of course	D3
Conversion	Conversations about Internet (use)	D4

05

Positive outcomes of Internet use: an in-depth analysis in the homes of families with different educational backgrounds

5.1   Introduction

As outlined in chapter 1, the digital divide discourse has started to shift from the first- and second-level divide to the third-level digital divide, in which differences in Internet outcomes are central (Van Deursen & Helsper, 2015; Wei, Teo, Chan, & Tan, 2011). The stressed importance of studying what people yield from performing online activities, stems from the idea that differences in Internet access (first-level), skills and activities (second-level) do not fully address what the Internet actually means in terms of outcomes. As the differences in what people obtain from the Internet are likely to reflect the gaps based on existing social stratifications (e.g., Chen & Wellman, 2004; DiMaggio & Garip, 2012; Helsper, 2012), it is important to unravel how the differences in beneficial outcomes of Internet use manifest. However, third-level digital divide research is scarce. Most outcomes are studied separately and not in relation to the domain of digital inequality.

In the current contribution, we use a theory-driven framework – the corresponding fields model (Helsper, 2012) – to map the tangible positive Internet outcomes obtained by different social groups. The educational level of attainment is taken as a starting point for differentiating between social groups, as it was shown to be an important factor for Internet domestication processes (chapter 4), and appeared to be one of the most prominent determinants from the systematic review (chapter 2), which confirmed previous studies identifying it as an important indicator in all levels of digital divide research (e.g., Blank & Lutz, 2018; Van Deursen & Van Dijk, 2011). Furthermore, in the current contribution we step back from the predominantly quantitative approach of most of the digital inequality research. The guiding research question is as follows:

> *Do families with lower and higher educational backgrounds*
> *differentially benefit from positive outcomes of Internet use and if so,*
> *why?*

We aim to answer this question through interviewing people with different educational levels to unravel if and why positive outcomes of Internet use are unevenly distributed across families from different educational backgrounds.

5.2 Theoretical framework

5.2.1 Corresponding fields model

A quick glance at the literature on Internet use reveals that there are many potential positive outcomes. However, most of the studies addressing Internet outcomes are fragmented as they focus on one individual outcome, for example, an increased number of social ties (Pénard & Poussing, 2010) or political participation (Sylvester & McGlynn, 2010). The concepts under investigation are furthermore addressed by different terminology (Blank & Groselj, 2014) making overarching comparisons difficult. Although studying these concepts is helpful in bridging the third-level digital divide, looking more comprehensively at a broader range of outcomes of Internet use would provide a more comprehensive picture of how existing notions of inequality surface. This however requires a theory-driven approach which is now often lacking in studies around Internet outcomes (Helsper, 2012). To study how people benefit differentially from Internet use, a classification of possible outcomes is needed. In her corresponding field's model, Helsper (2012) argues that social inclusion interacts with the domains of digital inclusion. The idea is that one's offline and online resources influence each other, as the chance to be included online is reflected by the offline resources or circumstances one has. Therefore, the online fields of inclusion have corresponding fields in the offline world. Helsper (2012) refers to these fields as "spheres of influence in everyday life as well as frames of reference for individual action" (p. 404). The conceptualization of fields in the model draws on Bourdieu's (1984) theorization of traditional inequalities in forms of economic, cultural, and social capitals. According to Helsper, the links between social and digital exclusion are strongest between corresponding fields of offline and digital resources, where the primary fields are economic, cultural, social and personal in nature.

- Economic outcomes relate to an individual's income, property, employment and education. Examples include obtaining financial benefits through online investments or profiting from buying or selling products online. Additionally, finding a new job via online platforms or gathering knowledge via online courses, such as MOOCs, belong to the economic field.
- Social outcomes concern ties with an individual or (in)formal and political networks and might, for example, manifest in new friendships built online, having online discussions about political or societal issues or acquiring a new membership to a club or society. Social outcomes may

also be limited to looking up information, for example, about national government services. Additionally, when 'regular interactions' take place online, this is part of the social field, such as exchanging pictures or having daily conversations with family and friends via social media.

- Cultural outcomes have to do with one's identity and belonging, which are based on the shared norms and behaviors as learned through socialization, and indicate one's social status. An example of a cultural outcome is learning more about one's own background through information on cultural heritage or reading information about cultural differences. Activities related to spirituality, religious content or getting to know different ethnicities is part of the cultural field. Finally, learning about the upbringing of children can be considered a cultural outcome.
- Personal outcomes relate to health, leisure or self-actualization, and can, for example, manifest in new (digital) ways of entertainment or spending one's spare time, including those activities related to mental and physical health. Think of enjoying music or TV episodes via online streaming services or tracking one's movement by means of applications. Self-actualization might occur through consulting others about problems or issues that are related to one's interests or finding new offline events to visit.

5.2.2   *Educational background*

Just as for the first- and second-level digital divides, studies have begun to focus on the indicators of Internet outcomes to determine who is on the 'right side' and who is on the 'wrong side' of the third-level digital divide (Blank & Lutz, 2018; Van Deursen & Helsper, 2015). To gain insight into the most important indicators of these divides, a systematic literature review was performed (chapter 2) to identify potential determinants for the four fields of inclusion (Helsper, 2012). Although only a relatively small share of the determinants identified focused on the third-level divide, useful insights were drawn. The majority of determinants identified within the third-level digital divide are limited to socioeconomic and sociodemographic indicators, such as age, gender, employment status and educational level. Furthermore, these determinants were mostly studied in relation to positive outcomes in the (formal) social and economic field, while (indicators of) cultural and personal outcomes were largely overlooked. While these findings are also applicable to negative outcomes of Internet use (Blank & Lutz, 2018), in this chapter the focus will be on the positive outcomes (see chapter

6 for negative outcomes). The possession of or an increase in resources often forms the starting point of inequality research (Van Dijk, 2019).

Van Deursen & Helsper (2015) aimed to bridge the fragmented character of the third-level divide research by surveying the indicators that determine the benefits in each of the four corresponding fields. They found that one's educational level is one of the most important indicators of differences in Internet benefits, as it was shown to be a significant determinant in all four fields, i.e., the highly educated obtain more positive outcomes than the less educated in the economic, personal, social and cultural fields. This is an expected finding taking into account the corresponding nature of the on- and offline fields proposed, as educational level has traditionally been decisive for offline social inequalities (e.g., Eikemo, Huisman, Bambra, & Kunst, 2008; Groot, Van den Brink, & Van Praag, 2007). Additionally, educational level is known to be important in first- and second level divides and, as such, might have a sequential and strengthening effect on gaining online outcomes (Van Deursen, Helsper, Eynon, & Van Dijk, 2017). In addition, Van Deursen & Helsper (2015) found that those who have difficulties with acquiring outcomes in one domain of society, often also have trouble with obtaining outcomes in other domains.

Following the above, we expect that those who are socially disadvantaged by means of their educational level, will have more difficulties with obtaining benefits online as compared to their higher educated counterparts. This presumption also emanates from chapter 4, in which educational level was shown to play an important role in the different phases of domesticating the Internet. Therefore, a link between domestication theory and the outcomes obtained, will likely reveal a decisive role for educational level. Supporting indications can be found in the literature. For example, children from parents that are less educated may not receive adequate support from their parents and siblings, whereas children from highly educated families receive support from parents, homework assistants, siblings, or others who are Internet savvy (Van Deursen & Mossberger, 2018). As another example, previous research has shown that when the informational use of the Internet increases, people with higher levels of education tend to learn much more than less educated people, widening the gap between groups with different socioeconomic backgrounds (Wei & Hindman, 2011). As a result, third-level digital inequalities are likely to reinforce social inequalities (DiMaggio & Garip, 2012; Van Deursen & Helsper, 2015).

Although educational level is known to play an important role in digital inequalities (chapter 1), as underlined by the systematic review (chapter 2) and the analysis of domestication processes (chapter 4), it is unclear *how* education affects benefitting from Internet use and what the actual consequences are for

daily life. While one might argue that those who are more socially advantaged are better equipped and skilled to employ more beneficial Internet activities, there is little empirical evidence that variations in digital skills and types of use essentially result in different outcomes in several areas of society (Blank & Lutz, 2018; Van Deursen & Helsper, 2015). To decrease digital inequalities, it is important to unravel why some groups benefit more from Internet use than others, while most users now have equal opportunities in terms of Internet access (Van Deursen, Van Dijk, & Helsper, 2014).

5.2.3   Sociocontextual influence

Digital inequality research often lacks empirical attention for the context in which Internet use is embedded (e.g., Iordache, Mariën, & Baelden, 2017; Jenkins, 2006; Tsatsou, 2014). This context might uncover plausible explanations for why differences in positive outcomes exist. For example, those who are most in need of support while using the Internet have the least access to high quality support (Eynon & Geniets, 2016), while having help available in one's local support network often leads to higher Internet skills (Ferro, Helbig, & Gil-Garcia, 2011; Van Deursen & Van Dijk, 2011). Additionally, the uptake of new technologies is more common among those who encounter these technologies in their close surroundings (Haddon, 2000). Approaching the Internet user as a social actor in the home context, whose values, dispositions and daily practices determine how the Internet is integrated into his life, might unravel how positive outcomes are constituted. In chapter 4 we aimed to address the social context by applying domestication theory, unraveling how sociocontextual factors influence the way in which people with different educational backgrounds appropriate and use the Internet. The qualitative approach applied (chapter 4) enabled us to identify how the social context contributes to the way the Internet is used in daily life and how this might foster beneficial Internet use for different educational groups. In this chapter we build on chapter 4, by analyzing how the sociocontextual factors influence digital inequalities in terms of positive outcomes. The study will take into account the roles of one's daily life and routines, different family compositions and the influence of one's job. In addition, we will examine if and which outcomes Internet users obtain in a period of eight months.

5.3   Method

For the details of the method used in this study, see chapter 3, in which an overview of the participants (characteristics) is included. The questionnaire and corresponding interview questions are attached in Appendix 5a of this chapter. The corresponding coding scheme can be found in Appendix 5b.

5.4   Results

In this section, the differences between lower educational attainment groups (LEA) and higher educational groups (HEA) are discussed in terms of positive outcomes obtained from Internet use. The positive outcomes and the individual's satisfaction with these outcomes are outlined following the classification of the corresponding fields model by classifying the benefits under the *economic, social, personal* and *cultural* fields. For some outcomes, participants mentioned that they didn't know how to put their satisfaction into words, because achieving those outcomes had become accustomed. We will further elaborate on this trend in the limitations section.

5.4.1   Economic

Economic – Income
Within the economic field, HEA-members obtain more financial benefits than LEA-members in several ways. In general, HEA-members are engaged in new types of investments and often perform actions regarding these investments on the Internet, which either involves new types of investments to which the Internet is inherent, such as buying and selling bitcoins, or traditional forms of offline investments for which the information gathering takes place online. While not all the outcomes of long-term investments by the HEA-participants were available by the end of this study, the most important difference is that LEA-members do not even start the information gathering or investment in the first place. Some HEA-participants appear to be successful in gaining profits from (online) investments.

"I simply invest to eventually take advantage, yes. From the pension I receive from my current job, I could afford a sandwich when I'm old. That is very nice, but I'd like to have a croissant." – HEA, male, 35

"Bitcoin remained stable since our last conversation. So, compared to the last time, it hasn't really improved. However, without those bitcoins, our financial situation would basically be 'worse', indeed. And of course, you're not going to start with bitcoins when your financial situation isn't that good anyways." – HEA, male, 47

Additionally, many HEA-members compare their health insurance and energy providers every year, which saves them money and ensures that they are optimally insured. While some LEA-participants also indicated that they compare their health insurance every year, their motivation is mostly to see if their insurance still covers the health services they expect to need. LEA-members seem to enjoy very few financial benefits when comparing their health insurance online, as they do not transfer to another provider 'if it is just for a few euros'. Other LEA-members do not make the comparison to switch annually because they are afraid that they will not be as well insured as they are with their current health insurance, or because they have had a negative experience with a previous switch. In line with these differences, HEA-participants mostly mentioned that they are very satisfied with the outcomes of their financial activities online, but that improvement is always possible and so 'ten out of ten' will never be reached.

"We started at ONVZ; it is a good insurance company. It might differ a few euros with another company, but one company offers this benefit and another that benefit. If the feeling with one company is right, you don't just switch to another anymore." – LEA, male, 61

"A financial benefit is a nice bonus, but the quality has to be good. In other words, I want to be well insured." – HEA, male, 35

Economic – property
Both educational groups seem to be accustomed to buying and selling online, with the exception of some elderly respondents or villagers who still prefer to buy offline to support local entrepreneurs or to obtain personal advice. Both LEA- and HEA-members go online to gain financial benefits by means of obtaining bargains and offers, or by making price comparisons between offline and online sellers for specific products or services. There are differences, however. HEA-

members mostly shop online because of the convenience and time savings online shopping offers, while for LEA-members, the price is often the leading reason, even if price differences are small. HEA-participants said they only choose to buy second-hand online if the financial benefit largely outweighs the new price, mostly because they refuse, on principle, to buy something for the new price, and the online purchase should not be at the expense of convenience or quality. For some LEA-members, buying second-hand online often is the only way to buy a product, as they can simply not afford new products, for example, furniture. In line with that, only LEA-participants indicated that online bargains ensured that they have enough money left for other things, such as outings with their children. Selling belongings via online marketplaces delivers financial returns to LEA-members, while for HEA-members, the motivation is often to get rid of belongings to clean up their homes or to contribute to a more sustainable world. Many HEA-members, therefore, added that they only choose to sell online when the products are still worth a substantial amount, otherwise they prefer to give things away to, for example, thrift shops, so that they can avoid the inconvenience of online selling.

> *"Now, with the Internet, I do buy things that I wouldn't have purchased otherwise. I'm short of money, as I receive unemployment benefits, so I simply wouldn't be able to."* – LEA, male, 53

> *"Not only financially but also... It's just: why would you pay full price? And on top of that, the sustainability and recycling of products is also something I highly value. They outweigh a possible financial benefit."* – HEA, female, 39

Lastly, mainly LEA-participants indicated that they buy gadgets, must-haves or experiences via online auction websites. While they assume that they are saving some money this way, most of them mention that the products or services bought are things they came across and did not really need. HEA-members are a bit more critical and argue they do not believe they save money online because most things bought are not basic needs. While both groups appear to save by making price comparisons online, for HEA-members, the financial benefits are a nice extra, but the savings should not be at the expense of convenience or quality, while for LEA-members, the financial benefit often seems to be the leading motivation.

"It's more like... searching for a hotel or a coming across a nice offer for a family outing. We've been to Apenheul <Dutch zoo> once, and we only paid 10 euros for a ticket. Those are just nice things that we can cut down. It's not that I'm searching for it, you just encounter them on the Internet." – LEA, female, 50

"We don't really believe that we're saving money. Maybe in comparison to offline purchases, but eventually, you do buy things online that you don't really need." – HEA, female, 39

Economic – employment

Work-related Internet use differs between the two educational groups in the sense that for LEA-members, the Internet is often used for administrative purposes or supportive tasks, while HEA-members said they cannot perform their jobs without the Internet; it is inherent in their work and is also reflected in the work-related benefits they obtain. While several LEA-participants complained about the fact that they had to get used to conducting their tasks via the Internet, HEA-members indicated they use the Internet to continuously improve their work, for example, through integrating new software or finding online solutions, for which their work activities are likely to become more efficient and effective. Approximately a quarter of the HEA-members even have ICT-related jobs, which means that they would not have a job – or at least not this particular job – without the Internet. HEA-members are not only engaged in continuous improvements to satisfy their employers, but they mainly seem to do so to keep themselves entertained and challenged. Finally, while there are entrepreneurs who indicated that they use the Internet to steer the success of their own company in both groups, only in the HEA were these companies covering a full-time job or a legal enterprise, such as an online embroidery shop, Instagram-advertisement, a courier company or a theater organization. LEA-members often engage in 'less official' enterprises online, such as trading car parts or selling handmade embroidery. Many more HEA- than LEA-participants mentioned being very satisfied with what they obtain from the Internet when it concerns work-related outcomes, probably because many LEA-members still struggle with how to implement the Internet into their daily tasks. HEA-members indicated that they view the Internet more as a means to continuously improve their work, and so many of them also state here that there will always be more to obtain from the Internet.

"A new app was just introduced at work for secure e-mails, but it doesn't really work. So, we often handle matters the old-fashioned way, via the telephone. Well, that takes us even more time. [...] Sometimes I have my hands in my hair, it's all going too fast at this age. I noticed that the young people in the department pick up these new things faster." – LEA, female, 53

"Well, I think, the Internet is such an ongoing thing; it's continuously changing. Just when I think I should approach search engines this way, Google has changed the whole mechanism again. That's really a weird and ongoing thing. You're constantly learning. We both work in online marketing, and it never ends; it constantly changes." – HEA, female, 32

The reflective attitude towards their jobs also returns in HEA-members' search for new jobs; although the members of both groups use the Internet to search for new jobs when relevant, HEA-members also continuously update their profiles online for the future, even when they are not explicitly looking for a new job. Via professional networking sites, such as LinkedIn, HEA-members create personal profiles as a means to introduce themselves to potentially relevant connections and to actively make and maintain contacts that might be useful in the future. Only a few LEA-participants also use this type of professional networking site, and mostly not as proactively as HEA-members. While in both groups a handful of members indicated that they were seeking a new job online, only HEA-participants succeeded during the course of the study.

"Sometimes, I look at the website of the employment office, but jobs aren't available. Either you're too old or too expensive. Mostly, you don't even receive a response when applying online, for example." – LEA, male, 53

"Well, it is also a bit unconscious. Maintaining LinkedIn, for example, updating your information every now and then. So, if anyone ever comes across my profile, it looks good and the info is up to date." – HEA, male, 33

Following work-related courses is something members of both groups do, but the difference is that HEA-members often propose certain courses or workshops to their management themselves, while courses are imposed on LEA-members. This

difference seems most beneficial for HEA-members, as they actively work on their personal development. HEA-participants often mentioned that they find it difficult to distinguish between work-related and personal development because it overlaps so much.

> *"I think I've got approximately 30 courses that are 'pending', courses that I should finish for work, but I just don't feel like doing it. There's enough to learn, but I just don't feel like it."* – LEA, female, 37

> *"Yes, at work, we were confronted with new developments. I thought it would be handy to know more of these. So, I looked up where I could follow a course on these developments."* – HEA, male, 49

5.4.2   *Personal*

Personal – self-actualization
The participants also mentioned learning online on a more personal level. Starting with 'the Internet' as an information source, HEA-participants indicated that the Internet aids them in continuously learning, which might range from searching for a small fact to following a full online course. When LEA-participants were asked if they learn via the Internet, they often answered by saying, 'not specifically, or not that I know of', implying a difference in the proactiveness of online learning. Online learning also takes place via courses or workshops found and followed online, which again is more often proactively initiated by HEA-members than by LEA-members. LEA-members do learn online, but very occasionally and mostly when there is an external incentive, such as in preparation for a newly acquired job. HEA-members, in contrast, often proactively search for a specific course or workshop because they want to work on their personal development. Oftentimes, these courses are targeted at acquiring new skills or learning something completely new. Some examples of this, as indicated by HEA-members, include starting a law study while being account manager or examining new ways of performing mindfulness. Lastly, for a few HEA-members, the Internet serves as a platform for self-expression, for example, through maintaining a blog-website. While approximately half of the HEA-participants mentioned that they are very satisfied with what they yield from the Internet concerning personal development, some of them also indicated that there are always others who will obtain more from it. Additionally, only LEA-members mentioned here that they do not obtain personal development outcomes online, but that they are satisfied with the way it is.

"Well, work-related, we might have learned new things via the Internet recently, but in the private sphere, we actually didn't." – LEA, female, 53

"I was searching for a course about child coaching, and the offerings were really broad. However, with my job and the business here at home, I didn't feel like following a course that demands going to school in the evening or the weekend. So, I put all those courses in a Word document, and then, I started selecting on the ones I could entirely follow online. Then, I looked at the price, but more so at the certification of the courses, those kinds of things. In this way, I found one that I could follow online, except for the exam. That's okay. So, in the first instance, this is personal development, but later on, who knows." – HEA, female, 45

According to most LEA-members, the Internet helps to keep them informed about news items more often during the day and in receiving news quicker than before, while at the same time, allowing them to be selective in the type of news items that are relevant for them. Although most HEA-members seem to agree on the benefits of being selective and flexible in consuming the news currently, they added statements about the newsworthiness and veracity of news items, declaring that the Internet allows them the possibility to consult several sources to verify a news item before accepting it as the truth. Some also pinpointed this specifically in light of fake news. A handful of HEA-participants also indicated that they stopped following a specific news source during the course of this study because they experienced an overload of (false) information that did not help them in becoming optimally informed about the news. A few HEA-participants indicated that they are worried about how the news provision of today influences people who take a less critical attitude towards the news, which is also reflected in the satisfaction with outcomes, as being highly satisfied with their news provision is indicated by the members of both groups, but only HEA-members state that they are still searching for ways to obtain the most out of this online service.

"I do think I'm better informed about the news because of the Internet. I used to watch the morning news on TV, but they always only discussed a few items. When I'm browsing the websites of newspapers, such as De Telegraaf, they also seem to devote attention to smaller items, of which you might think: is this really newsworthy?

However, yeah, in this way, you notice that online, you'll see a lot more of what happens in the world than on television." – LEA, female, 38

"I stopped following certain people on Twitter who didn't tell the truth; then, you're off for me. On the other hand, I also found some journalists who do present the news in a neutral, objective way and who dare to highlight it from different angles. There're always two sides to a story. If you're continuously only reading one side of the news, you'll eventually start to believe that it is the truth." – HEA, female, 39

Personal – health

With regard to health-related activities online, both groups seek medical or health information online. However, some LEA-participants indicated that they stopped doing so because the potential diseases and disorders they discover when Googling symptoms scare them. HEA-members seem to be better skilled in filtering this information, as they often indicated that the right sources should be consulted for medical information to be useful. For the ones searching for medical information, in both groups, the participants use the information found for reassurance. Only HEA-members appear to use the information found online to arrive well prepared at a visit to the general practitioner or even to prevent such a visit. After having visited a doctor, HEA-members use the Internet to answer questions, such as the following: what does the disease the doctor mentioned actually mean? Can I use this medicine in any case? In the end, HEA-members more often seem to reach the goal of obtaining reassurance through online medical information.

"I do Google symptoms that concern myself. I know it's wrong to do so, but I often think: 'I've got these symptoms, what do they mean?' Often, you end up with something like a brain tumor or cancer, and the prognosis is you'll die. However, I still keep doing so, yes. That curiosity is something that's just inside human beings." – LEA, female, 38

"It is by now perfectly clear to me that in the case of, for example, an ear infection, I have to search for treatment protocols of ENT-specialists. What are the options and what should I take into account? With that information, I go to a general practitioner, but

the GP has no idea. He really has no idea. He comes up with really
general antibiotics, while ENT-specialists don't use those anyway and
agree on completely different treatments. In such cases, it helps me to
say: 'I don't need those antibiotics, and for the intensive treatment,
I'll wait a few more days'. [...] It is just a matter of consulting the
right sources." – HEA, female, 39

Both LEA- and HEA-members use the Internet as a facilitator for working on their health. Using health apps to monitor one's daily exercise or calorie intake is something the participants of both groups said that they do with the aim to become healthier. However, it seems that these health-related activities are only used over a limited time span and that the desired results do not remain for many of the participants. Only the few HEA-members that use the Internet and its applications as a new lifestyle seem to succeed in reaching their long-term goals.

"Yes, I sought information about improving my condition. However,
we also discussed this the last time. I keep on doing it, did so
countless times in the last 6 years, but I never persevere." – LEA,
female, 37

"I was diagnosed with PDS, for example, and I just sought a really
extensive online book with a lot of new theory. If I don't eat the right
things, then I suffer from it in the long run. It goes well for a very
long time, but at a certain point, I have to face the consequences. My
intestines really have to recover, and then, tiredness comes with it.
My resistance was very low at a certain point. So, we adopted a
different lifestyle. So, yes, I did make better decisions about my
health." – HEA, female, 29

Personal – leisure (entertainment)
Participants of both groups found new forms of entertainment since the Internet entered their lives and, for most of them, it is now their main source of entertainment. Both groups mentioned their reasons for preferring online entertainment, such as selectivity (e.g., which TV programs and series), flexibility (when and where to watch) and relaxation. Forms of online entertainment do not differ much between the two groups, although LEA-members, overall, seem to play more games, and HEA-members use online music streaming services more often. A surprising trend that was mentioned by many HEA-participants is the desire to reduce the time spent on online entertainment. Over the course of this

longitudinal study, many HEA-members indicated to have quit one or more means of online entertainment because spending their spare time offline yields more mental rest and adds value to relationships. While a few LEA-participants also mentioned to sometimes desire a better balance between on- and offline entertainment, they do not act on it. When participants were asked if online entertainment has actually made them happier, about half of the LEA-members responded approvingly. A few HEA-participants also agreed with the statement, but independent of their (dis)agreeing answer, most HEA- and some LEA-members added a nuance to their answer, as follows: 'happy' is too strong, but most of them agreed that the Internet has brought them more types of entertainment and that some of those actually give them really happy moments, such as when listening to good (selective) music. Some LEA-members whom stated that online entertainment has indeed made them happier are the ones who are home-bound or lonely, stating that the Internet gives them a way to make it through the day.

> *"The computer has made it that I can now enjoy myself, here at home, on my own. Without that thing, I would really be lonely. Yes, I really am happier."* – LEA, female, 83

> *"It feels more like filling time than really... You know, last week, we went to a music concert, and then, your heart really gets touched. That's not something that will soon happen online. For me, the Internet will never fully replace the offline world and entertainment."* – HEA, female, 47

5.4.3   Social

Social – informal

In terms of maintaining social contacts or relationships using online channels, nearly all participants stated that the Internet facilitates fast and more frequent moments of contact with friends and family. In both groups, this sometimes leads to the improvement of existing relationships, although this seems more common among LEA-members. Most HEA-participants did indicate, however, that maintaining social contacts online leads to more involvement with the lives of family and friends because they are kept more up-to-date and it facilitates offline appointments. Most of them also said that online contact will never outweigh offline contact in terms of added value for relationships and that the Internet mainly serves for 'quick and short' contact moments. Why maintaining

relationships online leads to better relationships for many LEA-participants was often hard to put into words for them. Making new contacts online, in terms of friendships, is something that was only mentioned by LEA-members, while both groups use the Internet to find functional contacts, such as someone who can provide advice about rearing children or ICT-related problems. Using social media to maintain social contacts is something LEA-members continue to do, while a considerable number of HEA-members stated that they have 'cleaned up' their accounts or friends list on social media, and some have even deleted their accounts. These HEA-participants not only indicated that certain social media, such as Facebook, have surpassed their original purpose of maintaining social contacts, but also that the content found on these platforms increasingly annoys them. While a few LEA-members are also bothered by the changing content of social media, they do not go as far as to delete or clean up their profiles.

> *"For example, in our church, there are new people who I lost out of sight years ago. And now it's easier to get into contact again via Facebook or Instagram. Sometimes, it leads to a visit or, recently, even a friendship."* – LEA, female, 49

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> *"I don't think it adds much. I just call people, really old-fashioned. [...] The way I established it right now, I'm really content with it. So, I don't have Facebook, I make minimum use of WhatsApp and I don't use it for seeking contact. I just call. That's my way to maintain contacts."* – HEA, male, 39

> *"We're very tired lately because we're going through a busy period [...], so we don't feel like doing anything and we end up scrolling through our phones, and I watch Grey's Anatomy, for example. Yes, that's an issue lately. [...] However, luckily, we were aware of it. And we actually didn't make use of a babysitter much. So, meanwhile, we have had some 'job interviews', and now, we've got a babysitter. I arranged it online by the way. So, we were aware that we needed a babysitter so that we could spend more time offline again, together."* – HEA, female, 40

'Being social' by making a contribution to society is something that LEA-members expressed a desire for more than HEA-members. While HEA-members appear to be more actively seeking information to understand societal problems and to form an opinion about these questions, such as about political divisions, LEA-

members seem more committed to contributing to society by doing something for others, and the Internet often facilitates this. For example, many LEA-members volunteer for their (children's) sports club by maintaining the website or by organizing and promoting events online. The only exception to this difference is signing petitions, which is something members of both groups do. Oftentimes, HEA-participants added that they are content with the way it is because they are not interested in contributing to society in this way, which corresponds with the offline tendency for HEA-members to be less social in this way and therefore more egocentric than LEA-members (Huisman, 2018). Additionally, the trend is reflected in the satisfaction rates that were given concerning societal involvement because, compared to other outcomes, many of the participants indicated that they do not get much out of using the Internet in this way, but that they are happy with that result. The majority of these participants belongs to the HEA.

> *"Maintaining the website for the soccer club, of course I get something out of it myself, but actually I'm doing it for others. I'm just content about it actually. I think that we make good use of it, we reach people. Yes, it could be improved, and we could make it all fancier, but I think it is going well, and that is what we hear back from others."* – LEA, female, 44

> *"I don't do anything with social involvement or contributing something to society. And that's alright with me, let's keep it that way."* – HEA, male, 39

Social – formal
During the second round of interviews, municipal elections had just taken place in the Netherlands. Nearly all participants of both groups indicated that they had used the Internet to prepare for the elections because they did not know who to vote for or felt ill prepared without using an online voting support system. Only a few older or religious participants, who are conservative in their voting, did not use the Internet because they do not need orientation. When using voting support systems, LEA-participants indicated that they mostly just follow the suggestion given, while HEA-members demand more background information regarding certain political statements to check if they actually agree with the advice on the basis of the statements the political parties make.

"Yes, I do know the area I'm voting for, but I'm not going to delve into all party programs. I just search for a few voting guides. [...] It was a confirmation of what I thought beforehand." – LEA, female, 53

"Yes, I did need a voting guide [...]. However, what I find difficult about it is that I search for more voting guides and they all give another result. So, to what extent should I then figure out where those differences come from and which statements do I think are important... because you should tick which statements are important according to you. So, yes, it took me some time. However, you can compare, per statement, what different parties think of those statements. In this way, I finally choose my top 3 and then which party to vote for." – HEA, male, 47

HEA-members in general seem to benefit more from online public services, as they appreciate how they can access and use these services online instead of having to go to an office; therefore, they can save time, which allows them more control. Many LEA-participants indicated that they often need help to find what they are looking for on online governmental services because the website is not easy to navigate.

More LEA-members appear to coincidentally discover online that they are entitled to a particular benefit, subsidy or tax advantage, tax benefits that HEA-members do not discover because these are only intended for the poor that are living on benefits. On the other hand, some HEA-participants did mention that they enjoy tax benefits that are accessible for everyone but are not generally known, such as reclaiming donations with their tax returns.

"It appeared that there were extras available, which I never addressed. I found out when I was searching for something else. Well, really nice!" – LEA, female, 42

"About that financial benefit; it is the refund of the donations that you've made in the past year. For the tax declaration. I read it somewhere and thought, 'I have to figure that out for our situation'. And it appeared that, indeed, we could get it back tax free. It's not much, but it is a financial benefit in the end." – HEA, male, 33

Compared to the positive outcomes discussed in the prior domains, cultural outcomes appear to be less common. While some participants of both LEA and HEA indicated that they have learned things about or overthought differences between men and women, mostly they mentioned this as a consequence of the information they came across online by chance, especially in the time that the global MeToo-discussion emerged. Therefore, most of the participants classified this under the understanding of complex societal problems, thus belonging to the personal field, rather than the cultural field.

Information about parenting or upbringing is sometimes sought, mostly by women, in both groups. Mostly, this provides them with tips and tricks for problems or questions they encounter, such as sleep issues of babies or breastfeeding toddlers. Convenience and time savings were again mentioned as the positive outcomes here, as some of the participants mentioned that 'when the problem would get severe or serious', they would still turn to their consultation office.

A few members of both groups indicated they have traced their family history or background online and, in most cases, this leads to contentment or excitement about the information found, but in neither of the cases was the information sought deemed essential.

Finally, some HEA-participants mentioned that the Internet helps them in their cultural development by providing them with information about offline events, such as theater performances. These participants explained that, according to them, going online is not the way to work on cultural development, but the Internet might inspire them to participate in cultural activities offline. Most LEA-members stated that they are not interested in cultural development anyway, either online or offline.

> *"No, cultural development doesn't interest me at all."* – LEA, male, 49

> *"Concerning cultural development, you have to be aware that you don't reside in what you already know. That does happen quite fast when you just seek for it online. Last week, I just picked something from the programming in the local theater. It doesn't always have to be a great success, but at least you're trying something else and you can form an opinion about it."* – HEA, male, 49

5.5   Discussion

5.5.1   Main findings

The research on digital inequality over the last decade has typically used a quantitative approach, in which indicators of mostly having an Internet connection (first-level digital divide) and skills and uses (second-level digital divide) are considered (chapter 2). Recently, theory-driven approaches for studying the tangible outcomes of Internet use (third-level digital divide) have appeared (e.g., Blank & Lutz, 2018; Helsper, Van Deursen, & Eynon, 2015). The current contribution adds to this development by applying a qualitative method to study the third-level digital divide. The study sought to not only identify, but also to explain the differences in Internet outcomes among members of less (LEA) and highly (HEA) educated groups by highlighting typical differences in looking for positive outcomes of Internet use. In general, the results show that while both groups obtain personal, cultural, social and economic outcomes, HEA-members gain the broadest range of benefits. Several important differences emerged that are worth investigating in detail in larger samples and with quantitative research.

HEA-members are likely to be more successful in obtaining benefits in the personal, cultural and economic domains. In the economic field, on top of the financial benefits emanating from online price comparisons both groups enjoy, HEA-members reap financial advantages from investments that LEA-members do not consider. The likelihood of online banking, including making investments, increases with the educational level (Jimenez & Diaz, 2019). Many HEA-members have a general interest in finance, of which the knowledge about and the willingness to invest seem to be a logical consequence, while LEA-members often appear to lack this interest and the necessary knowledge, especially in regard to new, online methods, such as bitcoins, which corresponds with the offline disparities in financial literacy that can be explained by educational differences (Lusardi & Mitchell, 2007; Skagerlund, Lind, Strömbäck, Tinghög, & Västfjäll, 2018). Annual comparisons of energy suppliers and health insurances also yield relatively many economic advantages for HEA-members, while LEA-members mostly do not want to take the risk of underinsurance by switching providers. As differences in educational level are traditionally associated with income inequality (Gregorio & Lee, 2002), offline disparities in economic resources are consequently likely to grow. In the personal field, LEA-members are less successful than HEA-members regarding online (work-related) learning and health improvement, the latter possibly caused by LEA's relatively low level of

eHealth literacy (Neter & Brainin, 2012). However, in terms of entertainment, HEA-members increasingly wish to 'obtain less from the Internet', while many LEA-members regard the Internet as (one of) their primary outlet for entertainment. While both groups do not seem to obtain substantial online benefits in the cultural field, HEA-members do use the Internet to steer their offline cultural development. This tendency mirrors offline differences, as cultural participation increases with the level of education (Vander Stichele & Laermans, 2006) and so the offline disparities in cultural participation are likely to be reinforced (Mihelj, Leguina, & Downey, 2019). Differences in benefits in the social domain are less prominent. Although both groups use similar Internet applications, LEA-members yield more in this field than HEA-members do, as HEA-members (over time) emphasize that social media do not contribute to maintaining relationships and so they yield less in this field than LEA-members do. Throughout all fields, saving time and obtaining convenience appear to be a starting point for HEA-members' choice to perform a certain activity online and reap the corresponding benefits, while LEA-members take on a less reflective approach and do not consider their choice for the Internet as consciously: they just resort to the Internet as a habit or when it's the most obvious means to perform a task or activity.

While it seems that LEA-members regard the Internet as an easy way to maintain and acquire relationships and enjoy the endless means of entertainment the Internet has to offer, HEA-members often like to disconnect from the Internet in regard to online entertainment or maintaining relationships. This does not seem to be a matter of skills or access, but of HEA-individuals' urge to take the course of their (daily) life into their own hands and accordingly manage (the influence of) their Internet use, while LEA-members prefer to let things take their course. However, HEA-members only appear to disconnect from the Internet when they can afford to because they have access to relatively many offline resources. For example, they are able to put less effort into online social connections because they typically have larger offline social networks than LEA-members do (Groot et al., 2007). Additionally, HEA-members are traditionally more engaged in cultural participation offline, so when both groups refrain from cultural participation online, the offline disparities continue to exist. As another example, a family who wanted to disconnect more from the Internet because of their desire to invest in offline quality-time could afford to find a nanny (via the Internet) so that they could spend more time offline. The desire and possibility to disconnect from the Internet, thus, seem largely guided by the family's offline resources, which, therefore, likely has a stake in the differential online outcomes that HEA- and LEA-members obtain.

The overall results of this contribution show that differences in outcome experiences and interpretations are strongly linked to the individual's approach; LEA-members seemingly do not feel the need to lead in exploring the Internet in terms of its opportunities, while HEA-members have a proactive and reflective approach in seeking positive outcomes. HEA-members often explore and adopt an application or ICT-development early when they see the added value for their own lives, therewith taking the anticipated outcomes into their own hands, while LEA-members do so when it is accustomed or even obligatory, such as with governmental services. LEA-members generally indicate that they are satisfied with what they yield from the Internet, while HEA-members are often less content about the benefits received, as they state that there is always more to obtain; therefore, they continue to search for beneficial ways to use the Internet. In this process of making tradeoffs, HEA-members often consider the benefits that they *want* to obtain, in which their offline resources (lifestyle chances) play a crucial role. These different approaches that both groups take towards outcomes – either actively seeking or more passively awaiting positive outcomes – correspond with the way both groups go through the domestication process (chapter 4). In the previous chapter we suggested that the habitus (Bourdieu, 1990; Robinson, 2009) influences how people domesticate the Internet, which determines how the Internet is valued, appropriated and integrated into daily life. We anticipated that 'differences in the initial approaches towards the Internet are reinforced in subsequent domestication phases', differences that are likely to contribute to important phases of Internet appropriation where inequality presents itself, including the tangible outcomes obtained from Internet use. The way that individuals benefit from outcomes of Internet use, thus seems to be a product of the domestication process that varies by (educational) background.

In addition to the fact that LEA-members generally own less offline resources as compared to HEA-members, online outcomes do not stand alone; the outcomes obtained, as stemming from forms of capital (Bourdieu, 1984), can be converted and beneficially reinvested, for example, when money (economic capital) is used to pay for education (cultural capital), which might deliver friendships (social capital) or a pay raise (economic capital) (Ignatow & Robinson, 2017). Such situations were also extant in this study. For example, a HEA-member who decided to start an online Masters in law studies in addition to his full-time job as account manager, met two offline requirements (resources) to start this study, i.e., a higher educational level and the money to pay for the tuition fee. By following this study, the participant indicated to have gained useful contacts (social capital), personal development (personal) and knowledge in a new

discipline (economic capital). In the end, these resources might be invested to, for example, acquire a new job delivering a higher salary or to solve legal issues in the private sphere. Therefore, even if HEA-members obtain relatively more outcomes in, for example, the economic field only, offline inequalities are likely to be exacerbated.

5.5.2   Limitations and future research

In this study, participants were asked to indicate which of the outcomes presented in a questionnaire applied to them prior to the interviews. Moreover, when families had two family heads (the large majority), both participated in the interview at the same time. One might argue that participants were guided by the questions asked in the questionnaire or by answers given by other family members. However, this 'guidance' most likely resulted in a more complete overview of answers, as participants had already considered the positive outcomes they had experienced before the start of the interview. As a result, a more comprehensive list of outcomes has been established. Follow-up studies might use the list with potential outcomes as a point of departure.

This study's aim was to explore a broad range of positive outcomes. For some of the participants in this study, it might be that because the Internet is now fully integrated into participants' lives, it is difficult for them to track down all the outcomes they obtain from Internet use, as some have become familiar and are no longer noticed. Although we tried to control for this tendency by letting participants fill out surveys beforehand and giving them the chance to add to the semi-structured interviews afterwards, another way to do so might be by verifying the outcomes by means of quantitative survey studies.

Besides identifying (additional) positive outcomes that participants experience, with the qualitative method applied we also aimed to make an inventory of the participant's satisfaction with these outcomes. However, for some outcomes discussed, participants indicated that they found it hard to put into words how satisfied they felt, even though they were given the opportunity to elucidate their value judgment with an oral explanation. This was mostly because, for the participants, using the Internet was just another way of arriving at the positive outcomes, which has even become habitual. This applied to, for example, online governmental services and online banking. Therefore, it proved difficult discussing these value judgments for some of the outcomes. Future research might benefit from developing new ways of measuring individuals' satisfaction with outcomes obtained, as it serves as an important indicator of the actual meaning and impact of these outcomes on the Internet users' daily lives,

which could further deepen third-level digital divide research (Van Deursen & Helsper, 2018).

Appendix 5a. *Questionnaire and interview questions round 2 & 4: positive outcomes*

Please indicate which of the following outcomes are (still) applicable to you with regard to <u>*the past year:*</u>

- o I saved money by buying products online
- o I sold products that I wouldn't have sold otherwise
- o My knowledge increased through the Internet (e.g., by seeking information or talking to others)
- o I obtained a diploma/certificate that I wouldn't have had without the Internet
- o Online information influenced the way I work
- o I found a job via the Internet which I wouldn't have found otherwise
- o My financial situation has improved through online information
- o I closed on an insurance online that I wouldn't have found otherwise
- o I found people with the same age and interests online
- o Online info made me think about differences between men and women
- o I learned new things about my background
- o I feel more connected with my religion through online information and people I met online
- o My religious or spiritual belief has changed through online information and the people I met online
- o Relationships with family or friends were improved through the Internet
- o I'm having more frequent contact with good friends through the Internet
- o I obtained more friends through the Internet
- o People I met online are more interesting than people I met offline
- o I became member of a (hobby) association that I wouldn't have found otherwise
- o I became member or donator of a societal organization that I wouldn't have found otherwise
- o I discovered that I'm entitled to a certain subsidy or tax benefit that I wouldn't have found otherwise
- o I have/had better contact with a political party or city councilor
- o I have more confidence in my lifestyle through online information
- o Online entertainment has made me happier
- o I became fitter through using online information programs or apps
- o I made better decisions about my health through following online information or advice

o I visited events that I wouldn't have considered otherwise
o I can form an opinion about complex themes and societal problems that I wouldn't have understood (so well) otherwise

Please indicate which of the following life events are (still) applicable to you with regard to <u>the past year:</u>

o Sold a house
o Bought a house
o Moved
o Migrated
o Moved in together
o Got married
o Divorced
o Got pregnant
o Started education
o Finished education
o Quit working/resigned
o Got fired
o Retired
o Found a new job
o Incurred a debt
o Received heritage
o Physical or mental illness of a family member
o Other, namely:

Open ended questions positive outcomes:

I see you experienced [positive outcome].

1. Can you elaborate a bit on how you achieved [positive outcome]?
2. What does [positive outcome] mean to you?
3. How would you substitute [positive outcome]?
4. Would it be possible to acquire [positive outcome] offline too? If so, why do you choose do reach [positive outcome] online?
5. How did you acquire [positive outcome] before the Internet was available?
6. Do you have an active role in reaching [positive outcome]?
7. Did you ever intend but fail to reach [positive outcome]?
8. Do you think you achieve [positive outcome] more (often) than others?
9. How satisfied are you with [positive outcome]?

Appendix 5b. *Coding scheme positive outcomes*

Field	Description of outcome	Code
Economic	Financial benefit – saving through price comparisons/purchase	CA1
Economic	Financial benefit – sale online	CA2
Economic	Financial benefit – other	CA3
Economic	Financial benefit – secondhand purchase	CA4
Economic	Financial benefit – awareness spendings	CA6
Economic	Financial benefit – investments	CA8
Economic	Financial benefit – better insured	CA5
Economic	Work – work became more enjoyable/efficient/easier	CE1
Economic	Work – found/started new training/education	CE10
Economic	Work – found new job	CE2
Economic	Work – success own company	CE3
Economic	Work – continuous improvement/renewal	CE4
Economic	Work – profile oneself for the future	CE5
Economic	Work – facilitates search for new job	CE6
Economic	Work – obtaining diploma course/education	CE8
Economic	Work – expanding professional network	CE9
Social	Social – more (frequency) contact with family/friends	CC1
Social	Social – improvement existing relationships	CC2
Social	Social – getting back to old friends	CC3
Social	Social – meeting new acquaintances/friends	CC4
Social	Social – increased involvement	CC5
Social	Social – growing understanding	CC6
Social	Social – easier to share content	CC7
Social	Social – finding (back) the right people (functionally)	CC8
Social	Social – Internet facilitates search for romantic relationship	CC9
Personal/social	Personal – meaning something for someone	CF7
Personal/social	Personal – contribution to society	CF9
Personal	Personal – inspire others	CD6
Personal	Personal – get appreciation	CD7
Personal	Personal – increased self-confidence	CF10
Personal	Personal – better informed (news)	CF11
Personal	Personal – expressing opinions	CF12
Personal	Personal – getting to know more about personal background	CF13
Personal	Personal – less lonely	CF14
Personal	Personal – self expression/pride	CF15
Personal	Personal – enabled to take decisions independently	CF16
Personal	Personal – personal development (e.g., spiritual, awareness, language skills)	CF2
Personal	Personal – more confidence in lifestyle	CF3

Personal	Knowledge gain – coming across information that one wouldn't have found otherwise	CB2
Personal	Knowledge gain – school	CB3
Personal	Knowledge gain – more perspectives	CB4
Personal	Knowledge gain – sharing knowledge	CB5
Personal	Knowledge gain – requesting help	CB6
Personal	Knowledge gain – problem solving abilities (tutorials etc.)	CB7
Personal	Knowledge gain – all info findable	CB1
Personal	Health – improved fitness	CG2
Personal	Health – goals reached (Internet stimulates)	CG3
Personal	Health – reassurance/confirmation	CG4
Personal	Health – child more independent	CG5
Personal	Health – seeking medical information	CG7
Personal	Health – better decisions concerning health	CG1
Personal	Entertainment – new/more sources of entertainment	CD1
Personal	Entertainment – getting through the day	CD10
Personal	Entertainment – member of a new club/hobby	CD11
Personal	Entertainment – online entertainment made me happier	CD2
Personal	Entertainment – online entertainment brought me more pleasure	CD3
Personal	Entertainment – relaxation	CD4
Personal	Entertainment – inspiration for existing hobby (e.g., recipes for cooking, new music)	CD5
Cultural	Personal – spiritual/religious belief has changed	CF4
Cultural	Personal – better understanding of societal problems	CF5
Cultural	Personal – better opinion formation (societal)	CF6
Cultural	Personal – better opinion elections	CF6b
Cultural	Personal – involvement/awareness religion	CF8
Cultural	Sustainability (value)	CD8
General	Time savings	CH1
General	Storage content	CH10
General	Being more independent	CH11
General	Convenience	CH2
General	Selectivity (what)	CH3
General	Flexibility (where, when)	CH4
General	Wide reach	CH5
General	More certainty	CH6
General	No advertisements	CH7
General	Having proof	CH9
General	Products/services (offer)	CI1
General	Visit more events (offer)	CI2
General	More demand (offer)	CI3
General	Specific – bought a house	CJ1
General	Specific – sold a house	CJ2

06

Negative outcomes of Internet use: an in-depth analysis in the homes of families with different educational backgrounds

6.1   Introduction

As discussed in previous chapters, recently more attention to the third-level digital divide has emerged, focusing on differences in outcomes that individuals obtain from Internet use[1] (Van Deursen & Helsper, 2015; Wei, Teo, Chan, & Tan, 2011). In chapter 5, we aimed to expand the third-level digital divide by mapping and contextualizing positive outcomes of Internet use. While the approach taken in the third-level digital divide is often positive, focusing on the beneficial outcomes of going online, Internet use can also deliver negative outcomes to its users. Just as beneficial outcomes could mitigate the digital divide, negative outcomes could deepen it – they often result in reduction of one's resources (Van Dijk, 2019). Therefore, negative outcomes are also a fundamental element of what the Internet actually means to its users. However, few studies concerning the third-level digital divide focused on negative aspects (e.g., Blank & Lutz, 2018; Gui & Büchi, 2019). In the current contribution, negative outcomes of Internet use are investigated, using a theory-driven overview. From this overview, we will study which social groups are most prone to being disadvantaged. Again, we are especially interested in the level of educational attainment. We will study both the *confrontation with* negative outcomes of Internet use, in terms of the *type of outcomes* Internet users experience, and the way that people *cope with* the outcomes they face. Again, we step back from the quantitative approach that dominates digital inequality research and provide a qualitative in-depth analysis in which the social context, specifically, the daily life in the home, is taken into account. To provide in-depth explanations for differences in negative outcomes, interviews were conducted with participants from different educational levels. This chapter aims to answer the following research question:

> *Do families with lower and higher educational backgrounds differentially suffer from negative outcomes of Internet use and if so, why?*

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[1] For a comprehensive description of the digital divide levels, see chapter 1.

6.2   Theoretical framework

6.2.1   Corresponding online and offline fields

While disadvantages or negative outcomes associated with Internet use are widely covered in the literature, a comprehensive theory-driven overview seems to be missing, as most outcomes are discussed in specific studies not linked to the digital divide. To create an inventory of potential negative outcomes that Internet users might experience, we again use the corresponding fields model of Helsper (2012). Helsper sets forth that possession of the right skills and engagement with certain types of Internet activities does not automatically lead to achieving positive outcomes. As explained in chapter 5, the model conceptualizes links between social and digital exclusion (e.g., exclusion in online domains is a product of one's offline circumstances and, in turn, the former impacts the latter). Just as the positive outcomes outlined in the previous chapter, negative outcomes can be obtained in four fields that consist of a number of resources. The fields at stake are the economic, social, cultural and personal field. We will briefly elaborate these fields anew, before turning to examples of negative outcomes within the fields (see section 6.2.2 – 6.2.5 below).

Resources in the economic field are related to capital and wealth and refer to *income, employment* or *education.* Resources in the cultural field concern *belonging* and *identification* with certain sociocultural groups, which is based on the shared norms and behaviors (as learned through socialization) that indicate one's social status (Helsper, 2012). Cultural outcomes accordingly refer to behavioral consequences of cultural identity resources, such as gender and ethnicity, that correspond with beliefs of information and activities as cultivated in the offline world (Maccoby, 2007). Resources in the social field regard ties or connections with individuals or networks that provide an individual with support and knowledge of others (Portes, 1998). Those networks can be *personal, formal* or *political* (Helsper, 2012). The more ties one has and the stronger those ties are, the higher the inclusion in a domain (Helsper, 2012). Civic and political participation are included here as well. Obtaining benefits in the personal domain depends on one's ability to undertake new opportunities and relate to offline individual characteristics with an emphasis on personality, aptitudes, and well-being (Helsper, 2012). Outcomes in the personal field concern one's *health, leisure* or *self-actualization.*

Recent studies based on the corresponding fields model revealed that those who are less fortunate offline also obtain fewer benefits while being online (Van Deursen, Helsper, Eynon, & Van Dijk, 2017). For example, those with fewer offline

social resources, including a lower number of informal ties, obtain fewer social outcomes online than those who have a higher number of ties. While Helsper (2012) and other follow-up studies (van Deursen & Helsper 2015; Helsper, van Deursen, & Eynon 2015) have focused on positive outcomes of Internet use, it is likely that similar findings apply to the distribution of negative outcomes. These can be classified in a similar manner following the four fields. In the following sections, several outcomes will be mentioned that can be found in theory.

6.2.2   Negative economic outcomes of Internet use

Disadvantages of Internet use that can be classified in the economic field are related to one's work or academic life and could be linked to *education* and *employment* in the corresponding fields model. An example is the negative effect of spending too much time online. This can result in neglecting work and school duties, often associated with (excessive) Internet use (Spada, 2014). Furthermore, for those who are highly dedicated to their work, work pressure might well increase because of the Internet, even when it concerns average Internet users (Heijstra & Rafnsdottir, 2010).

   Outcomes that relate to *property* resources, are direct financial consequences that emanate from Internet use. These outcomes are often associated with specific Internet activities, such as online shopping or gambling. Getting into debt is one of the most extreme and detrimental consequences, but average users could be at stake for milder versions of financial disadvantages. For example, when avid online shoppers spend too much money or perform 'unplanned buying' that doesn't fit the monthly budget, it could lead to forced foregoing of other pastime activities, including social activities with family or friends (Niu & Chang, 2014).

   Finally, negative outcomes related to *income* resources concern a decline of one's financial situation. This might, for example, apply when someone is disadvantaged by insurance arranged online or by financial fraud.

6.2.3   Negative cultural outcomes of Internet use

Many of the cultural outcomes mentioned in the literature are beyond one's control and are not directly linked to an individual's specific Internet activities. Mostly, these outcomes relate to an individual's norms and behavior and correspond with the *identity* and *belonging* categories as part of the cultural field. Several of these consequences are labeled cybercrime (Gordon & Ford, 2006), among which hacking and discrimination. Other activities regarded as

cybercrime include identity theft, phishing and stalking (Wall, 2005). While most forms of cybercrime are beyond the user's ability to control, some forms, such as coming across child pornography or other offensive content, do not directly target the victim but can still be considered as harassment by the Internet user. By definition, some of the offensive content Internet users come across can be regarded as cybercrime (for example, the case of child pornography), while others are not officially considered a crime (for example, when users are confronted with video clips of traffic accidents). However, nearly all cybercrimes or forms of offensive content can be classified as cultural outcomes because they concern the subjective interpretations of (exceeded) norms and the behaviors that result from it. In addition, all of these outcomes in the cultural field can evoke negative consequences, such as sadness or anxiety.

6.2.4   *Negative social outcomes of Internet use*

In the literature, social consequences of Internet use are often specifically linked to social networking and mostly relate to *personal networks* within the social field. As an example, studies have focused on the influence of social media use on existing social ties or relationships, explaining that this Internet activity enhances an individualization process (Vriens & Van Ingen, 2018) or weakens existing social ties (Bargh & McKenna, 2004). A prominent outcome in this field is cyberbullying, with an extensive body of literature being devoted to the topic (e.g., Cassidy, Faucher, & Jackson, 2013). Although age is often assumed to be an important indicator of cyberbullying, as it is mostly linked to youth and adolescents, it is plausible that adults also experience cyberbullying. In this case, cyberbullying might be related to one's work or workplace and colleagues (Privitera & Campbell, 2009) or to (anonymous) social media, where online discrimination and harassment might be experienced (Kattari & Hasche, 2016).

Other studies mention neglecting social activities, sacrificing real-life relationships and experiencing loneliness as negative outcomes of Internet use (Kuss, 2013; Spada, 2014). However, social outcomes of Internet use also come about in everyday life situations—for example, annoyance caused when a family member is occupied with the mobile phone at the family dinner table, neglecting social conversations. Such situations can be perceived as a negative consequence, though not as detrimental as the weakening of existing social ties.

Other negative outcomes that can be placed under the social field can, in addition to *personal* or *informal networks,* apply to *formal* or *political networks.* An example would be when one unwantedly becomes a member of a charity or a civic organization after online interaction.

6.2.5   Negative personal outcomes of Internet use

Negative consequences that relate to the personal field are often associated with the individuals' mental or physical state, such as aggression and hostility, neglecting health duties, altering sleep and eating habits, anxiety and curtailing of other pastime activities (Chen & Gau, 2016; Kuss, 2013; Singh, Fox, & Brown, 2016; Spada, 2014). These outcomes belong to *health* within the personal field in the corresponding fields model. There are also physiological harms arising for bad physical posture and repetitive actions when using a device, e.g., backaches, eyesight deterioration, headaches, and repetitive action disorders (Suris et al., 2014). Suris et al. (2014) showed that although problem-prone users were more likely to experience such physical problems, they were also applicable to average users.

Beyond *health* outcomes, there are other outcomes that relate to the personal field. For example, one can feel sad or lonely after performing specific activities online (*leisure*) or can get confused about any particular subject in the tangle of information that can be found online (*self-actualization*).

6.2.6   Coping with negative outcomes of Internet use

The strategies that Internet users apply to cope with the different types of negative outcomes they are confronted with are likely to differ. Examples include seeking support (Dehue, Bolman, Völlink, & Pouwelse, 2012; Kowalski, Giumetti, Schroeder, & Lattanner, 2014) when experiencing information overload, claiming that being victimized by fraud does not truly bother them, ignoring persons who send offensive messages (Parris, Varjas, Meyers, & Cutts, 2012) or blocking certain websites in the case of privacy concerns (Kowalski et al., 2014). In general, coping strategies can be classified as *preventive coping, reactive coping* and *having no way to cope* (Parris et al., 2012). Preventive coping strategies could implicate the setting of age appropriate limits on certain platforms or learning about signals of a scam. Reactive coping strategies can involve reporting online abuses to platform operators or deleting online contacts from social media. When people find that they have no way to cope with certain negative outcomes, it might be that they simply do not know how to act, but it might also be that they do not feel the need to take action in order to diminish the impact of an outcome or to prevent the specific outcome from happening again. If Internet users apply this strategy, we denote it here as a *passive* coping strategy.

6.2.4   *Who is disadvantaged the most?*

Based on the inventory of negative outcomes, we stress that all of these outcomes can potentially be experienced by anyone using the Internet (Suris et al., 2014). However, some users might be more prone to negative outcomes than others are. As an important indicator of differences in Internet skills and types of use, educational level was found to be a determinant of positive outcomes of Internet use (see chapter 5; Van Deursen & Helsper, 2015). Supporting previous studies, chapter 5 showed that the highly educated generally obtain a broader range of benefits from using the Internet than the less educated do. They do so in more domains of society, as people's inability to obtain a certain benefit in one domain of society often transfers to other domains (Van Deursen & Helsper, 2018). First indications for comparable relations between educational level and negative outcomes were also found with reference to (outcomes of) gaming addiction (Kuss, Griffiths, Karila, & Billieux, 2014). Departing from the inequality perspective and relying on the corresponding fields model, we expect that negative consequences of Internet use are unevenly distributed between the less educated and the highly educated. To empirically investigate this premise, we should distinguish between the *confrontation with* negative outcomes, as reflected in the *types of outcomes* people face, and the way people *cope with* that particular outcome. The uneven distribution can go in one of two directions. One might suggest that the highly educated, who are generally more frequently online and perform a wider range of activities (Blank & Groselj, 2015; Van Deursen & Van Dijk, 2014), are confronted with a higher diversity of negative outcomes of Internet use. Furthermore, the less educated might be less capable of coping with certain outcomes, as they possess lower levels of digital skills compared to the more highly educated. To determine which of these premises apply, a qualitative approach will be applied. This approach is needed to unravel why outcomes might be unevenly distributed and how participants cope with those outcomes within the social context they are part of.

6.3   Method

For the details of the method used in this study, see chapter 3, in which an overview of the participants (characteristics) is included. The questionnaire and corresponding interview questions are attached in Appendix 6a of this chapter. The corresponding coding scheme can be found in Appendix 6b.

6.4   Results

In this results section, we will first elaborate on the negative outcomes that were mentioned during the interviews. The corresponding fields model will be used to guide the results. Most negative outcomes, as exemplified in the theoretical framework, were mentioned by one or more participants. Some additional outcomes were mentioned and are classified and discussed under the corresponding field below (as our original inventory of possible outcomes was not intended to be all-encompassing).

Thereafter, we will discuss differences between lower educational attainment groups (LEA) and higher educational attainment groups (HEA) with regard to negative outcomes of Internet use. This part will examine who is actually disadvantaged the most by Internet use in terms of *confrontation* and *coping with* outcomes and why that is the case. Below, the relative differences in *confrontation with* and *coping with* outcomes between the two educational groups are discussed for each outcome.

6.4.1   Economic

Economic – income and property

In relation to *income* and *property*, more than half of the HEA-participants and a minority of the LEA-participants indicated that they have experienced fraud or scams online at least once, the consequences of which were mostly financial. In addition, some of the LEA-participants said that their trust in online trade has decreased so much that they are hesitant to participate in online selling or buying, while HEA-members mainly said they have become somewhat more cautious and learned about indicators of online fraud to prevent such practices in the future. In this way, HEA-members apply a preventive coping strategy, while LEA-members seem more passive, as they just refrain from conducting certain activities online.

HEA-members indicated twice as much than LEA-members did, to have spent money online unnecessarily. Members of both groups noted that through the Internet, they more often bought something impulsively or something that does not work out well, such as a toy that appears to be different in real life than in its online presentation. In both groups, unbeneficial forms of online shopping, such as having made bad bargains or engaging in impulsive buying, resulted in financial consequences. However, the impact of those financial consequences was different between the groups, as LEA-participants often indicated they could have

used the money better for other purposes, while the HEA-members often spoke in terms of having 'too much stuff in the home' and 'buying things we do not really need, though not necessarily with consequences'. In this domain, a few participants also mentioned having become a donor to a charity or a subscriber of a fund that they did not actually want to support. Consequences were solely financial here, but in neither case detrimental. Some HEA-members indicated having set strict limits in online shopping in order to prevent themselves from needless spending, thereby applying a preventive (in some cases, reactive) approach. In turn, most of the LEA-participants noted they do not mind spending money even though there was no need per se, thereby being passive in coping with this outcome. Some HEA-members also mentioned not having to worry about it, but a difference in spending limit between the two groups might be relevant here.

> *"I've now also ordered a mouthguard. It was only 1 euro, but I ordered it and now it's just laying here and... actually I do know that I'm probably not going to use it. But, well, for only a euro. It's not like you spent too much money..."* – LEA, female, 42

> *"Too much stuff; that's basically it. Every time the postman delivers a package, we think, 'oh okay,' and 'where should we put this?'... But no, no financial consequences."* – HEA, female, 45

The same kind of difference appears between the two groups in terms of the consequences of gaming and gambling online. Members of both groups engage in these activities, but for HEA-members, financial risks are often not applicable, while LEA-members do, in some cases, experience hardship due to their loss.

> *"Well, I have to be careful that I'll remain able to feed the kids. The bills and food have priority. Normally, I should have something extra as a buffer, but sometimes, I already spent it on gambling."* – LEA, female, 38

Economic – education and employment
Concerning *education* and *employment*, major differences exist between the two educational groups regarding *work pressure*, which applies to almost all HEA-members. For the few LEA-participants who indicated feeling work pressure due to the Internet, this pressure is mostly caused by an increased number of daily tasks or by organizational matters that are performed via the Internet. The

increased pressure for this group therefore mainly exists while being on the floor during work times, while for HEA-participants the workload and pressure get carried over from their workplace to their homes. Presumably, this is mostly caused by the fact that employees are currently accessible 24/7 through the Internet and are able (or even expected) to work whenever and wherever they are. As a consequence of increased work pressure, HEA-members often seem to be harmed by stress, mental illness and poor sleep. In addition, some mentioned they need to rearrange their private lives because leisure activities and family life have to make room for work. Work pressure comes at the expense of job satisfaction for some HEA-members, while members of both the HEA and LEA said that they sometimes have to skip through some of their work because of the increased number of tasks. HEA-members often talked about ways to diminish the influence of work pressure on their private lives, such as by turning off their phones or e-mail, thereby applying a reactive approach that LEA-members do not adopt.

> *"We used to fill out a 'caring file' at the client's home. Now, we have to perform all kinds of administrative tasks on the iPad, and that takes more time. Yes, we do get paid for the extra demand because it's during working hours, but still."* – LEA, female, 53

> *"Well, our complete system runs on the Internet, so I can log in and work everywhere I want. Sometimes I see issues of which I think, 'actually I need to do something about this now.' Sometimes that goes at the expense of a good night's rest."* – HEA, male, 43

> *"I've just been at home for 15 months because of a burn-out. I've now got my work and private phone separate. And when I'm home, I'm not checking my mail, because if I do that, I'm screwed."* – HEA, female, 45

6.4.2 Social

Social – informal networks
About half of the HEA-members and a quarter of the LEA-members see *social pressure* as one of the primary negative outcomes of Internet use, yielding consequences such as stress, irritation and the fear of missing out. Participants of both groups mentioned that their constant availability through the Internet and

the implicit expectations of availability that come with it cause them to feel pressure to respond as soon as possible to all messages. Participants in both groups also feel they are held accountable by others for not responding to online communication, as this is sometimes vocally denounced by family and friends. Some of the HEA-participants said that they impose this pressure on themselves even when others may not expect them to respond. These participants try to diminish this tendency by discussing it with others or by defining limits for themselves and being strict in staying within them. LEA-members mostly do not actually act to diminish this social pressure (passive coping strategy).

> *"I think it's a bit like I want to belong to a group and I don't want anyone to forget me. Therefore, I try not to forget them either."* – LEA, female, 48

> *"Yes, I do feel the pressure to respond immediately. But I do try to diminish it; it's something that I teach myself not to do. I now decide which e-mails are important enough to answer immediately and which aren't. So now the pressure is actually coming from myself."* – HEA, male, 33

Social disappointment or friction in an existing relationship is another outcome in the *informal* or *personal networks* domain. In both groups, this social disappointment is mostly caused by misinterpretation of communication or social pressure, which is sometimes due to a lack of intonation or (facial) expressions in online communication. Mainly participants aged over 50 years indicated they still prefer to interact with friends and family via offline channels for this reason. Some HEA-participants also declared that the Internet caused social disappointment because they have now to know 'the real person behind someone' they already knew offline—for example by posts on social media.

> *"Sometimes I'm asked: 'haven't you read it yet, on Facebook?' Well, not always. [...] When I see messages I often think, 'Should I like this or not? Would they do the same with my messages?' That's how I handle it."* – LEA, male, 49

> *"We received a WhatsApp message in which a certain disappointment was expressed. I thought: why wouldn't you tell me this face-to-face? [...] Such a message can be interpreted in many ways. Face-to-face you can at least discuss things and start a*

*conversation. This way it just escalated, the relationship has
declined, yes."* – HEA, male, 33

A final negative informal social outcome is that the Internet causes, mostly
according to HEA-participants but also to a few-LEA participants, the
individualization of society. Participants stressed that in many social or domestic
occasions, people are currently occupied by their phones or other devices for
which social interaction is an exception rather than a standard. HEA-members
noted that it is harder to spend 'quality time' together than before because
people have to be made aware of the fact that this is needed. This group also
stressed the importance of setting the right example for their children
concerning this point. Some LEA-participants also noted the detrimental impact
of device use on social interaction, but they do not feel the need to take action.
When participants were asked if relationships became more superficial through
this tendency, the answers were mixed. HEA-participants mostly answered that
they agreed, adding examples of offline social situations they miss from the pre-
Internet days. Some of the participants who agreed with this statement added a
nuance by stating that, on the one hand, the Internet might make some
communication (and therefore some relationships) superficial, but on the other
hand, it is easier to stay in touch via the Internet. The quotations below illustrate
the different coping strategies that the two groups adopt: where LEA-members
are often passive in tackling this outcome, HEA-members are more inclined to
take action.

> *"Some time ago we were away for the weekend with a group, and
> everybody was occupied by the Internet all the time, that's a
> downside too. There are no good conversations anymore, everybody is
> 'in his or her own world'. But no, I don't point it out to them."* – LEA,
> female, 53

> *"Something we are aware of lately, is how fast we're all turning to the
> Internet and that we are together in the room but everybody is doing
> their own thing. We regularly address it: 'could you put that thing
> away, please?'. Or on Sundays, we play board games together. Even if
> you don't even like to play games, at least you're doing something
> together on a day off. It's just so easy to grab the phone and be in
> your own world, but you easily forget to engage in a conversation
> with the children or with each other. That's really the danger."* –
> HEA, male, 41

Social – formal/civic

Concerning formal resources, negative outcomes mainly deal with distrust against information and institutions. Although minorities of both groups harbor such distrust, LEA-members stated that it is caused by the fact that they 'don't miss anything of what's going on in the world anymore', and so they have more insights in, for example, the way the country is governed or how information is manipulated. They also mentioned that current controversies, such as fake news and media framing, make them uncertain of what to believe and what not to, with distrust as a consequence. When discussing mechanisms such as fake news, LEA-participants often suggested that they see it as a part of the current online world and thus do not think there is a way they could or should act upon it.

> *"There's much news that is framed differently and that's only half-true. I don't indiscriminately believe what I hear anymore."* – LEA, female, 36

> *"Sometimes you see bits of news items about political figures, which you wouldn't have known without the Internet. I don't think what is called fake news is always fake... A while ago I read something about a vacation home of a party leader, well, that I don't trust."* – LEA, male, 49

In turn, HEA-members mainly distrust the information they find online, because they know that anybody is able to put anything online as if it is the truth and that it might stay online forever. In addition, they have more knowledge concerning certain mechanisms, such as how information gets manipulated easily. Therefore, they are also more eager for and able to tackle the problem of unreliable information by always consulting several reliable sources and tracking down which interests are involved (preventive coping strategy). Another difference is that HEA-members seem more concerned about what these developments mean for their society as a whole, both now and in the future. They are not only worried about their own information provision, but they also think about ways to diminish or bypass mechanisms such as fake news.

> *"Fake news. Previously, you used to search for a clear scientific relationship, nowadays it is often refutable. But still it is taken as the truth by society. I think that really is a bad thing, opinions are mistaken for facts."* – HEA, female, 37

> *"The problem is that everyone can publish. And every opinion is on the Internet. Truth, opinions and facts are increasingly harder to distinguish."* – HEA, male, 47

Social – political networks

A handful of participants in both groups also discussed distrust against institutions, specifically in the light of politics. Both LEA- and HEA-participants mentioned that their political preference is determined differently than it has been previously. Before, a political preference was often inherited from participants' parents, while participants have begun to weigh their own preferences more, as many sources have become available. While LEA-members merely base their distrust on the political content they find online and on their observation that most expectations or promises are not met by politicians, HEA-members again worry more about the way information is manipulated or framed as if it were the truth, because they have studied the mechanisms behind this manipulation. Coping strategies of both groups thus match with the way they cope with distrust of institutions and mechanisms such as disinformation and fake news.

> *"I used to vote PvdA (Dutch social-democratic party) because my father told me so. The first few years I still voted for the party because I didn't know better. But then, when I started to read more online, I saw they sometimes promise things, but in the end, they fail to comply."* – LEA, male, 47

> *"In the end, the truth is also 'determined' by the number of hits it gets online. That information gets manipulated so easily online, and...this mechanism is being misused, that's really bad. People can manipulate the media on such a big scale, and ethics are often overlooked. The way political decision-making takes place, like with Trump, is bad."* – HEA, male, 47

6.4.3   Cultural

Cultural – belonging and identity

Most of the cybercrimes that were mentioned, in addition to financial fraud (see economic), could be placed under the cultural field of the corresponding fields model, as these outcomes correspond with (un)acceptable or inappropriate

behavior, as based on culturally acquired values and norms. Some cybercrimes were only mentioned by a few LEA-participants—namely, stalking, discrimination and catfishing. Negative outcomes that were associated with all of these crimes could be summarized as grief, distrust, anger, health deterioration and a decrease in self-confidence.

> *"I've got stalkers. They are present offline, but online is a nice extra tool for them. They just strike once again."* – LEA, female, 42

> *"I have experienced identity fraud on a business level. By falsifying a signature, they performed a payment order, in Germany that's very easy. Nowadays, a bank employee calls me when they see a suspicious transfer, but still it can just happen."* – HEA, male, 36

> *"It can stay on my mind for a while when I read discriminating comments online. And offline, the people we mangle with don't say such things. Maybe it is also that I can't understand that people say such things online."* – HEA, female, 45

Other *belonging* and *identity* outcomes have to do with offensive content that Internet users come across and that have different consequences. Types of offensive content mentioned are: personal discrimination, derogatory content against women, and accidentally coming across sexual or violent content. Members of both groups experience this type of outcome, but in different ways.

In both groups, only a few of the members experienced one of these cybercrimes on a personal level, such as personal discrimination and harassing messages. Other HEA-participants indicating these outcomes mentioned they oftentimes only witness crimes online, such as discrimination or harassing messages. Notably, they mentioned consequences from just witnessing those practices, such as feeling a general disappointment in humankind or feeling powerless for not being able to explain why this was inappropriate and rude. Other offensive content, which could not specifically be labeled as cybercrime in itself, was also mentioned by a majority of both educational groups as causing negative outcomes from Internet use. Video clips of maltreatment or injured victims of car accidents were mentioned here. While participants of both groups oftentimes feel irritation, disgust or mental unrest when confronted with this kind of content, members of the HEA also indicated they are afraid that they cannot protect their children against such a 'mad world' anymore, although they

try to. They do so by informing them about potential harm and by applying filters to online services and platforms.

> *"Animal cruelty, that's what I find horrible. It just appears in my Facebook timeline unsolicited. [...] Reporting it at Facebook doesn't make sense because they don't take action. So, does it make sense to react? To report? I don't think so."* – LEA, male, 48

> *"Because of the Internet, we have to inform our children in different ways than before. We are both occupied with IT-related jobs, so that makes it a bit easier. But it remains a problem."* – HEA, male, 45

> *"I am worried about the way our children should be protected against unwanted content and online bullying in a few years. It just isn't easy to completely stop it, as a parent. There are filters available, but you're not always there, they're often using another device. It is essentially different from when there was no Internet."* – HEA, female, 39

In a similar vein, some HEA-participants mentioned another outcome related to *identity* and *belonging* that none of the LEA-participants mentioned. These HEA-members state that they are increasingly worried about the perfect world being portrayed on social media that does not reflect real life. While a few of these participants indicated that they feel uncertain about themselves, the most prominent consequence is, again, the fear of not being able to protect their children or others. These HEA-parents are afraid that their children feel the need to compete in a 'fake world' that would never satisfy and that they would never be truly happy with what they do and who they are.

> *"I remember going through Facebook while thinking: everyone has a fantastic life. Even my sister, whom I know is actually not doing well at all. I know I then realized: I'm not taking part in this anymore. I think it's mainly negative for children and for people who don't see that it's fake, that it is only the best version of themselves that people present on social media."* – HEA, female, 41

> *"I do see danger in the impact of people who paint sort of a perfect world online. And while I know that that's not reality... I do know a lot of people who see it that way and who seriously look up against*

these 'perfect lives' online and think that is normal. That's really a
danger of the Internet, especially for younger generations." – HEA,
female, 39

Personal – leisure
The first and most prominent *leisure* outcome in the personal field was labeled as
wasting time and was mentioned by half of the HEA-participants and some LEA-participants. Members of both groups note that they feel like they are often
wasting time online, while they do not always want to. Most participants added
that with the time they spend online, they could have been doing other, more
useful tasks. Because this waste of time results from voluntarily engaging in
Internet use, some participants wondered if they would call themselves addicted.
Only HEA-members mentioned ways in which they seek to decrease this waste of
time by, for example, setting strict time limits for themselves or by installing
phone apps that keep track of the time spent online—a combination of a reactive
and preventive strategy.

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> *"It's just an annoying habit, creeping into your daily routine.*
> *Grabbing your phone and scrolling. It's annoying, but still we're*
> *doing it. When you're alone in a restaurant, before, you used to start*
> *a conversation with a stranger or the waiter, nowadays you're just*
> *scrolling the phone."* – LEA, male, 38

> *"It is easy to forget the time. [...] I'm also using an app consciously,*
> *which shows me how much time I spent on my phone that particular*
> *day. I also installed it to become aware of my time online and to*
> *diminish it."* – HEA, male, 39

In addition to participants ignoring other tasks they would rather have done,
preoccupation with the Internet also leads to being tired or unrested and 'not
being present in the moment', as well as being highly dependent on certain
devices in daily life. These last consequences were only mentioned in HEA and are
(mental) *health* related.

> *"The dependency on the device, that's really a negative thing to me.*
> *My telephone died and then you're inconvenienced all of a sudden,*

you can't communicate. Everything is based on this little thing [...].
The ease of it, when it suddenly disappears, wow." – HEA, male, 39

"You really have to be consciously engaged with: what do I want,
what am I looking for. I think that with that, you can take the
prevalence of the Internet in daily life in your own hands. But if you
just go with the flow, then you will drown, you'll go crazy."
– HEA, female, 36

Personal – self-actualization
Another consequence resulting from occupation by or dependency on the
Internet and related to *self-actualization* is decreased personal development. A
number of HEA-members stated that although the Internet offers many
opportunities for developing themselves, it is also superficial and 'easy
entertainment'. They noted that the problem is not this type of pastime per se,
but the fact that it is predominant and there is less room for other, more
educational or informative activities. As a consequence, the HEA-participants see
skills, such as language proficiency, communication skills, the ability to find
solutions without consulting Google and mental arithmetic, declining.
Participants noticing this negative outcome explained that they truly have to
consciously spend time offline being occupied with instructive or relaxing
activities instead of spending 'useless' time online (a preventive coping strategy).
In addition, these participants fear impoverishment of society as a whole because
they worry about others who lack this critical approach and 'tend to get lazy
when having access to the Internet'. A decrease in self-actualization as an
outcome of Internet use was not mentioned by LEA-participants.

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"For example, reading, it develops you as a person. I think that if
you're online too much, that in a certain moment your vision will
become narrower." – HEA, male, 35

"The language proficiency. I love language, but through that stupid
Internet language... It's horrible when you see how many people just
can't distinguish the simple forms. I'm also reading articles about
children who can't do the spelling anymore, it's terrible." – HEA,
female, 41

Also connected to *self-actualization,* is information overload as a consequence of
Internet use, an outcome that a majority of both groups mentioned. General

effects pertinent for members of both groups are frustration and mental unrest or stress. However, for LEA-members, information overload is often an obstacle for accomplishing what they have set out to do, while for HEA-members it usually only results in a larger time investment for tasks they want to and do accomplish. Additionally, LEA-participants often mentioned that they sometimes do not know which type of product or service to choose as a result of information overload. In general, HEA-participants seem to know better how to tackle such overload because they often have more knowledge of how search engines work. In sum, LEA-members seem to perceive information overload as an inevitable part of being online (passive coping), while HEA-members try to take action (reactive strategy).

> *"Sometimes, I'm completely overwhelmed. I just learned that I need to specify my search terms on Google, for example. But if you don't do that, then you really get a lot of results. After a certain time, you don't know what to use anymore."* – LEA, female, 49

> *"If you'd like to buy a charger and you're typing that in, you'll get a hundred websites. And then I think, 'Which one do I need, for God's sake? Which one is the right one?'"* – LEA, female, 25

> *"We should also protect our children for it, we are already really consciously thinking about it. A child isn't able to frame all the information himself, so if you expose them to all the information, they'll drown. Therefore, they will get permission to go online only from a certain age."* – HEA, male, 39

Personal – health
Mental stress or anxiety because of consulting medical information online is an outcome that less than half of the participants in both groups face. Participants indicate that they sometimes perform searches online that leads them to think that they are suffering from a serious disease. However, most of the participants indicated that this feeling of stress or anxiety mostly fades away and, if not, it is often solved by a doctor's visit. HEA-participants mentioned, much more frequently than LEA-participants, that the ability to filter and to consult the right reliable sources prevents them from becoming or staying anxious from online medical information.

"Yes, I'm quickly worried when I look up medical info online. I once had an arthritis attack, and so I went online. Headaches, migraine attacks. I thought: oh no, what if I have a brain tumor? In the end, there was nothing wrong with me. But you can find so many things on the Internet!" – LEA, female, 46

"I do take into account: from which website did I get this and what is true of the information I found? Mostly dokterdokter.nl gives the same information as the doctor. But well, one connects that to kidney problems in the search query and another to cancer. Well, good luck telling those people what's true." – HEA, female, 37

Other negative outcomes that can be classified under the personal field are *privacy concerns.* These apply to approximately a quarter of participants in both the LEA and HEA, but originate from different stances. LEA-members often worry that all kinds of institutions or 'websites' are eager for their personal information in order to misuse these data, though they could not specifically put into words which kind of consequences they are afraid of. Their concerns seem to be a product of a combination of a certain world view, with relatively notable distrust, and a lack of cognition or knowledge about online mechanisms. HEA-members are also worried about data security and privacy, but they are often concerned because they have gained knowledge of future developments, such as the Internet-of-Things and new privacy laws. Sometimes, this knowledge is acquired via an ICT-related job, but oftentimes, it is also due to a personal interest in future developments and eagerness to anticipate the developments (preventive strategy). Rather than distrusting institutions, websites or organizations based on how they might misuse personal information, some HEA-participants were afraid because at the time, it was unclear how these new systems might use or link certain information, leading to possible detrimental outcomes as a consequence.

"They know everything about you, also increasingly more. And to me, that's frightening. Because once your name is mentioned and often I think, 'I never told you that?' So that's alarming." – LEA, male, 80

"Sometimes I worry about how it might develop, especially with the Internet-of-Things. [...] In my work, I do a lot with phishing and malware. The problem is that people who interact with the Internet are increasingly less techie, so to say, and there with less armed against all the trouble that can happen." – HEA, male, 45

6.5   Discussion

6.5.1   Main findings

In this study, we used an inventory of negative outcomes of Internet use, based on Helsper's corresponding fields model (2012). Furthermore, a comparison was made between the extent to which LEA- and HEA-members were disadvantaged by Internet use, as reflected by the type of negative outcomes they are confronted with and how they cope with these outcomes. By applying a qualitative approach, we were able to better understand the differences between the two groups. We found that the types of negative outcomes of Internet use in itself seem evenly distributed, as nearly all sorts of outcomes occur in both educational groups. This suggests that every Internet user is in danger of becoming a victim of, for example, getting hacked or coming across harassing or offensive content while surfing the Internet. The most important finding of this study is that the way Internet users cope with negative outcomes differs between the two educational groups. HEA-members often attempt to take control themselves when faced with a negative outcome. They do so by looking into the cause, by sorting out how to prevent similar outcomes in the future, or by protecting their children from these particular consequences. This also applies to anticipating future negative outcomes, such as those that may arise from the Internet-of-Things. In contrast, LEA-members mostly just experience a negative outcome and often do not act on it. In addition, LEA-members mostly attribute blame to a particular institution or to 'the Internet' in general, while HEA-members often seem to take a critical look at their own role in facing a certain outcome. HEA-members mostly apply reactive coping strategies but very often also try to foresee and prevent negative outcomes. In contrast, LEA-members sometimes cope in a reactive way, but mostly see negative outcomes as a part of Internet use and thus remain passive. Prior studies revealed that Internet experience and digital skills are important predictors for the way the Internet is used and the outcomes achieved (Van Deursen & Helsper, 2018). In particular, higher order skills of creativity and strategic use of the Internet play a key role; these skills are those that people with higher levels of education perform relatively well (Van Deursen & Van Dijk, 2014).

In conclusion, it could be stated that LEA-members are disadvantaged more by negative outcomes from Internet use compared to HEA-members, as the types of outcomes they face are similar, but their ways of coping with those outcomes differ. LEA-members are less devoted to diminishing the impact of negative outcomes by the way that they cope with those outcomes. HEA-members are

better able to compensate for the outcomes they are confronted with by consulting their digital skills and knowledge of certain online mechanisms. LEA-members might, however, continue to bear the brunt of the same negative outcomes. Within this study, for example, this could be observed regarding the influence of the Internet on social pressure, as HEA-members taught themselves to critically weigh their responses and thereby diminish the pressure, but LEA-members just accepted the negative outcome. In the long run, this tendency might be reinforced by the approach that the two educational groups take—either anticipating or bearing negative outcomes. Again, habitus comes into play: the mental structure that people develop as they grow up in a particular social context (see chapter 1). Structural variables such as one's educational background determine – via the habitus – how the Internet is valued, acted upon and integrated into daily life (Cockerham, 2013; Van Eijck & Bargeman, 2004) as reflected in the way people domesticate the Internet (chapter 4). Not only does it influence both positive (chapter 5) and negative outcome obtainment, the habitus and way of domesticating also seem to have their stake in the way that people cope with outcomes. One's (educational) background thus seems responsible for the impact of the Internet on the user's daily life, from the way it is appropriated to the way positive and negative outcomes are experienced. Considering educational level in this comprehensive manner is desirable, as it will benefit digital inequality research that mostly regards educational level as a standalone determinant.

Although negative outcomes are often overlooked in digital inequality research, it actually appears to be a problem area in which inequalities in society manifest in a new way. As Van Dijk (2019) sets forth, experiencing negative outcomes mostly implies a reduction of personal, social, economic or cultural resources. With regard to economic capital, for example, when a person is confronted with financial fraud online, the person's economic resources become reduced. As another example, Internet users experiencing cyberbullying are expected to lose personal or social resources, such as confidence or informal ties. The set of resources and powers that people possess is also referred to as 'capitals' (Bourdieu, 1984), which are decisive for one's societal position. As some are more disadvantaged by negative outcomes than others, differences in resources and capital might therewith lead to social reproduction: because HEA-members generally have more resources in all domains of society, digital inequalities relating to negative outcomes of Internet use seem to reinforce social inequalities. In terms of policies, more awareness should be raised concerning the specific negative outcomes that Internet users could face, especially among people from lower social strata. Internet users should be taught how to navigate

the Internet wisely and what to do in the case of, for example, fraud, scams or online bullying. Additionally, they should be informed about the impact of placing certain content online or performing specific online activities, where the focus is both on the victim and on the perpetrator. Such education should not be limited to less educated Internet users – everybody should be given this education in primary school.

6.5.2   Limitations and future research

Firstly, this study has taken an explorative approach to negative outcomes of Internet use. While the corresponding fields model (Helsper, 2012) served as a useful background for classifying the outcomes mentioned, some of the outcomes were hard to categorize. Besides, online outcomes and experiences were often difficult to separate. For example, one might wonder if increased *work pressure* or *cyberbullying* should be regarded an outcome or rather an online experience, of which consequences such as mental illness and sleeping problems are the outcomes. Future research is encouraged to further study negative outcomes of Internet use and develop more comprehensive frameworks.

In addition, we recommend that future studies assess the extent to which people are actually disadvantaged by Internet use. Although in this study we specifically aimed at identifying an outcome as 'negative' when a participant assessed it as such, outcomes can occur on a broad spectrum of negativity which will vary among people: one may perceive the same disadvantage as 'more negative' or severe than another. After the confrontation with negative outcomes and before coping with those outcomes, people seem to make an estimation of how they perceive a certain consequence. Some participants in this study, for example, indicated that they did experience a certain outcome, but that they did not find it a negative outcome per definition because they were not disadvantaged by it themselves or because they thought it was just part of using the Internet. In addition to *confrontation* and *coping with* negative outcomes, the *assessment of* outcomes could add to the conclusions drawn in this study. In addition, it is important to keep in mind that value judgments of outcomes might not only range on a spectrum of negativity, but that many online activities might lead to both positive as well as negative outcomes. Taking online news gathering as an example, we found that some participants valued the Internet for its flexibility in providing news items during the day, while others loathed it for its power to manipulate (ignorant) people with mechanisms such as fake news. Another recommendation for future research is thus to consider the multifaceted

nature of online engagements, which might also elucidate the subjectivity of outcomes measured.

In the current study, the results suggest that nearly all types of outcomes occur among both less and highly educated people, as this study did not focus on the frequency of negative outcomes. Future studies might take a quantitative approach to studying whether the number of Internet outcomes experienced differs. It could, for example, be expected that the highly educated actually face the outcomes mentioned more often (Blank & Lutz, 2018) because, in general, they are online more frequently (Blank & Groselj, 2015; Van Deursen & Van Dijk, 2014). Such a follow-up study could be standardized and repeated by means of a quantitative survey.

Finally, in the concluding section, we anticipated how differences in severity and impact of outcomes between the two educational groups can be expected in the long run. For future research, we thus recommend conducting a longitudinal follow-up study with intervals to determine whether the way in which different educational groups cope with negative outcomes has lasting consequences.

Appendix 6a. *Questionnaire and interview questions round 3: negative outcomes*

Tick the boxes of the negative outcomes that you have experienced at least once or are still experiencing:

- ○ I felt more work pressure through the Internet than I would like
- ○ I felt pressure to respond to online messages of family, friends or acquaintances
- ○ My relationships have become (more) superficial through social media (WhatsApp, Facebook, Instagram, et cetera)
- ○ I was (or my family members were) sent painful or inappropriate messages via the Internet
- ○ Through the Internet I (or my family members) came into contact with bad people
- ○ I was disadvantaged through online contact with a government agency
- ○ I became a donator or member of an organization/fund via the Internet, which I regretted afterwards
- ○ I bought products online that I actually did not need or I unnecessarily spent money in other ways online
- ○ I lost money by taking part in online gambling or games
- ○ I became a victim of online fraud or scams
- ○ I found information online that made me think I was suffering from a serious disease or illness
- ○ I followed unhealthy advice that I found online
- ○ I became addicted through the Internet
- ○ I spend more time online than I would like to
- ○ The Internet has made me insecure
- ○ The Internet has made me suspicious
- ○ I have less trust in politics/politicians because of the Internet
- ○ I experienced information overload while being online
- ○ I came across offensive content online that I would rather not have seen
- ○ I read inappropriate comments online which were directed to a group that I belong to (e.g., women, migrants, Christians, Muslims, Jews, elderly, et cetera.)

Open ended questions negative outcomes:

I see you experienced [negative outcome].

1. Please elaborate a bit on [negative outcome]. How did this happen online? What form did [negative outcome] take?
2. What impact does [negative outcome] have on you(r daily life)?
3. Have you encountered [negative outcome] offline before? If so, does [negative outcome] differ between the offline and online way?
4. How many times have you experienced [negative outcome]? Was there a difference?
5. Did you anticipate [negative outcome] before it happened? If so, how did you try to prevent [negative outcome] from happening?
6. Did you adapt this response in order to prevent [negative outcome] from happening again? If so, was it affective?
7. What would you do if [negative outcome] would happen to you again?

Appendix 6b. *Coding scheme negative outcomes*

Field	Description of outcome	Code
Social	Social pressure: always available, feeling obligated	N2B
Social	Wrong interpretation of messages: social unrest	N6A
Social	Offensive content: getting to know the negative side of someone	N8D
Social	Individualistic: less social offline, less quality time	N12A
Social	Continuously informed: distrust against politics/politicians	N16B
Social	Relations built online: fall apart when there's no Internet	N20A
Personal	Stalking, identity fraud: distrust, feeling unsafe offline	N3C
Personal	Fraud/scams: deterioration physical and mental health	N3D
Personal	Victim lover boy (children): sadness, distrust, vigilance	N3E
Personal	Dependency: no time for activities one should do	N4A
Personal	Online bullying: sadness, anger	N5A
Personal	Online unpleasant messages: deterioration relationships	N5D
Personal	Online utterances: norms and values seem to fade	N5G
Personal	Interpretation of medical info: mental unrest	N6B
Personal	Having followed unhealthy advice	N6C
Personal	Gaming addiction: bad eating habits, little sleep, little movement	N10B
Personal	Information overload: frustration, mental unrest, stress	N11A
Personal	Personal development: impoverishment, one-sided visions	N13A
Personal	Online news provision, news sources (fake news, framing): distrust	N15A
Personal	Continuously up to date: distrust	N16A
Personal	Distrust in other people: through fraud, scams etc.	N16C
Personal	Data abuse: distrust	N16F
Personal	Privacy: fear of data abuse	N17A
Personal	Dependency: everything dependent on Internet, can cause disasters	N19A
Personal	Offline experience: everything already outlined, lack of surprise	N21A
Personal	Development Internet: not being able to get along in current/future developments	N22A
Cultural	Offensive content: everything is "sensation focused"	N8F
Cultural	'Perfect world' outlined online: danger for children	N9A
Cultural	Unpleasant messages: personally discriminated	N5E
Economic	Work pressure: at the expense of family life	N1H
Economic	Fraud/scams: financially	N3A
Economic	Bad buys: needless expenses, coming across unneeded products	N7C
Economic	Becoming a member of funds/charity: regret, financial consequence	N7D
Economic	Error in transfer: financial consequence	N7E
Economic	Gambling: financial consequence	N7F
Economic	Bad buys: too much stuff	N7G
General	Disappearance of local entrepreneurs	N14A

07

When the kids go online: a qualitative study of the children's domestication process in families with different educational backgrounds

7.1   Introduction

In an answer to the frequently expressed concerns about the reinforcement of social disparities through the use of the Internet (e.g., Chen & Wellman, 2004; DiMaggio & Garip, 2012; Helsper, 2012; Van Dijk, 2005; Zillien & Hargittai, 2009), in the previous chapters we aimed to contextualize positive and negative outcomes of Internet use (chapters 5 and 6) that emanate from the way different societal groups domesticate the Internet (chapter 4). While the reproduction of social inequalities is one of the main drivers of the study of digital divides, another way of reproducing inequalities is, for example, by projecting and transferring Internet usage patterns to children: the outcomes and corresponding inequalities are reproduced from one generation to the next (Witte & Mannon, 2010). However, while the literature on children's Internet use has rapidly expanded in the past ten years (Ólafsson, Livingstone, & Haddon, 2014), the majority of studies have focused on 'harmful use', such as Internet addiction studies, with the exception of some studies focusing on disparities in children's Internet use and appropriation (e.g., Judge, Puckett, & Bell, 2006; Livingstone & Helsper, 2007). Accordingly, comprehensive inventories of children's complete Internet domestication processes are – to the authors' best knowledge – not available. Such studies will help to unravel how digital inequalities, as reflected by Internet outcomes resulting from children's domestication processes, could reinforce social inequalities. At the present time in particular, we better understand how adults, i.e., the children's parents, shape their own domestication process, which determines to what extent they benefit from being online (chapter 5). An analysis of how a child makes sense of Internet use cannot be comprehensively performed without taking into account their family's dynamics, as influenced by their different socioeconomic backgrounds (Paus-Hasebrink, Kulterer, & Sinner, 2019). In analyzing differences in children's domestication process, we will therefore depart from their *parental educational level,* which has been shown to be decisive for the way the Internet is domesticated (chapter 4). However, it has also been suggested that we cannot discuss children's Internet access and use with household-level information only (Livingstone, 2002). While parents may transfer their dispositions and corresponding use of the Internet to their children, it is likely that this new generation will also shape their own domestication process according to their own agency (Livingstone, Mascheroni, & Staksrud, 2018) and living environment outside the family, such as school and friends. This study will therefore combine parents' perspectives with children's perspectives through the inclusion of

qualitative interviews in which the domestication of the children in the family is discussed. The aim is to reveal how children's domestication processes occur as they are influenced by their parents and other factors in the social context. This investigation will provide a better understanding of how digital inequalities develop within families. In doing so, we will answer the following question:

> *How do children from families with lower and higher educational backgrounds domesticate the Internet?*

7.2   Theoretical framework

7.2.1   Children's versus adolescents' Internet use

Conducting Internet research in the current era allows us to address an interesting mix of generations: the last generation that knows what it is like to grow up without the Internet but that is not always skilled in all aspects of the Internet, while their children do not know what life in a nondigital world would be like. The plethora of devices with which youth are confronted while growing up, both inside and outside their homes, gives them access to a diversity of content and offers them ways of communicating that would have been unimaginable for their parents at this age (Rideout, 2016; Paus-Hasebrink et al., 2019): they have their own 'digital ecologies' (Livingstone et al., 2018). As a result, children and adolescents are often more familiar with different ICTs and demonstrate greater authority than their parents (Correa, Straubhaar, Chen, & Spence, 2015). However, while children may increasingly take on an expert role within the home, parents are still regarded as an important companion and guide in their children's Internet use. The family is said to be the most important context for children because their lives are embedded in it (Noller & Atkin, 2014). Nonetheless, studying children's Internet use beyond the family is essential as other social contexts – in addition to that of the family – have also been associated with the way in which children make sense of the Internet. Some studies claim that children primarily access the Internet for school, and thus their school environment would also determine children's Internet use patterns (e.g., Turow & Nir, 2000; Valkenburg & Soeters, 2001). Other studies argue that children or adolescents are more likely to be influenced by their peers than by their parents or school environment as they grow older (Paus-Hasebrink et al., 2019). However, just as with literacy in general (Gregory, Long, & Volk, 2004), it is questionable if one of these contexts would make a 'primary context' for

children's Internet use. With their (parental) educational level at the basis, both the children's family, as well as their school and friends are relevant and together constitute a milieu, in which interrelations are likely to exist. For example, children with highly educated parents are likely to have friends with highly educated parents and their schools are likely to be in highly educated neighborhoods. Altogether, this milieu presumably influences children's domestication. Nonetheless, the family context can be regarded children's starting point, where foundations are laid from birth. As was established in chapter 4, the Internet is not only used within the home, and one can be influenced by individuals other than their direct family members; thus, the household context should be extended (Haddon, 2011). The domestic context, with its family dynamics, will be the starting point for this contribution.

7.2.2   Parental influence and mediation

A vast amount of literature has focused on ways in which parents can influence their children's Internet uptake and use under the denominator of parental mediation (e.g., Kirwil, 2009; Livingstone & Helsper, 2008; Nikken & Jansz, 2014). While a large part of those studies departed from a 'risk perspective' and examined the mediation strategies that parents apply to protect their children from unwanted online content and activities, parental mediation strategies are also a way of generally regulating a child's Internet use without them having to face or fear negative online experiences. As parents try to shape their children's Internet use, they have a range of strategies to choose from, including active co-use, interaction restrictions, technical restrictions, and monitoring (Livingstone & Helsper, 2008). *Active co-use* concerns time restrictions that parents might impose, as well as instructive conversations and joint use of the Internet (for example, sitting next to the child while he or she is online). *Interaction restrictions* apply when parents formulate rules regarding social interactions online, such as banning online chatting, while *technical restrictions* include, for example, the application of a filter withholding specific types of online content. *Monitoring* entails parents checking their children's online activities, either overtly or covertly, after the online activity has taken place (Kirwil, 2009; Livingstone & Helsper, 2008).

   The strategies that parents choose to apply are dependent on the parents' attitudes about media (Nikken & Schols, 2015) and the children's age (Livingstone & Helsper, 2008), but overall socioeconomic status or educational level seems the most important factor in parental mediation (Livingstone, 2002). Highly educated parents more often adopt a practice of active mediation, while less educated

parents seem to prefer strategies of restrictive mediation (Livingstone, Mascheroni, Dreier, Chaudron, & Lagae, 2015; Paus-Hasebrink, Bauwens, Dürager, & Ponte, 2013). The application of more rules to children's Internet use among highly educated parents is thought to be caused by their relatively great familiarity with the Internet and its threats (Livingstone & Helsper, 2008).

7.2.3   *Children's domestication of the Internet*

Domestication theory (Silverstone, Hirsch, & Morley, 1992) provides a useful background for the comprehensive study of children's Internet adoption and use, because it considers the sociocontextual factors influencing technology uptake, such as parental influence in the domestic context, peer pressure and the school environment. Domestication includes four phases through which individuals progress while making the Internet their own (see chapter 4) (Hynes & Rommes, 2005). The interpretation of these phases might differ somewhat between children and adults, as children are likely to enjoy some sort of guidance, for example, by their parents or teachers, while their parents were already grownups when confronted with the Internet for the first time. The *appropriation* phase concerns the acquisition and possession of an Internet connection and devices to use the Internet. For children, the appropriation phase might involve negotiations with their parents about new applications or include the purchase of several devices that children might need for school. *Objectification* focuses on the spatial aspect of the domestication (Berker, Hartmann, Punie, & Ward, 2006) in which the expression of style, taste and values might be enhanced through the use and placement of specific devices (Chambers, 2016). Within families, objectification might thus concern the use of the Internet by the different family members in various places in the home. For example, a personal computer can be placed centrally in the home, where everyone can use it, but children might vote for Internet use in their own bedrooms. Sharing the Internet might also mean taking turns among siblings and formulating rules and regulations, which is part of the *incorporation* phase of domestication. The types of activities (and corresponding devices) that children choose to make their own belong to the *incorporation* phase (Berker et al., 2006). During the *conversion phase,* in which the relations and interactions of the family or household members and the world outside their home are central, children might contribute by showing off their newly acquired devices, applications or skills at school. Meanings attached to the Internet can change in the *conversion* phase, as children and adolescents are frequently exposed to the Internet as well as to the opinions of people outside their homes. In this phase, these meanings might change for both children and

their parents, as they also interact with each other throughout the domestication process.

7.2.4 Children's stake in Internet use

Although parents' influence on their children's domestication process cannot be disregarded, as traditional dynamics between parents and children have changed, it is essential to look at children's own role in their domestication process. While it used to be a matter of course that parents would take the lead when the Internet or a new device was introduced in the home, children are now relatively more knowledgeable and are therefore likely to be more autonomous and independent in the construction of their own domestication process. Van den Bulck, Custers, & Nelissen (2016), for example, argue that children might influence the mediation practices that their parents apply. Therefore, it is logical to briefly touch upon the bidirectional relationship between parents and children by discussing some parent-child processes in which children also have a stake. Ultimately, children's Internet use might even influence or change family dynamics (Nathanson, 2015), for example, when children help their parents with new applications, as such interactions lead to a recurring cycle.

Concerning the appropriation phase of domestication, households with children have been shown to be more likely than families without children to acquire Internet access and devices to use the connection (e.g., Heim, Brandtzaeg, Kaare, Endestad, & Torgersen, 2007; Kennedy, Smith, Wells, & Wellman, 2008), mostly because children need certain devices for school-related activities (Galperin & Arcidiacono, 2019; Stevenson, 2011). Paus-Hasebrink et al. (2019) even found that, regardless of parents' financial resources, all parents increase their ICT equipment when children go to school. This tendency is often studied under the heading of *technology brokering,* in which children are presumed to act as the mediator or broker between a new technology and their parents. This finding suggests that in some situations, the children rather than the parents take, or at least steer, the initiative for implementing a new device or online activity. As highly educated parents are often precursors in adopting and learning how to handle new technologies (Newhagen & Bucy, 2004), children have been mainly found to act as technology brokers within lower socioeconomic status or less educated families (Correa et al., 2015; Katz, 2010). It thus seems that the balance between parental guidance and children's influence differs on the basis of educational backgrounds. Just as with parental mediation strategies, the dynamics and mutual influence between parents and children might change over time, for example, because children grow older or parents become more

experienced through their jobs (Correa et al., 2015), both of which are factors that are also part of the social context.

7.2.5   *Children's domestication in families from different educational backgrounds*

It has become clear that several factors in children's social contexts can influence their Internet domestication, including, among others, their peers, schools (teachers), siblings and, most prominently, their parents. In addition, it is suggested that children themselves also play a role in the way their domestication process takes shape, as they sometimes take on an export or broker role within the home. The question remains what prevails in their domestication processes. Do parents principally affect children's Internet use, or do children largely run through their own process? What we do know is that *educational level* is a recurring determinant in relation to children's Internet use, as it is determinative of the parental mediation strategies applied and is generally decisive in the way in which parents shape their domestication process (chapter 4). Additionally, it has been suggested that children from socially disadvantaged families use the Internet differently than their wealthier counterparts do (Hargittai, 2010; Paus-Hasebrink et al., 2019).

In this chapter, we will depart from differences in family dynamics between less and highly educated families by exploring how parents give meaning to mediation strategies as well as how their children domesticate the Internet as a result. In addition, our aim is to examine other factors that are relevant when children participate in the domestication process in the home. While the educational level of the parents might be a dominant factor, it is likely that children's other characteristics play a role. For example, we have seen that the chances for children to serve as technology brokers increase with age. This study will have an explorative design in the form of qualitative interviews to obtain a better understanding of how children make sense of the Internet. We will begin this study with an inventory of the parents' view on their role in their children's domestication process: what are their standards and thoughts on the different parental mediation strategies? Then, the children describe their Internet use in an interview guided by the domestication process. By interviewing both the parents and the children, we are able to look at both the parents' motives for applying certain strategies and the effects of these strategies, including the children's own thoughts. This approach gives us a better understanding of "the causal relation between parental mediation and children's outcomes" (Nathanson, 2015, p. 136), as only the parents' mention of the strategies applied does not say anything about its repercussions on the way their children

domesticate the Internet. In addition, gathering information via only children might result in sampling and research bias (Valcke, Bonte, De Wever, & Rots, 2010) because it relies on "the child's subjective experience of parental monitoring" (Heim, Brandtzæg, Kaare, Endestad, & Torgersen, 2007, p. 444).

7.3   Method

For the details of the method used in this study, see chapter 3, in which an overview of the participants (characteristics) is included. The questionnaire and corresponding interview questions are attached in Appendix 7a of this chapter. The corresponding scheme used for analyzing the results can be found in Appendix 7b.

7.4   Results

This results section will first elaborate on the less (LEA) and highly (HEA) educated parents' perspective regarding their children's Internet use. Then, the children's view will be discussed following the four phases of domestication. Although we didn't study age differences specifically, some differences between age groups are worth mentioning. Where differences are applicable, the group of children is divided into two and referred to as 'younger children' (aged 9 to 14) and 'older children' (aged 15 to 22).

7.4.1   Parental mediation strategies: types and amount

Although children with ages ranging from 9 to 22 were interviewed, all parents participating in the domestication study were asked about their ideas concerning upbringing and technology for their children. Additionally, for children below the age of 9, many parents were already concerned with parental mediation, as devices are currently omnipresent.

> *"The world is getting increasingly digital. The boys are becoming handy with those devices. I mean*, [son's name] *is three years old, and he knows intuitively how to search for and start a movie clip and how to navigate. [...] That's why they are only allowed to go online*

> *from a certain age on…a child can't set boundaries himself. So we are really aware of it. I think from high school on or so, you can expose them to some more information, but until that time…"* – HEA, male, 45

Active co-use

In particular, talking to their child(ren) about (responsible) Internet use as part of *active co-use* is something that almost none of the LEA-parents do, while this activity is standard for HEA-parents. The goal of having these conversations with their children is for HEA-parents to raise awareness and promote understanding for why children should comply with some rules and regulations.

> *"Well, the three of them have got WhatsApp and we talked about it very extensively, like: what do and don't you put on there, and if you send a message via WhatsApp: how does it come across? And when do you forward a message you received? That's more uh, media literacy. We are very aware, I think. Just to decrease the chance that worrisome things might happen online, for others, but also for the children themselves of course."* – HEA, female, 45

> *"No, we don't interfere with his Internet use. He is serious enough himself; he always finishes his homework first. And well, when he's off, then he is indeed in front of the tablet all day. If he wouldn't do his homework, it would be another story, but well. It's convenient for us, haha."* – LEA, male, 58

Introducing time restrictions as part of active co-use is something both LEA- and HEA-parents do, with the difference that HEA-parents often continue to monitor their children to ensure their adherence to these restrictions, while LEA-parents mostly formulate these rules once without enforcing them as strictly as HEA-parents do. In addition, time restrictions are often formulated for HEA-parents as 'a specific number of minutes per day', while LEA-parents seem to apply general 'end times', for example, an hour before going to bed, which implies that LEA-children generally get to spend more time online. Lastly, staying around or nearby when children are online is common among both LEA- and HEA-parents, but mostly only when it concerns younger children.

> *"She can only listen to one child's song online after dinner. We draw strict lines, so she knows she shouldn't ask for it during the day. She*

*will be exposed to the Internet more than enough in the future, so for
now we try to be consistent and maintain consequences in our rules."*
– HEA, female, 39

*"Yes, the kids have to go to bed at a specific time and they should
leave the phone downstairs. So when it's bedtime, they're not online
anymore."* – LEA, female, 49

Interaction restrictions
Specific *interaction restrictions* are applied by both LEA- and HEA-parents, but LEA-
parents mostly initiate these restrictions after one of their children has already
experienced harm due to a negative incident online, while HEA-parents consider
in advance the activities in which they do not allow their children to engage. This
HEA approach applies to both older children, who do not receive permission to
perform certain online activities, such as online chatting, playing violent games
or sharing *selfies* on social media, and younger children, who are withheld from
using the Internet until a certain age. Another difference is that LEA-parents
often said that they cannot prevent their children from conducting certain online
activities anyway and that they trust their children in complying with the rules,
while HEA-parents seem to return to the rules discussed.

*"And sometimes I see, that one of the boys hasn't shut down a movie
clip correctly [...], then I think: [Son's name], you are only 7! [...]
Yeah, I find that hard sometimes, because people tend to say you
should keep an eye on them, but in practice... I can't monitor them all
day long because when I enter the room then it is: click, gone!"* – LEA,
female, 42

*"Yes, there are certainly restrictions content-wise. This morning, for
example, I saw him watching a GTA-movie clip, apparently for the
first time. Well, that's not allowed and he knows that's a rule from
now on."* – HEA, female, 41

In contrast to the interaction restrictions, some HEA-parents indicated that they
try to stimulate their children to participate in educational games at home during
the time that they are allowed to be online. Thus, these parents seem to be
combining purpose (from the parents' perspective) with pleasure (from the
children's perspective).

Monitoring

Another way to check whether children adhere to formulated restrictions is by monitoring. *Monitoring* is a strategy that parents in both groups apply, although more by HEA-parents than by LEA-parents. LEA-parents often indicated that they used to monitor their children's Internet use 'in the beginning' by checking phones every now and then or by 'walking past', while HEA-parents continue to do so during the appropriation of new types of use, mostly by checking browsing histories or applications in their children's phones. In only a few cases, HEA-parents receive digital reports of their children's surfing behavior as part of monitoring.

> *"We actually assume that he knows he can use the laptop if there's homework to do. But he shouldn't be in his room all evening, because of course I'm not going upstairs all the time to check if he's still on his phone or one the laptop or tablet. That's his own choice."* – LEA, male, 47

> *"Well, my daughter's 8 years old and of course she cannot watch everything unrestricted. There's a very clear rule, that I want to know where you go online, what are you doing, and nothing's guarded. Every now and then, I look into her browsing history. 'Just get used to it', I told her, because I will do so until she turns 18."* – HEA, male, 49

Technical restrictions

Technical restrictions are (intended to be) applied by a minor part of the families, which are mostly HEA-parents who have ICT-related jobs. These restrictions mostly concern parental access to and management of their children's accounts, for example, on social media or school e-mail, so that children's access to content and services remains limited and controlled. Two LEA-parents indicated using a 'Christian filter', which is not customizable but rather adheres to the standards that their religious background requires by filtering unwanted content.

> *"There will be rules eventually. Digital parent control, and every now and then we will scan what the boys do online. We're now monitoring too by the way. If we put on a movie clip on the television, then we can see what they are watching. [...] Periodically looking at what they are doing online might then incidentally lead to a discussion. If you see what all those children are all doing online, then I really think*

*that's worrisome. Those parents haven't got any idea what they're
doing." –* HEA, male, 39

*"Our daughter has to make sure that if she changes the password of
an account, she passes it along to us." –* HEA, female, 45

7.4.2   The absence of parental mediation strategies

Only in the LEA-families parents indicated that there are or were no rules at all
concerning Internet use. Statements made in this context included 'I trust that
my children know when to quit', 'We can't keep them from using the Internet
anyway' or 'We applied some time restrictions at first, but those faded after a
while'. In sum, LEA-parents seem to apply some time limitations that are not too
strict, while most HEA-parents imply the use of a combination of time and
content restrictions, monitoring and (instructive) conversations as part of active
co-use.

*"In the beginning, we did adhere to the rules, but meanwhile, it has
faded a bit. Although I actually find it really important." –* LEA,
female, 46

*"No, I didn't apply rules when the children were young. I have five
children and there were two computers, so they just had to figure
things out with each other. It worked out well. Nowadays a bit less
though, because one of them has got a gaming addiction." –* LEA,
female, 56

*"Well, we all know, you can never keep them from doing so. [...] No,
we did make agreements and we just said: you shouldn't be in front
of a screen all day, that's just not good for you. But I figured that
when laptop time is over, they just continue on their phone. And
that's of course something we can't control. We can formulate rules
that they should leave their phones downstairs, but it's also a matter
of trust." –* LEA, female, 44

In addition, only HEA-parents seem to explain to their children why they monitor
or apply certain rules. This is a tendency that runs throughout all strategies:
HEA-parents mostly explain to their children why certain rules and regulations

are applied and should be adhered to. Many of the HEA-parents said they find it of the utmost importance for their children's development that they spend time offline and outside.

> *"Yes, I'm already delving into the topic. I actually want to prevent the blocking of websites and so on. I rather have them going online and us having conversations about it, than that I have to block things, because then it will only become more interesting. [...] They just need to understand why."* – HEA, male, 39

Thus, there are differences in the way in which parents from different educational groups guide their children in ICT uptake and use. The question is whether these differences are reflected in the way their children domesticate the Internet or whether other factors play a decisive role, such as their school, peers or personal demographics, such as their age. Do changed dynamics and generational differences interfere here? In other words, do children design their own domestication process or are differences indeed being transferred?

7.4.3   Children's domestication process

Appropriation

The majority of children in both groups mentioned they used the Internet for the first time at home, except for some older children. Independent of their age or the educational level of their parents, these home users mostly played games at personal computers (PCs), and a minority used a tablet for this activity. Some of the youngest home users started using the Internet for watching YouTube clips. Children who first used the Internet at school indicated that this was mostly to learn spelling and mathematics through educational games and that use at home was initiated shortly after that. Most older children living at home started using the Internet more gradually, as at home the Internet was probably introduced when they had already developed their personal ranges of hobbies and activities, among which the Internet formed only a minor part of their entertainment since digital learning was not yet part of the curriculum in primary school. Only in the case of a few LEA-families with younger children did children serve as *technology brokers* by demanding a new device (usually a tablet) that was not present in the household yet. However, currently, device brokering by children does not seem to be applicable to many Dutch families, as most families are well equipped.

> *"It started at home, with games at a CD-ROM every now and then. At primary school, we actually didn't have to do a lot of things online. That just started at high school."* – HEA, female, 19

In the process of getting to know the Internet and its corresponding devices, the majority of LEA-children did not receive guidance or help either at home or at school, while HEA-children said they mostly received help or instructions from their parents or siblings when going online for the first time (at home). Also, in later stages of their domestication process, HEA-children said they can still turn to their parents with questions or for help, while LEA-children indicated that they are often more knowledgeable than their parents about the Internet. This tendency is partly dependent on age, as older children in general stated that they are more knowledgeable than their parents who did not grow up with the Internet, independent of their parents' educational level. In discussing the theme of helping within the home, some children mentioned that it also occurs the other way around: these children also help their parents with the Internet. Children taking on this expert role occurs more in LEA- than in HEA-families, most likely because HEA-parents' knowledge still outweighs that of their children.

> *"My parents helped me in the beginning. At school, we didn't receive any help."* – HEA, male, 11

> *"Yes, I do help a lot here at home, especially my mother. For example, on Instagram, how to delete accounts and how to tag people. And my sister with YouTube, searching for clips and downloading them. Actually, I'm sort of the expert here, yes."* – LEA, female, 12

Schools seem to have only a minor influence on children's uptake of the Internet in the appropriation phase, as well as in subsequent phases. Mostly, both LEA- and HEA-children indicated that they did not get an 'Internet class' or some other type of digital skill development, help or guidance, but they also said that such training was not necessary, as all the children were able to perform the activities required, which mostly started with educational games.

> *"At school, we received some instructions just once. Well, sometimes that's handy. But actually I already knew everything, because at home I also receive guidance from my parents."* – HEA, male, 11

> *"At school, it is, for example, about cyberbullying. They tend to say things like, 'Don't give away any passwords', those kinds of subjects. Rather standard things that I already knew."* – HEA, female, 14

Some of the children even mentioned they got or still get bored by the educational games that they had to do in class or that they can better instruct their teachers in terms of digital skills instead of the other way around. Children in both groups mentioned that education on the harms and downsides of Internet use is a topic that their schools only discuss in information sessions about the prevention of cyberbullying.

> *"No, I didn't receive any guidance at home or at school; I just started out myself. Usually, we have to explain it to the teacher, by the way, instead of the other way around."* – LEA, male, 16

> *"At school, we also got digital assignments; those are rather boring. Then you have to finish a maze or something, and if you click that maze away, then you automatically completed it with a 'well done'. So I never feel like doing those assignments."* – HEA, male, 16

Incorporation

Children of all ages and from both LEA- and HEA-families seem to use the Internet for a broad range of social media, for study and school purposes and for playing games. Only younger children indicated using YouTube for watching movie clips of vloggers, gaming instructions or DIY videos, while older children use the Internet for online shopping. Social media platform uses also appeared to differ by age, as Snapchat is more popular among younger participants, while Facebook is more popular among the older participants. However, children's Internet use is also dependent on their families: younger children from HEA-families receive more restrictions concerning social media use.

> *"I do have to ask if I can go online, and I usually don't get permission after dinner. Well, if I played outside the whole day, I usually can."* – HEA, male, 11

> *"No, we actually didn't have any rules at home."* – LEA, female, 17

These restrictions range from not being allowed to use certain platforms (such as Facebook or Instagram) or only being allowed to use the platforms without

having a personal account to not being allowed to post pictures of themselves or personal information on the specific platforms.

> *"I'm the only child at home, so sharing devices, well... [...] Other rules about time spent online for example, there are none really, because my parents know I would quit when they tell me to do so. But I also monitor how long I have been online and how long I want to be online. Eventually, I just stop at a certain point."* – LEA, male, 14

> *"I always have to ask if I can install things on the tablets and stuff. And I cannot talk to people I don't know, because then they can seek all kinds of information about me. But I also don't get permission to use WhatsApp. With WhatsApp, you can only talk to friends or people you know. I'm the only one in the class who doesn't have WhatsApp, I suppose."* – HEA, male, 10

As a result, participating in chat rooms connected to games or specific social media is something that only LEA-children do, which might be one of the reasons why being a victim of a harmful online event – all related to offensive conversations with strangers – only applied to LEA-children.

> *"No, we didn't get information or instructions, I actually did it all on my own in the beginning. After I had made a mistake* [harmful situation], *I did receive information from my mother about what I shouldn't do online."* – LEA, female, 12

Children seem in general well aware of the rules and regulations that their parents apply and can repeat them in a comprehensive manner, but only HEA-children appear to understand why the specific rules are applied, most likely because their parents use instructive conversations to explain their choices. While children of both groups sometimes seek to avoid the rules, for example, by exceeding time restrictions, more HEA-children than LEA-children said that they turn to their parents when they are not sure what to do with undesirable content they encounter.

> *"Yes, my parents do talk a lot to us about the Internet. About hacking for example, and that people then know everything about you. Or about games. And what you shouldn't search for. I do get why we*

have these conversations. What they don't approve, I just don't do." –
HEA, male, 12

*"My parents educated me from the first moment on, maybe because I
was quite naïve when I was little. Not that I would trust someone in
such a way that I would give them all kinds of personal information,
but apparently my parents did think I would be able to do so. That
made me... I'm really aware of and careful with what I do now, online.
So it definitely has its effects."* – HEA, female, 14

Objectification
The places where the Internet and its corresponding devices are used differ for
LEA- and HEA-children, most likely because of (the absence of) restrictions from
their parents. More than HEA-children, LEA-children (are allowed to) have
devices in their own bedrooms. This seems to correspond with the fact that LEA-
children often own devices themselves, instead of using those of their parents or
'the family', and they do so at a younger age and for more types of devices. In
contrast, HEA-children mostly receive their own device(s) when it is required by
school or when it is aimed at being able to reach their parents (emergency), while
they are (technically) restricted in the use of these devices – mostly smartphones
– for other purposes. Devices that children are required to use at school – some
children are in an iPad class – are mostly also used for entertainment in their
spare time at home. In contrast, children in both groups mention bringing their
private devices, such as smartphones, to school. The smartphones that children
own are seemingly never left at home by both LEA- and HEA-children.

*"I have got a smartphone, a laptop, tablet and a PlayStation. Yes, I do
possess those myself; the devices are in my room too."* – LEA, male,
16

*"First, our school was a 'normal' or regular school; we then followed
lessons from the books. Then, it became a Steve Jobs school. So then
everyone received an iPad, when I went to class 6 and my sister to
class 4. We can also take it home. Except for the school iPad, I don't
use any other devices."* – HEA, female, 11

Conversion
Because 'the Internet' appears largely integrated into most children's lives, they
logically interact with others outside the household about this technology.

However, for many of the younger children, personal meanings and opinions about the Internet do not seem to be fully established yet: they often found it hard to put into words what being able to go online means to them or to even describe what 'the Internet' actually entails. Therefore, children's changed Internet meanings as a result of interactions with the outside world are difficult to deduce.

Interactions with peers concerning the Internet mainly seem to take place while being online simultaneously, as some children mentioned playing games with friends while being at (their friend's) home. While the majority of both groups said that they broadly engage in the same activities as their friends do, the ones who indicated dissimilarities in the activities performed did not seem to feel the need to impress or imitate their friends. This is most likely the case because for most of the children, 'the Internet' is not regarded as an object but is largely integrated into their lives, and conscious meaning formation does not often occur with their peers.

> *"My friends do use Snapchat and Instagram, but I don't and I'm like, 'Okay, I can't join the conversation, but that's okay, because I've got other things to talk about.'"* – HEA, female, 14

> *"My friends are allowed to do all kinds of games at home. I would like to do that as well, but I haven't got permission from my mom. And I do understand why, because it's addictive, so it's okay."* – HEA, female, 9

The largest part of meaning formation and -change is likely to take place at home, when children and parents negotiate about rules and regulations or new devices as well as when parents explain to their children why some Internet activities should be avoided or why some Internet rules merit adherence. For the majority of HEA-children, changed meaning formation takes place as a consequence of their parents' active co-use: while they desired to engage in the same online activities as their friends in first instance, they changed their opinion after negotiations with their parents.

In addition, for some of the older children, the processes of changed meanings apply, as they indicate that online activities are no longer among their favorite forms of entertainment, although they used to be while they were young and online applications were still new to them. This tendency is most likely a consequence of becoming an adult and adopting a different perspective on the value of interacting via the Internet.

"You see those toddlers and young children being focused on the devices, instead of paying attention to each other." – HEA, female, 18

"In the beginning of high school, I used social media a lot, but this use has toned down over time. I realized I just like face-to-face contact better, one-on-one or in small groups." – LEA, male, 19

"I often feel like I should be online a little less. [...] Some weeks ago I went on a survival weekend with my study association, we had no electricity. When I came back, I thought, 'Why do I use my mobile phone anyway?' The social contacts were more pleasant, because we weren't interrupted by phones all the time." – HEA, female, 18

7.5   Discussion

7.5.1   *Main findings*

This chapter aimed to explore how children domesticate the Internet while being influenced by their less or highly educated parents and other sociocontextual factors.

First, parental mediation strategies differ between LEA- and HEA-parents. In general, HEA-parents apply more types of strategies than LEA-parents do, often have a stricter interpretation of those mediations by the rules they formulate (e.g., concerning time restrictions) and are also more firm in controlling compliance with those rules: they try to guide their children's (non-)use from a very young age. HEA-children's first encounter with the Internet is postponed as long as possible and kept to a minimum in terms of the time spent and number of activities. For example, some of these toddlers are only allowed to watch one or a specific YouTube clip while brushing their teeth or to read a bedtime story from an iPad. Additionally, HEA-parents have the tendency to explain to their children why certain rules are applied and why some online activities should be avoided, which is a practice that LEA-parents do not usually perform. These findings are in line with those of previous literature, showing that highly educated parents apply more types of mediation strategies (Livingstone & Helsper, 2008) in efforts to actively support a safe and responsible way of using the Internet through conversations (Paus-Hasebrink, Ponte, Dürager, & Bauwens, 2012). In addition,

differences in parental mediation might exist because HEA-parents place greater value on the role of offline spare time for the development of their children, just as they do so for themselves (chapter 4), as opposed to LEA-parents, who spend more time online in their spare time (Van Deursen & Van Dijk, 2014) and often have more positive attitudes about media and the Internet (Njoroge, Elenbaas, Garrison, Myaing, & Christakis, 2013; Radesky, Silverstein, Zuckerman, & Christakis, 2014).

The divergent ways in which parents try to guide their children in making the Internet their own seem to influence the way children value and regard the Internet throughout their domestication process. While the purpose of initial Internet use and the choice of corresponding devices in the *appropriation* phase also seem dependent on children's age, first-time encounters differ in the way children are supervised: while LEA-children often have a free hand in finding their way and spending their time online, HEA-children receive instructions, help and guidance during their initial use *at home*. This parental guidance is mirrored in subsequent domestication phases. As HEA-children are only allowed to use the shared devices they need and are not allowed to 'own' them at a young age as part of *objectification,* their approach developed during the initial stages of domestication seems largely profitable during the *incorporation phase*: used for homework or 'useful' entertainment, for only a specific amount of time, while remaining time should be spend on offline entertainment. In contrast, LEA-children can fill in their own online time in a relatively unconstrained manner. Presumably (largely) stemming from their parents' active mediation, HEA-children understand why they are restricted to entering specific websites or social media. Therefore, they seem to be better able than LEA-children to estimate why they should or want to carry out certain Internet activities. This manner of approaching the Internet by HEA-children, which LEA-children do not seem to adopt, appears to persist as they grow older. As a result, HEA-children mostly turn to their parents when they encounter something unfamiliar online that they do not like and therefore are less often in harmful situations, which some LEA-children do encounter.

With regard to other sociocontextual factors, most schools do not seem to take responsibility when it concerns their pupils' Internet education. Although there are differences in the extent to which children are expected to use digital devices at school, children from both groups unanimously indicate that they do not learn much at school about navigating the Internet, understanding its downsides or developing digital skills. Peer influence, of classmates or friends, seems mainly relevant in the *incorporation* phase, in which the majority of children in both groups indicate broadly conducting the same online activities as

their peers. However, when children report deviations in the activities they engage in and those of their peers, they mostly do not mind the differences or indicate that they understand why they differ from their peers in what they do online. Exchanging tastes and values with peers as part of the *conversion* phase probably takes place rather unconsciously and for younger children only, as they conduct activities online together while meeting with friends.

As the 'open' Internet and portable devices currently make it relatively easy for children to choose their own online activities compared to the way it used to be with offline technologies such as television, children are presumed to be more autonomous today. However, children's own influence and initiative in the domestication process seem limited for both HEA- and LEA-children, as the foundation is laid at a young age at home and later complemented with some peer influence. Additionally, *technology brokering* appears to be a tendency of earlier times, when there were still differences in material access.

Although we should be careful in making explicit statements on the basis of this explorative study, the different processes that HEA-and LEA-children go through seem to be influenced at home by their parents. As HEA-parents adopt a reflective approach in their own domestication process, the parental mediation strategies they apply are often thoughtful and well considered, while LEA-parents' strategies could be described as less restricted. As a result, compared to their LEA-counterparts, HEA-children seem to use the Internet in a more calculated way and seemingly even value their offline spare time more. In addition, because HEA-children have more access to (parental) expert knowledge, they are more likely to develop their digital skills at home. If these clues indeed indicate that children mirror their parents' domestication process, the future seems less bright for LEA-children than for HEA-children in terms of positive and negative outcomes they obtain from Internet use. Therefore, we should bear in mind that digital inequalities will be transferred from parents to children and that this finding is yet another dimension of exacerbating social inequalities.

Digital inequalities between children are a complex issue, as the disparities derive from their parental-rooted background, while embedded in a larger milieu (e.g., upper- or middle-class culture) that also includes influences of school and peers. These results confirm that with educational level, we measure more than having or not having a certain grade. Therefore, a straightforward solution or one that fits all does not seem to be at hand. However, the results provide directions for the interventions that policymakers could formulate. First, policies should be targeted at increasing schools' attention to digital skills and media literacy in general (Thijs, Fisser, & Van Der Hoeven, 2014), as children indicated that their schools and teachers did not play any or only a minor role in their

Internet appropriation. Furthermore, Internet education at schools should depart from children's divergent origins, instead of adhering to a 'one-size-fits-all curriculum'. Children from all backgrounds should be supported and enabled to develop their Internet skills and use in a way that fits their personal entry level. By starting these interventions at an early age, children may eventually even transfer some of their acquired skills, awareness and coping strategies to their parents and correspondingly influence their domestication process.

7.5.2   Limitations and future research

This study was explorative, as the results and conclusion were based on a sample of 25 children with diverse personal characteristics, such as age, gender, (stage of) education and family composition. Therefore, the results and conclusions should be interpreted with caution, and generalizations to larger populations should only be performed after large-scale repetition of this study. Preferably, the results should first be validated through a survey study based on a larger sample.

Some elements of the domestication process, such as the initial use of the Internet, may be dependent on age. Therefore, parts of the Internet domestication process of children (and adults) are likely to change over time as new cohorts of children and 'digital generations of parents' are studied (Colombo & Fortunati, 2011; Hasebrink, 2014). Potentially any and all determinants discussed, such as parental influence through mediation strategies or the school environment, might be reconfigured to changed meanings and ways of operating compared to earlier times (Livingstone, Mascheroni, & Staksrud, 2018).

Although we had profound reasons to look at children's domestication processes as being influenced by their *parents'* educational level, children's own educational level might become more relevant as they grow older (Paus-Hasebrink et al., 2019). However, this process will evolve now that the Internet has become even more embedded into children's lives in increasingly taken-for-granted ways; the question is when their own educational level starts to 'take over'. Different scenarios could be conceivable. As children of highly educated parents already seem to be advantaged, this head start might be reinforced when they enjoy higher education themselves. As another scenario, children of less educated parents benefitting from higher education at a later age might compensate for the disadvantages imposed because of their family's socioeconomic background. Future research is necessary to explore this question.

Finally, the role of peer influence in children's domestication processes could be further explored, as we primarily took a parent-child perspective in this study. There seems to be some role reserved for peers in influencing the activities that are conducted by primary and secondary school children in particular. However, it is difficult to precisely map this influence without simultaneously taking into account the peers' perspective, as we relied on interviews with individual children only. Though, just as for parental influence, peer pressure can be expected to have a stronger effect on some than on others. Although peer influence seems to be more unconscious than that of parents, further exploration of the peers' stake is needed.

Appendix 7a. *Interview questions round 5: children*

1. Which digital devices do you use?
   - Where did you go online for the first time? (Help: at home, at school, or somewhere else?)
   - Do the devices used differ between home and school? If so, how?
2. Do you own specific devices yourself, or do you use others' devices? (Help: e.g., your parents')
3. Do rules apply at home which you should adhere to? (Help: e.g., think of: how long you can go online/use a device, if and how devices should be shared, which websites/apps you can use, if your parents can monitor you, etc.)
   - What do you think of those rules?
   - Do you understand why you should comply with the rules? Please explain.
   - Do you (sometimes) do things to go around the rules? If so, in which way?
4. Which activities do you mostly conduct online?
   - What does [specific activity] mean to you?
   - Do you also conduct [specific activity] offline/without the [device]? What makes the difference?
5. Do you (sometimes) help your parents or siblings? Do they help you (sometimes) when going online?
   - Can you explain how this help is usually carried out? Do you have a recent example?
6. Do you go online simultaneously with friends? If so, what does this look like?
7. What do you think of 'the Internet'?
   - Do you like to spend time online? Do you think it is convenient?
   - What do you see as the advantages of the Internet? (only for older children)
8. Do you see downsides of the Internet? If so, which ones? (only for older children)
   - Did you experience this downside yourself? Do you try to prevent this downside?
9. How would you feel about having no Internet connection anymore?

Appendix 7b. *Analysis interviews children*

Theme	Answer	Code
Device used (A)	Tablet	A1
	Pc	A2
	Laptop	A3
	Smartphone	A4
	Other	A5
Place initial use (B)	Home	B1
	School	B2
	Friend's home	B3
	Other	B4
Ownership (C)	My own	C1
	My parent's/s'	C2
	Shared with siblings	C3
	Other	C4
Rules (D)	Time online	D1
	Duration online	D2
	Activities	D3
	Other	D4
Opinion	I don't like these rules	D5
	I don't understand why these rules apply	D6
	My friends don't have to adhere to these rules at home either	D7
	I don't have an opinion about the rules	D8
Ignoring	I try to go around the rules sometimes	D9
	I don't adhere to the rules anyway	D10
	I always comply with the rules	D11
	Other	D12
Help (E)	My parents (still) help me	E1
	I receive help at school	E2
	I receive help from my siblings	E3
	I'm the one who helps [insert]	E4
Online activities (F)	Gaming	F1
	School-related activities	F2
	Vloggers/bloggers	F3
	Shopping	F4
	Other	F5
Company	On my own	F6
	With siblings	F7
	With friends	F8
	Other	F9

Opinion (G)	I like the Internet, it's my favorite hobby	G1
	I like the Internet, but I also like to do other things in my spare time	G2
	I don't really like to spend time online	G3
	I don't have an opinion	G4
	Other	G5
Downsides (H)	Bullying	H1
	Not playing outside anymore	H2
	Less social contacts	H3
	Other	H4
Own experience	Not experienced myself	H5
	Did experience myself	H6
	Seen it happen to peers	H7

08
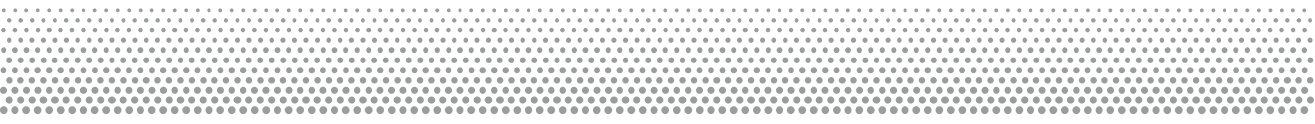
General conclusions and discussion

8.1   Introduction

Although social inequalities are high on many political agendas, policy makers barely pay attention to the role of technology in policies that aim at diminished social inequalities (Van Deursen & Mossberger, 2018). Digital and social inequalities are mostly studied separately. In addition, interventions aimed at diminishing digital inequalities nearly always focus on providing material access and digital skills, while little attention has been paid to Internet (mainly excessive and mis-) use and outcomes. However, in digital inequality research a connection between social and digital inequalities has been theorized, and a call for a focus on the outcomes of Internet use has emerged in recent years. Heeding that call, this contribution aimed at a deeper understanding of digital inequalities, by exploring the Internet domestication processes of the less and the highly educated. Correspondingly, the outcomes resulting from those processes were mapped and contextualized.

This dissertation demonstrated the relevance of a qualitative approach for digital inequality research, especially when focusing on the appropriation of digital media in the context of families' daily lives. In doing so, the approach proved useful for identifying differences in outcomes, ultimately unraveling how social inequalities are associated with digital inequalities. The systematic review (chapter 2) provided us with important determinant(s) of Internet skills, uses and outcomes that can be considered in empirical studies. The formation of inequalities within different domestication phases was uncovered in both the interviews with family heads (chapters 4-6) and in the interviews with children (chapter 7), showing the complexity of (social) inequality formation when mediated by digital inequalities.

The empirical studies make several contributions to existing digital inequality research. Including sociocontextual factors by applying a qualitative approach that forms the basis of this dissertation, affirms that this way of studying digital inequalities provides more in-depth explanations for *why* digital inequalities exist than is possible through quantitative studies alone. We aimed to unravel the outcome divide by providing these explanations through studying domestication in the daily lives of families, therewith meeting the research goals as set out in the general introduction (chapter 1).

8.2   Determinants of Internet skills, uses and outcomes

As the majority of digital inequality research has hitherto taken a quantitative approach to inequalities, a plethora of determinants that are decisive for the first-, second-, and third-level digital divides can be found in the literature. We aimed to make sense of the multitude of determinants by means of a systematic literature review to determine in which parts of society these digital divides actually manifest, to eventually tackle digital inequalities at their roots. By conducting this review we met the first research goal:

> *To compose a comprehensive overview of determinants of Internet skills, uses and outcomes mentioned in the digital divide literature from 2011 on, to determine who is most prone to benefit from or be disadvantaged by the Internet.*

From the review, it became evident that the focus within digital inequality research has since 2011 mainly been on identifying socioeconomic factors of Internet skills, uses and outcomes. *Educational level* was shown to be a prominent determinant of differences in Internet use and outcomes. It served as a selection criterion for our empirical studies. With the identified determinants, the review not only enabled us to pinpoint who is in an (dis)advantaged position in terms of skills, uses and outcomes but also confirmed the lack of sociocontextual factors considered in digital inequality research. Sociocontextual factors (e.g., social norms, material circumstances, work or school environment) are especially useful in seeking explanations for why inequalities exist, as they comprise structural characteristics that are not inherent in and unique to the individual but are likely to have effects on the way someone deals with and interacts about the Internet. These factors have been largely neglected in digital inequality research until now, as studying larger populations takes less effort through common quantitative surveys. Although the usefulness of the determinants identified within previous digital inequality research is undisputed, the role of the determinants can only be fully explained through qualitative approaches, for example, by adding meaningful interpretations to the mechanisms of the domestication process in micro contexts (the household/family).

8.3 Sociocontextual explanations of digital inequality: A qualitative approach

After unraveling factors that determine differences in Internet skills, uses and outcomes, we aimed to explain *why* these factors are decisive. Our second research goal was as follows:

> *To find explanations for why differences in Internet uses and outcomes exist. [...]*

In the quest for those explanations we applied domestication theory (Silverstone, Hirsch, & Morley, 1992). As the theory considers how the Internet is integrated into one's daily life, it proved to be a useful framework for retrieving additional sociocontextual information. The theory was especially valuable for its ability to capture the diversity of Internet users and how the Internet is immersed into their culture and values (Hynes & Rommes, 2005). The theory enables to grasp (changing) meanings and motives as well as social consequences of Internet use and the understanding of trade-offs that are made between the Internet's pros and cons (Hynes & Rommes, 2005). Applying domestication theory by means of qualitative interviews in micro contexts enabled to shed new light on the influence of sociocontextual factors on digital inequalities that would most likely not have been captured when using other theories. As domestication theory focuses primarily on domestic factors and relationships, we included other components, such as the work- and school environment, in our analysis, as these are also likely to play an important role in the domestication of technologies (Richardson, 2009).

Combining qualitative interviews based on domestication theory with quantitative data from the systematic review, enabled us to demonstrate that *educational level* is more encompassing than just a standalone sociodemographic reflecting people's schooling. Educational level underlies sociocontextual factors that are decisive for the way people appropriate new technologies, such as one's *habitus* and *lifestyle*; the latter is the systematic product of the habitus and is composed of *lifestyle choices,* a form of agency, and *lifestyle chances,* which are determined by one's class position. As Vuyk (2017) argues, when we control for educational level, we also account for other factors behind that level, such as job type and family composition. The findings reveal that the *habitus* – the mental structure that predisposes individuals to a certain way of routinely thinking and acting – serves as a driving force behind different ways of domesticating the

Internet between the less and the highly educated. Both groups domesticate the Internet in a way that fits their lifestyle (including work demands, family routines and leisure): the less educated regard the Internet and its applications as much more instrumental than the highly educated, who often have a reflective approach and use the Internet more for exploration. In addition, the less educated rarely anticipate the outcomes of their online activities, while the highly educated usually weigh the consequences of their Internet use. The different habitus not only lead to characteristic differences between the two groups in the way they engage with the Internet, and therewith in the outcomes they obtain, but also in how they assist their children in a digitalized world. Throughout all four domestication phases, this habitus accounts for a more or less reflective approach. This approach influences how different motives for purchasing devices and initial use are critically weighed during the *appropriation* phase by the highly educated, while the less educated tend to follow the masses. During the *incorporation* phase, the integration of the Internet into daily life differs between the two educational groups, in terms of considerations regarding the value and usefulness of online activities, which only highly educated contemplate, as well as the rules and regulations applied. The highly educated are highly engaged in applying parental mediation strategies: they are likely to adhere strictly to a large number of strategies and monitor compliance with the rules, while the less educated seem to apply fewer mediation strategies in the incorporation phase, which is in line with previous findings on the influence of education on parental mediation (Livingstone, Mascheroni, Dreier, Chaudron, & Lagae, 2015). In the *objectification* phase, which concerns the spatial aspect of domestication, few differences between the two groups are extant. However, this fact is likely to be influenced by the relatively mature stage in which the Internet is in; this might change when new Internet-related technologies are appropriated, such as wearable smart devices. Because of these disparities in the approaches Internet users take, the highly educated consciously change meaning during the *conversion* phase in which users might adjust their Internet meaning, values and activities. For the highly educated, this conversion even leads to partial and specific disconnection at times, while the less educated do not discern many differences.

As we were able to identify the different approaches throughout the domestication phases, applying domestication theory illuminated the importance of habitus for the way digital inequalities arise and persevere. The results affirm that educational level does not only translate in relevant economic capital in terms of relevant resources, such as salary or the possession of digital devices; cultural and social capital are just as important for one's way of domesticating

the Internet. This dissertation confirms the importance of Bourdieu's work for digital inequality studies, because it explains why educational level is decisive for differences in the domestication process: people with similar educational backgrounds behave similarly online on the basis of their ingrained habitus and in correspondence with their lifestyle. Habitus translates into one's stock of digital capital – "the reach, scale, and sophistication of his or her online behavior" (Ignatow & Robinson, 2017, p. 952) – and allows us to grasp how individuals domesticate and make sense of the Internet and, in the end, how digital inequalities take shape.

8.4   Relevant context: The individual's environment

Incorporating sociocontextual factors by means of domestication theory demonstrated the relevance for digital inequality research of broadening the perspective beyond that of the individual. This dissertation underlined that an individual's (perspectives on) Internet use should not be studied in isolation but should always regarded simultaneously with the perspectives of relevant others. Concerning the context of this dissertation, making meaningful sense of the Internet-related mechanisms between parents and children was only possible when both the parents' and the children's perspectives were considered. Through these complementary data, chapter 7 demonstrated that children's Internet domestication is largely dependent on the way their parents approach the Internet. While previous contributions looked at what parental education means for the mediation strategies applied, and at the influence of parental mediation strategies on children's risks and opportunities when going online (e.g., EU Kids Online Project, Livingstone & Haddon, 2009), we built on this work by combining the parents' and the children's perspectives in mapping all four phases of the children's domestication process. The parental mediation strategies that highly educated parents apply result in children who are aware of the Internet's risks and opportunities, but also of the value of offline spare time, and they seem to behave accordingly. Children with less educated parents 'copy' their parents' Internet approach, as they are less likely to think about the consequences of their online behavior beforehand because few mediation strategies are applied in these families. These results underline that children's socialization with regard to digital media use mainly takes place *within* their upbringing for highly educated

families (vertically) while less educated parents leave it to schools so that socialization mostly takes place outside the household and (also) happens through, for example, peers (horizontally) (Micheli, 2015).

In terms of methodology, the findings confirm the importance of including children in digital inequality research if we want to fight digital inequalities (Livingstone & Haddon, 2009; Lobe, Livingstone, Olafsson, & Simões, 2008), as it showed that disparities can also be transferred to children. Although we mainly studied this process as directed from parents to children, it is likely that such interactions also occur the other way around. Some indications were already pinpointed in chapter 7, for example when parents indicated that they learned from their children or were influenced by their children's demands in purchasing new devices, which implicates consequences for the parents' domestication process. While this way of 'approaching the individual' is inherent in domestication theory, it also highlights the need for parental mediation studies to take into account that the effects of the strategies studied can only be objectively measured when regarded in context.

8.5   Outcomes of Internet use

After establishing how digital inequalities between less and highly educated Internet users originate, it is imperative to unravel what digital inequalities actually consist of. In doing so, the third research goal was met:

> *To shift the focus to the third-level digital divide in the family*
> *context by comprehensively identifying which positive and negative*
> *outcomes of Internet use determine those digital inequalities.*

To map the third-level digital divide comprehensively by incorporating both positive and negative outcomes of Internet use, the corresponding fields model (Helsper, 2012) served as a useful starting point for typifying potential positive and negative outcomes in the personal, economic, social and cultural domain. It became clear that outcome inequalities between the less and highly educated exist in all domains of society. Concerning positive outcomes, the highly educated are generally more successful than the less educated in acquiring benefits in the personal, cultural and economic domains. At the same time, the aim of the highly educated is to diminish their time spent online and promote time spent offline and outside, mostly as a matter of (family) values (Livingstone et al., 2015). This

'disconnection' is conscious and voluntarily and comes at the expense of outcomes in the social domain. Just as for the positive outcomes, differences in negative outcomes strongly link to the approaches that the less versus highly educated adopt: the less educated face broadly the same negative outcomes as the highly educated in all four domains, ranging from financial fraud (economic) and social pressure (social), to online discrimination (cultural) and mental health issues (personal). However, while the highly educated are relatively more devoted to diminishing the impact of the negative outcomes by the coping strategies they apply, the less educated are less likely to compensate for the outcomes they face; therefore, their impact is likely to be greater. These results demonstrate that the highly educated benefit more from the Internet than the less educated, thus not only mirroring, but also exacerbating social inequalities.

While the corresponding fields model proved to be a useful framework for categorizing the identified positive outcomes of Internet use, it was more difficult to sort the negative outcomes mentioned by the participants. For example, some of the negative outcomes seem to correspond to both the personal and social fields. Negative outcomes are rarely considered from a digital divide perspective. Moreover, even fewer contributions regard the negative outcomes comprehensively (e.g., Blank & Lutz, 2018; Gui & Büchi, 2019). There is a need to develop new and expand existing frameworks to more comprehensively study positive and, especially, negative outcomes. The findings also demonstrate that the mere focus on beneficial Internet use within the third-level divide is alarming: inequalities in negative outcomes of Internet use are also extant and cause a decrease in offline outcomes (Van Dijk, 2019). Thus, both positive and negative outcomes of Internet use reflect offline disparities. In addition, by identifying the outcomes through a qualitative approach, sociocontextual data indicated that the way that people anticipate and cope with both positive and negative outcomes stems from their ingrained habitus. Systematic differences in how people domesticate the Internet are thus far from dependent on mere access, skills or types of uses alone but are extant throughout all domestication phases and comprise an underlying (cultural) problem. Although this dissertation only dealt with a tip of the iceberg, it not only shifted the focus to the third-level digital divide, but also demonstrated and underlined the need to further unravel this divide. At the same time, we need to stress that the first- and second-level digital divides are still highly relevant. Without knowing people's (changing) motives for and modes of online behavior, it is hard to determine what leads Internet users to finally arrive at a certain set of outcomes that influences their offline resources.

8.6   Practical implications

Tackling digital inequalities with the ultimate goal of diminishing social inequalities is a complicated task. By incorporating sociocontextual factors in studying the way that people make the Internet their own, this dissertation uncovered the complexity of digital inequality: it cannot be accounted for by regarding the individual in isolation. Factors that are less tangible, but ingrained and decisive for digital inequalities, such as one's habitus, should play a role in this process of diminishing inequalities. In addition, policies should simultaneously address all three digital divide levels so that interventions ideally focus on mapping the challenges, which vary by educational group in terms of economic, personal, social and cultural outcomes (Van Deursen, 2018). Outcomes relevant to the target group should thus be taken as a guideline; then, corresponding devices, skills and usage types can be determined for each potential outcome and each educational group. An integral approach is needed that takes into account the differences between educational groups in these challenges.

- ▪ *Raise awareness through national campaigns.* To begin, interventions should aim at creating outcome awareness. Our findings indicate that it is not just a matter of offering Internet courses to compensate for differences in education; a certain mindset must be stimulated to realize what the Internet affords. This is a mindset some already have: the highly educated who take a reflective approach. For those who do not have this mindset, awareness should be created. Many people do not know about specific online activities and opportunities or how to reach them. When Internet users do not know what they are missing, in terms of positive outcomes, or what they risk, in terms of negative outcomes, logically their approach will not change. Therefore, relevant outcomes should be taken as a starting point to involve people in awareness interventions, as these can trigger people's motivation. As our results show that the less educated often do not discern online risks and therefore do not recognize that they should act upon negative experiences, campaigns are less likely to be effective when focusing on the (possible) negative outcomes of online behavior. However, the majority of recently launched governmental campaigns do pinpoint – at least in The Netherlands where this study took place – the negative consequences of Internet use, for example, related to fake news or phishing emails. To appeal to people from all social strata, including

the less educated, the threshold should be lowered by underlining the positive outcomes of Internet use, especially because the less educated often have positive impressions of the Internet as an instrument. Negative outcomes can be included, without taking them as a starting point or directly focusing on them. Within these campaigns, it should be clear which action people can take to arrive at the relevant positive outcome, while at a same time the campaigns should address what people should be aware of 'on their way' to reaching this outcome, in other words, which negative outcomes they risk. This second part could specifically be aimed at raising awareness regarding coping strategies for negative outcomes to increase citizens' digital resilience (Vandoninck, d'Haenens, & Roe, 2013).

- *Support the development of digital skills.* For specific groups in society, skills development in the appropriation of the Internet still remains highly relevant (second-level divide). First, from our study it appeared that there is a group, mainly composed of adults, who have difficulties finding their way online at work, as they are less educated and did not receive Internet education at school because of their age. For these individuals, it is not a matter of motivation but a lack of skills, though employers mostly assume their (young) employees have already learned a sufficient level of skills in private spheres (Van Deursen, 2010). Additionally, ICT-related courses in the labor context often involve the use of very specific, job-related applications offered from the employers' perspective. However, more general Internet-related courses and training at work could enhance skills for information-related professions and steer productivity in general. Grants and subsidies provided by the government could stimulate such initiatives in business. It is recommended that an inventory be made of each employee's skills when entering a company, to step-by-step improve adults' skills through the labor market (Van Dijk & Van Deursen, 2014).

- *Provide facilities for the less educated (and minorities).* Some Dutch municipalities (e.g., Amsterdam) take on initiatives to stimulate infrastructural facilities within neighborhoods, such as providing community centers with specific numbers of high-quality devices that citizens can use. These interventions can be linked to the appropriation phase of domestication. This kind of intervention might be very useful for some geographic areas in the Netherlands, as well as in other countries, for example, for elderly individuals who do not see the need to invest in all kinds of devices that they do not understand or for

districts where inhabitants live below the poverty line. This intervention aiming at the first-level digital divide, might in turn also provide useful insights into meeting locations for those who are lagging behind in terms of limited skills or knowledge and are unemployed (second-level divide). The latter might come in the guise of a 'buddy' or accessible courses at home or the community centers. Getting acquainted with the possibilities of the Internet and the risks users might face are potential themes that can be addressed. These infrastructural facilities might also form a fruitful entry point for raising less educated parents' awareness regarding the importance of educating their children about the risks and harms of going online; buddies can give guidance on how to start. More generally, (local) governments are eminently the way to reach less educated families to increase skills, uses and outcome awareness. By all means, policy makers should disregard the assumption that Internet skills, use and outcome 'problems' are solved after home access and devices are omnipresent.

- *Involve and support schools.* Third, as we have seen that inequalities are already shaped at a young age, it is necessary to take interventions beyond the adult population and start as early as possible in educating children at primary schools. Taking the Netherlands where the research for this dissertation was executed, as a point of reference, little attention is paid to Internet education at this moment, and when there is, it is fragmented and lacks coherence (Meelissen, Punter, & Drent, 2014; SLO, 2017; Thijs, Fisser, & Van Der Hoeven, 2014). Often, the curriculum provides schools and teachers with the time to give their own interpretation to digital literacy, but offers little direction and stimulation, which schools do seem to require (Thijs et al., 2014). Concerns regarding this point are expressed by organizations such as the Dutch national expertise center for curriculum development (SLO) as well as in statements that the children in our samples made. Some children said that they outperform their teachers on Internet skills in general, while others indicated that attention is mostly paid to the dangers or risks of the Internet but not (or less) to improving skills. The expectations are that the current situation is not better in similar, highly developed or in less developed countries. While (local) governments and professional organizations are engaged in formulating new curricula with digital literacy at their core for both primary and high schools, that are commissioned by the government, it

is essential to avoid the common pitfall of a one-size for all curriculum: 'customization' is required. As the results show, children from different backgrounds have different starting points as they enter school, and these divergent levels of digital literacy require different treatments. As soon as children start primary school, inventories should be made that indicate whether pupils possess an adequate level of Internet skills. Preferably, both the pupils and their parents should be involved in this process, to ensure that both the pupils' backgrounds and their objective knowledge and skills are combined in determining their entry level. By repeating these inventories each school year, pupils can join at their own level while being guided towards an adequate level of Internet skills and uses. While the customization of (parts of) the curricula seems a labor intensive and costly investment, when pupils are classified into groups on the basis of their entry level, curricula can be reused and adapted. This educational intervention should start with 'teaching teachers' to make them aware of the diverse groups of children they teach in terms of digital skills and uses as well as to control for their own (didactic) literacy levels. Finally, newly formulated curricula should not only focus on children's basic Internet education in the school context, but also on their media literacy, including coping strategies for negative outcomes.

8.7   Limitations and future research

In addition to the limitations of each individual study as discussed at the end of the corresponding chapters, some general limitations of this dissertation should be addressed. Accordingly, several suggestions for future digital inequality research are proposed.

First, there are some necessary considerations concerning *educational level* as a selection criterion, which was used as a proxy for socioeconomic status (SES) in recruiting participating families. Although educational level serves as a reliable derivative of SES, one's income and profession could add to more comprehensively measuring SES (Shavers, 2007). One's profession can for example, in light of digital inequalities, cause an enhanced level of skills needed to obtain a broad range of outcomes (Van Deursen & Van Dijk, 2009). In addition, educational level was operationalized as *less* and *highly* educated. Because of this binary distinction in educational level, the results were outlined as two extreme

domestication approaches. This approach was chosen to increase the likelihood of revealing important differences in domestication between the participants. However, differences between the cohorts would vary more gradually when incorporating *intermediate educated* Internet users. While the choice of *educational level* as a selection criterion throughout the interview studies was substantiated by means of the systematic literature review (chapter 2) and proved to be highly relevant to the differences found, the review also showed that other factors play an important role. As we have seen in chapters 4, 5 and 6 for example, the participant's age seems to play an important role in the way the domestication process is given shape, especially when we compare how children (chapter 7) and adults (chapter 4) give meaning to the process. Future research is needed to incorporate more sociocontextual determinants, such as factors that relate to one's work- and school environment, and to examine their prominence over time, to provide a more elaborate picture of the domestication process. In addition, with regard to the interaction between parents and children, in chapter 7 we suggested that the influence of educational level could also change over time. While we have seen that, for children, *parental educational level* is decisive in the domestication process, the question is whether and when their own educational level – which might well be different – starts to take over. For that matter, scholars do not agree: some claim that disadvantaged children can detach themselves from their predisposed origins (e.g., Siraj-Blatchford, 2010), while others state that children are doomed by their backgrounds (e.g., Eccles, 2005). Both viewpoints could make sense, especially when bearing in mind that children nowadays get more chances and stimulation in general, for example through governmental grants and loans, independent of their parents' income. When adolescents start to make different lifestyle choices on a later age, for example because of a changed social network, their Internet appropriation might accordingly adapt.

Second, while there is a strong need for qualitative research in the field of digital inequality, caution is needed in generalizing the mechanisms found. Future research is encouraged to validate the disparities on a larger scale, for example by transforming the decisive factors uncovered in this contribution into surveys. While we aimed at capturing nuances between educational groups instead of generalizations, as the results of the interview studies are based on two relatively small samples of families, one must be careful with the generalization of the results to larger populations at this point, because results are context- and case-dependent (Patton, 1999). All the interviews were conducted in *Twente*, the Eastern region of the Netherlands. As digital inequalities take different forms in less-developed countries, a replication of the interview studies would be likely to

deliver different outcomes outside Western Europe, where disparities between less and highly educated people are much larger in terms of offline resources that affect their physical Internet access and Internet skills, uses and outcomes. However, even within the Netherlands the findings may differ somewhat, for example when urban-rural dimensions are included by comparing metropolitan residents with inhabitants of rural areas (Hindman, 2000). Therefore, digital divide scholars are called upon to repeat this study in a quantitative manner to determine whether ways of domesticating the Internet indeed differ largely across educational groups in different geographic areas. Quantitative survey questions should preferably include statements on the users' sociodemographics and domestication processes, including lifestyle and habitus, followed by statements of potential positive and negative outcomes that participants encounter. That being said, quantitative and qualitative research should be regarded as complementary and preferably applied cyclically, as can be illustrated by this contribution: previously executed quantitative research was reviewed (chapter 2) and used as input to take educational level as the point of departure. Subsequently, we performed qualitative studies to explore in-depth the meaning of that quantitative data (educational level). Therefore, we specifically aimed to understand the microprocesses that are at the root of digital inequalities (applying domestication theory in interview studies) by analyzing the underlying mechanisms of educational level determining inequalities. To continue the cycle, these qualitative data deliver new insights for guiding (quantitative) future survey research towards useful questions. This contribution ended at the second step; now future research is encouraged to take the next step.

Third, by conducting interviews we relied on the retrospective accounts of the participants to map their domestication processes and corresponding Internet outcomes. Other than the fact that most adult participants had to rely on their long-term memory for a description of first Internet encounters, as the Internet has become increasingly embedded in participants' lives, even in taken-for-granted ways, some aspects of the domestication phases or outcomes discussed might have been overlooked as they are today experienced rather unconsciously. Although the application of qualitative interviews suits our research questions and we already took this limitation into account by measuring positive outcomes twice, some findings could presumably be elaborated by complementary results derived through, for example, diary studies, log data or systematic observations. In addition to potentially retrieving additional positive and negative outcomes, these types of data could enable the researcher to map (recurring) patterns of online activities in a user's daily life, thereby elaborating

on their meaning, for example by matching log times with specific activities as a take-off point for interviews. These additional data could provide more insights into how the less and highly educated differentially adapt their Internet use to the course of daily life and specific deviations to the routine.

Fourth, subjectivity is inherent in studying positive and negative outcomes of Internet use. While an outcome might be perceived as frightful and severe by one participant, someone else might regard it as an everyday inconvenience. Similarly, a financial benefit obtained through the Internet might have a relatively high positive impact on the lives of minorities, while the rich do not regard it as such. As the objective measurement delivers differences in outcomes between the less and highly educated, it might still be the case that the less educated are far more satisfied and content with their lives than the highly educated. Although we tried to overcome this tendency by Helsper, Van Deursen & Eynon's (2015) classification of outcomes divided in *achievement* and *satisfaction* and could therewith determine the Internet's meaning normatively, it is still hard to grasp the impact and actual meaning of outcomes on the participants' (quality of) lives. An important question that remains is whether the less educated actually consider themselves as being marginalized. The findings from chapter 5 reveal that, in general, the less educated did not seem to be less satisfied than the highly educated with what they gain online. Future research may more closely delve into this question, by combining quantitative data for the objective measurement of outcomes obtained with qualitative data on the impact and estimation of those outcomes for people's lives.

Finally, while 'the Internet' is relevant to the daily lives of nearly all citizens in Western Europe, new developments that are based on the Internet will soon follow. As an extension of this dissertation, domestication theory could be the starting point for studying the incorporation of those new technologies. Even during the course of this project, new ICT-developments have already expanded with a rapid pace under the umbrella of the Internet-of-Things (IoT), domotics and artificial intelligence (AI). The question that arises is whether digital inequalities in these areas will take the same shape. Although we might expect similar types of domestication processes and approaches based on people's ingrained *habitus*, notions of motivational and material access and skills and types of use should be questioned anew: these new developments might provide for inequalities resulting in a renewed first-, second-, and third-level divide (Van Deursen & Mossberger, 2018). Specific to these new IoT-applications are outcomes that are related to people's 'digital traces', which can add a new dimension to the third-level divide (Micheli, Lutz, & Büchi, 2018). While we explicitly looked at the offline consequences of people's online behavior, studying

the digital traces that result from those online activities might deliver new categories of Internet outcomes. Even more passive Internet users might feel the consequences of their online presence (Lutz & Hoffmann, 2017), for example when they fall victim to online harassments. Especially with the growth of IoT-applications, passive use is likely to grow (Micheli, Lutz, & Büchi, 2018), which might make it even more relevant to study the consequences of digital traces, as users could be less aware of the outcomes that might come with their passive online presence.

8.8   Concluding remarks

This dissertation aimed to unravel how outcome inequalities between educational groups take shape and how these differences might be associated with offline social disparities. Domestication theory served as a relevant framework for unraveling underlying mechanisms of digital inequalities and for gaining more insight into its interaction with social inequalities. This dissertation shows that online disparities in the social, cultural, personal and economic domains are extant and are a clear reflection and exacerbation of social inequalities, which is a cultural problem that is hard to break through. This problem is not only the case because of divergent offline lifestyles and resources between educational groups that mirror corresponding, online behavior and outcomes, it also emanates from 'transferred inequalities' from one generation to the next that originate in socialization. This dissertation demonstrates the importance of considering sociocontextual elements when studying digital divides, which cause the complexity of digital inequalities. Moreover, this contribution underlines the fact that digital inequalities, on all three levels, are far from resolved and should be studied simultaneously. Finally, the reinforcing impact of digital inequalities on social disparities demonstrates the importance of studying digital divides and formulating policies towards diminishing the divides. Although solving digital inequalities might seem utopic because different (educational) backgrounds lead to different types of Internet users by nature, policies should at least attempt to compensate for differences in Internet uses and outcomes, which requires customization.

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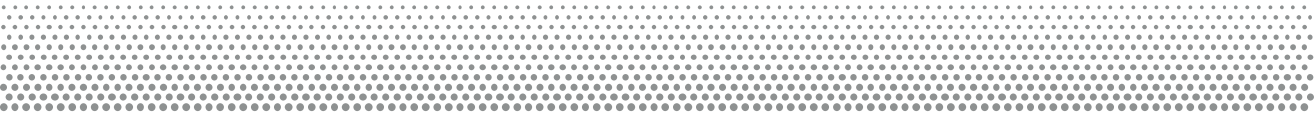
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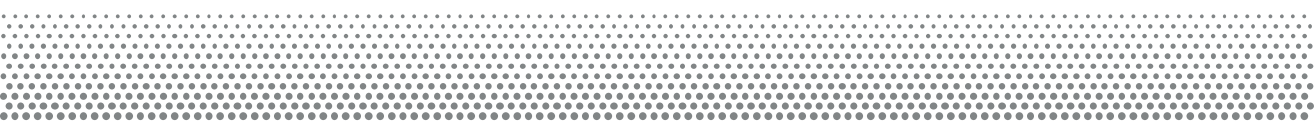
Summary

Summary

Currently, the Internet is integrated into our daily lives in a way that we could not imagine 20 years ago. While many advantages of Internet use support utopian views of the future of the Internet, some also stress the downsides. An important downside is stressed by digital inequality scholars who increasingly express concerns about the reinforcing effect that the Internet has on social inequalities. Diminishing social inequality has become one of the main drivers of studying the *digital divide.* The studies in this dissertation focus on the connection between social and digital inequalities. Several studies show that one's educational background plays an important role in the way one uses (second-level divide) the Internet and benefits from it (third-level divide). Because quantitative approaches dominate the digital inequality literature, we lack an understanding of the mechanisms behind the relationship between education and digital inequality. How do Internet users with different educational backgrounds make the Internet their own? How do these Internet users approach positive outcomes while at the same time guarding themselves against negative outcomes? How do parents involve their children in Internet use? This dissertation applies a qualitative approach to answer these questions.

Starting with a systematic literature review, the most prominent factors that determine the second- and third-level digital divides were identified. Based on the findings of this review, a series of qualitative interview studies with both less and highly educated Internet users was employed. These empirical studies covered the divergent domestication processes of Internet users as well as the positive and negative outcomes they derive from their Internet use. In addition, the interviews dealt with the way children experience their own domestication process. In combining these studies, this dissertation contributes to a better understanding of the way that digital and social inequalities are related. Below, the results of the studies are summarized.

Chapter 2 reports a review of the existing literature on the second- and third-level digital divides to identify prominent determinants of those divides. The results showed that mainly sociodemographic and socioeconomic determinants have been identified until now, while sociocontextual factors are often overlooked. Within the multitude of determinants identified, *educational level* was shown to be one of the most prominent determinants of both the second- and the third-level divides. In addition, the inventory of determinants made clear that

similar concepts are often discussed under different denominations throughout the studies, leading to incoherent definitions, meaning that it is hard to generalize and deduce the factors that are found to be decisive. The review provided insights into promising avenues for future research. First, researchers should include sociocontextual factors in their digital divide studies, not only because these are largely overlooked in the existing literature but also because these factors can deliver explanations for *why* specific determinants lead to differences in Internet skills, usage and outcomes. Second, selecting participants by means of their educational level seems to be a logical starting point for those qualitative contributions, as this factor was shown to be one of the most prominent determinants for the second- and third-level digital divides.

The empirical studies in this dissertation were intended to contribute to digital inequality research by taking on these opportunities and started from these two premises by selecting families for participation in interviews on the basis of their educational levels. Studying the way in which sociocontextual factors, such as one's social network and family dynamics, influence digital inequalities demands a qualitative approach. The extensive description of the method used throughout the interviews that formed the basis for chapters 4 to 7 is set out in **chapter 3**.

Chapter 4 presents differences between highly and less educated families in the way they make the Internet their own. In qualitative interviews, participants were asked to describe how they made meaning of the Internet through the four phases of *domestication theory* (Silverstone, Hirsch, & Morley, 1992): appropriation, objectification, incorporation and conversion. Applying domestication theory offered the opportunity to take into account the sociocontextual factors that are suggested to be relevant but have largely been overlooked until now, including family interactions, work-related demands and the school environment. Based on interviews with family heads, roughly two ways of domesticating the Internet were identified: a proactive, critical and reflective approach that leads highly educated family members to use the Internet in a reflective and considered way while taking the impact into their own hands. These users proactively evaluate and weigh the usefulness of new Internet developments, generally early after its introduction. A less reflective approach makes less educated family members take the Internet as it comes without actively analyzing the remunerative character of digital devices, Internet activities or new developments. These results show that the concept of *habitus* (Bourdieu, 1990) is currently still relevant for the way people differentially domesticate the Internet. As people with similar

educational backgrounds develop a similar *habitus* and lifestyle, their way of domesticating the Internet is shaped accordingly.

Chapters 5 and 6 build on chapter 4 by unraveling how different Internet domestication processes lead to both positive and negative outcomes of Internet use for different groups in society. While outcomes, mainly positive ones, were mapped in digital divide studies before, mostly the outcomes were not connected to their sociocontextual origins, and thus, explanations for (differences in) these outcomes could not be pinpointed. In these two rounds of interviews, family heads were asked to indicate which positive outcomes they obtain from using the Internet and, subsequently, which negative outcomes they encounter when going online. Based on the corresponding fields model (Helsper, 2012), it was conceptualized that both the positive and negative outcomes identified could be categorized into four fields that correspond with offline fields of society: cultural, social, personal and economic outcomes.

Regarding positive outcomes, **chapter 5** reveals that, although members of both educational groups obtain benefits in all four fields, the less educated obtain a less extensive range of outcomes than the highly educated. Though, in their attempt to mindfully diminish the impact of the Internet on their lives, the highly educated increasingly try to spend more time offline, at the expense of social outcomes. These considerations as well as their relative online success result from the domestication approach the highly educated take (chapter 4), which also translates into a different way of approaching positive outcomes as compared to the less educated. For the former group, this can be described as proactive and reflective, by which the (potential) added value of online activities and digital opportunities for their daily lives is critically examined. In contrast, the less educated are less reflective about or concerned with the advantages of the Internet in the first place, and they mostly wait for outcomes to arrive.

In **chapter 6,** two dimensions of obtaining negative outcomes are drawn. Negative outcomes, which form a relatively new scope within the digital inequality research, were categorized according to the *confrontation with* outcomes and the ways of *coping with* those outcomes. The chapter demonstrates that the more or less reflective and critical approaches that the less and highly educated assume also result in differences in negative outcomes. As the less educated do not delve into the negative sides of the Internet, they do not have the urge to control the corresponding negative outcomes. In contrast, the highly educated try to restrain the negative outcomes they might face in the future by

studying how online threats evolve. Although individuals of both educational groups face negative outcomes in all four fields, the way they cope with these outcomes are different and determine the outcomes' impacts. While the less educated often choose a passive coping strategy, the highly educated prefer preventive coping strategies.

Chapter 7 aims to explore how children of different origins, as determined by their parents' educational levels, make sense of the Internet. On the basis of twenty-five interviews with the children of the families participating in the preceding interviews, an exploration of the children's own domestication process was conducted. Parental mediation strategies were discussed with both the parents (round 1) and the children, which provided more in-depth insights into the actual effects of applying certain parental mediation strategies to children's domestication processes. The results show that less and highly educated parents, as part of their own domestication processes, apply different domestication strategies, which seem to have effects on the way that children make the Internet their own. Children of less educated parents generally receive less guidance in their initial phases of Internet use, which results in a different way of using the Internet than that of children of highly educated parents. The children of less educated parents often have to get started online themselves, remark that 'the Internet' is one of their main ways of spending spare time, and seem relatively likely to be confronted with negative outcomes of Internet use. The children of highly educated parents often enjoy help and guidance in going online (for the first time), are restricted in more ways when using the Internet and see the value of spending spare time offline. As children's domestication processes are likely to – at least partially – mirror that of their parents, digital inequalities transferred to children seem to be another way in which inequalities are reproduced. The first indications were already found in the differences in the children's confrontation with negative outcomes.

General conclusion
The findings of this dissertation show that less and highly educated Internet users take different approaches towards their Internet domestication process, as stemming from a divergent habitus. Accordingly, the results illustrate how these approaches translate into a more or less beneficial way of using the Internet, as reflected by the positive and negative outcomes the groups obtain while being online. The relative social positions of the less and highly educated groups are therefore likely to be reinforced. In addition, the results show how these divergent domestication processes reflect different methods of parental

mediation, which influence their children's own domestication processes. The studies therefore not only demonstrate that digital inequalities contribute to existing social disparities, as those with a relatively underprivileged position in society are less successful in building resources online while finding it harder to cope with negative outcomes and vice versa; the studies also highlight that digital inequalities are likely to be transferred to children. Altogether, the concerns that digital inequalities reinforce social inequalities seem justifiable, which emphasizes the importance of unraveling digital divides if we want to fight inequalities in today's society.

Samenvatting (summary in Dutch)

Anno 2019 is het internet niet meer weg te denken uit ons dagelijks leven; het is geïntegreerd op een manier waarop we dat 20 jaar geleden niet hadden kunnen voorzien. De vele voordelen die met dit internetgebruik gepaard gaan ondersteunen utopische visies over de toekomst van het internet, terwijl anderen de nadruk op de nadelige kanten ervan. Een belangrijk nadeel wordt benadrukt door digitale ongelijkheidonderzoekers die zich steeds meer zorgen maken over het versterkende effect van internet op sociale ongelijkheden. Het terugbrengen van sociale ongelijkheid is dan ook een van de belangrijkste drijfveren geworden van het bestuderen van de digitale kloof. De studies in dit proefschrift focussen op de relatie tussen sociale en digitale ongelijkheden. Verschillende studies toonden al aan dat opleidingsniveau een belangrijke rol speelt in de manier waarop iemand gebruik maakt (*second-level digital divide*) van het internet en hier vervolgens van profiteert (*third-level digital divide*). Doordat kwantitatieve benaderingen de digitale ongelijkheidliteratuur tot op heden domineren, ontbreekt er echter een begrip van mechanismen achter die relatie tussen opleiding en digitale ongelijkheid. Hoe maken internetgebruikers met verschillende opleidingsachtergronden zich het internet eigen? Hoe benaderen deze internetgebruikers positieve uitkomsten, terwijl ze zich tegelijkertijd moeten behoeden voor negatieve uitkomsten? Hoe betrekken ouders hun kinderen bij het internet? Dit proefschrift past een kwalitatieve benadering toe om dit soort vragen te beantwoorden.

Startend met een systematische literatuurreview werden de meest prominente determinanten van internetvaardigheden, –gebruik en –uitkomsten geïdentificeerd. Vervolgens werden zowel een aantal lager als hoger opgeleide families geselecteerd voor deelname aan een reeks van interviews. De interviews behandelden zowel de manier waarop de deelnemers het internet domesticeren, alsmede de positieve en negatieve uitkomsten die zij verkrijgen uit hun internetgebruik. De laatste interviewronde focuste op het domesticatieproces van kinderen in de families. Met het combineren van deze studies levert dit proefschrift een bijdrage aan een beter begrip van de relatie tussen digitale en sociale ongelijkheid.

Hoofdstuk 2 rapporteert een review van bestaande digitale ongelijkheidliteratuur waarin prominente determinanten van internetvaardigheden, –gebruik (*second-level digital divide*) en –uitkomsten (*third-*

level digital divide) werden achterhaald. De resultaten laten zien dat er tot op heden voornamelijk sociodemografische en socioeconomische determinanten werden bestudeerd, terwijl sociaal-contextuele factoren vaak over het hoofd worden gezien in de huidige literatuur. Binnen de veelheid aan geïdentificeerde factoren kwam opleidingsniveau naar voren als een van de meest prominente determinanten van beide *divides*. Bovendien maakte de inventarisatie van determinanten duidelijk dat voor het bespreken van vergelijkbare concepten, binnen de verschillende studies, vaak uiteenlopende labels of benamingen worden gebruikt, wat leidt tot incoherente definities die generalisatie en het achterhalen van bepalende factoren moeilijk maken. De review gaf indicaties voor aspecten die in toekomstig onderzoek nader aandacht verdienen. Allereerst moet er aandacht worden besteed aan sociaal-contextuele factoren in het bestuderen van de digitale kloof. Niet alleen omdat deze tot op heden grotendeels werden genegeerd in de huidige literatuur, maar ook omdat deze factoren verklaringen kunnen opleveren voor *waarom* specifieke determinanten leiden tot verschillen in internetvaardigheden, –gebruik en –uitkomsten. Ten tweede wordt in de conclusie van de literatuurreview betoogd dat het selecteren van deelnemers op basis van hun opleidingsniveau een logisch uitgangspunt vormt, daar het als een van de meest prominente determinanten werd geïdentificeerd.

Met de empirische studies in dit proefschrift leveren we een eerste bijdrage aan het invullen van deze hiaten. De empirische studies startten vanuit de twee geïdentificeerde tekortkomingen, door het selecteren van families voor deelname in interviews op basis van hun opleidingsachtergrond. Het bestuderen van de manier waarop sociaal-contextuele factoren, zoals iemands sociale netwerk en familiedynamiek, invloed hebben op digitale ongelijkheden, vraagt om een kwalitatieve aanpak. Een uitgebreide beschrijving van de methode die werd gebruikt in de interviews, die de basis vormen voor hoofdstuk 4 tot en met 7, is uiteengezet in **hoofdstuk 3.**

Hoofdstuk 4 rapporteert de eerste interviewronde, waarin de verschillende manieren waarop laag- en hoogopgeleide families zich het internet eigen maken werden onderscheiden. In kwalitatieve interviews werden participanten gevraagd om te beschrijven hoe ze betekenis geven aan het internet door middel van de vier fases van *domesticatietheorie* (Silverstone, Hirsch, & Morley, 1992): appropriatie, objectificatie, incorporatie en conversie. Het toepassen van domesticatietheorie faciliteerde het bestuderen van sociaal-contextuele factoren die relevant worden geacht, maar tot op heden grotendeels zijn genegeerd in digitale ongelijkheidonderzoek, zoals familie interactie, werkgerelateerde eisen

en de schoolomgeving. Op basis van interviews met de gezinshoofden werden er grofweg twee manier van internetdomesticatie geïdentificeerd: een proactieve, kritische en reflectieve benadering van internetgebruik binnen de groep hoogopgeleiden, die daarmee de impact van het internetgebruik in eigen handen neemt. Deze gebruikers evalueren de waarde en bruikbaarheid van nieuwe internetontwikkelingen proactief, doorgaans meteen na de introductie van zo'n ontwikkeling. Een minder reflectieve benadering maakt dat lager opgeleide gebruikers het internet nemen zoals het komt, zonder actief het winstgevende karakter van digitale apparaten, online activiteiten of nieuwe ontwikkelingen te analyseren. Deze resultaten laten zien dat *habitus* (Bourdieu, 1990) tegenwoordig nog steeds een relevant concept is voor de uiteenlopende manieren waarop mensen het internet domesticeren. Doordat internetgebruikers met dezelfde opleidingsachtergrond een vergelijkbare habitus en lifestyle ontwikkelen, wordt hun manier van internetdomesticatie soortgelijk vormgegeven. De resultaten lieten ook zien dat de verschillende benaderingen zich herhalen door de vier fasen van domesticatie heen, wat suggereert dat verschillen in internetuitkomsten reeds worden gevormd in de eerste fasen van domesticatie.

Hoofdstuk 5 en 6 bouwen voort op hoofdstuk 4 door te bestuderen hoe uiteenlopende domesticatieprocessen leiden tot positieve en negatieve uitkomsten van internetgebruik voor verschillen groepen in de maatschappij. Hoewel er in eerder onderzoek naar de digitale kloof reeds, voornamelijk positieve, uitkomsten in kaart werden gebracht, werden die uitkomsten doorgaans niet gelinkt aan hun sociaal-contextuele oorsprong, waardoor verklaringen voor (de verschillen in) deze uitkomsten niet werden achterhaald. In deze twee interviewronden werden gezinshoofden gevraagd om aan te geven welke positieve uitkomsten ze verkrijgen uit hun internetgebruik en, vervolgens, welke negatieve uitkomsten ze ondervinden als gevolg van hun online activiteiten. Op basis van het *corresponding fields model* (Helsper, 2012) conceptualiseerden we dat zowel de positieve als negatieve geïdentificeerde uitkomsten konden worden gecategoriseerd in vier domeinen die corresponderen met offline domeinen in de maatschappij: cultureel, sociaal, persoonlijk en economisch.

Met betrekking tot de positieve uitkomsten, laat **hoofdstuk 5** zien dat, hoewel zowel hoger- als lager opgeleiden voordelen behalen in alle vier de domeinen, de hoger opgeleiden een breder palet aan uitkomsten verkrijgen dan de lager opgeleiden. Echter, in hun poging om de invloed van het internet op hun dagelijks leven te verminderen, proberen hoger opgeleiden steeds meer tijd

offline te besteden, wat (bewust) ten koste gaat van uitkomsten in het sociale domein. Deze overwegingen en hun relatieve online succes komen voort uit de domesticatiebenadering die deze groep neemt (hoofdstuk 4), die zich ook vertaalt in een andere manier van kijken naar uitkomsten dan de lager opgeleiden doen. Voor de hoger opgeleiden kan die worden omschreven als proactief en reflectief, waarbij kritisch de toegevoegde waarde van online activiteiten en digitale mogelijkheden voor hun dagelijks leven worden onderzocht. Bovendien anticipeert deze groep op nieuwe online ontwikkelingen die potentieel een voordeel kunnen opleveren. Daarentegen hebben de lager opgeleiden een minder reflectieve benadering, en zijn ze minder geïnteresseerd in en betrokken bij de voordelen van het internet, wat leidt tot een afwachtende houding jegens de uitkomsten.

In **hoofdstuk 6** worden twee dimensies van negatieve uitkomsten uiteengezet. Negatieve uitkomsten van internetgebruik, die een relatief nieuw terrein binnen digitale ongelijkheidonderzoek vormen, werden gecategoriseerd naar de *confrontatie met* de uitkomsten en de *manier van omgaan met* die uitkomsten. De resultaten wijzen uit dat de meer of mindere reflectieve en kritische benadering die de lager- en hoger opgeleiden nemen, ook resulteert in verschillen in negatieve uitkomsten. Doordat de lager opgeleiden zichzelf doorgaans niet verdiepen in de negatieve kanten van het internet, voelen zij ook niet de noodzaak om de bijbehorende negatieve uitkomsten te controleren. Daarentegen proberen de hoger opgeleiden zich te onthouden van de negatieve uitkomsten waarmee ze in de toekomst potentieel geconfronteerd kunnen worden, door zich met regelmaat in online bedreigingen te verdiepen. Hoewel internetgebruikers van beide opleidingsniveaus worden geconfronteerd met negatieve uitkomsten in alle vier de domeinen, is de manier waarop ze acteren op die uitkomsten verschillend en bepalend voor de impact ervan. Waar lager opgeleiden vaak een passieve strategie kiezen, prefereren de hoger opgeleiden preventieve strategieën.

Hoofdstuk 7 exploreert hoe kinderen van verschillende afkomsten, als bepaald door hun ouders' opleidingsniveau, betekenis geven aan het internet. Op basis van vijfentwintig interviews met kinderen uit de deelnemende families van de voorafgaande interviews, werd een verkenning van het domesticatieproces van de kinderen gedaan. *Parental mediation* strategieën werden besproken met zowel de ouders (ronde 1) als de kinderen van de betreffende families, wat inzichten opleverde in de daadwerkelijke effecten van die strategieën voor het internetgebruik van kinderen. De resultaten laten zien dat lager en hoger

opgeleide ouders als onderdeel van hun eigen domesticatieproces verschillende strategieën toepassen, wat effect lijkt te hebben op de manier waarop de kinderen het internet domesticeren. Kinderen van lager opgeleide ouders krijgen over het algemeen minder begeleiding tijdens de initiële fasen van internetgebruik, wat resulteert in een andere manier van internetgebruik dan dat van kinderen van hoger opgeleide ouders. De kinderen van lager opgeleide ouders moeten tijdens de eerste kennismakingen doorgaans zelf aan de slag, geven aan dat 'het internet' een van de belangrijkste manieren is om hun vrije tijd in te vullen en hebben relatief grote kans op confrontatie met negatieve uitkomsten. De kinderen van hoger opgeleide ouders ontvangen vaak hulp en begeleiding wanneer ze (voor het eerst) online gaan, worden door hun ouders op meer manieren beperkt als ze het internet gebruiken en spenderen hun vrije tijd ook graag offline. Doordat het domesticatieproces van kinderen het proces van hun ouders – op zijn minst deels – reflecteert, lijken digitale ongelijkheden tussen kinderen een tweede manier te zijn waarop ongelijkheden zich reproduceren. De eerste aanwijzingen daarvoor kwamen reeds naar voren in de verschillen tussen kinderen betreffende de confrontatie met negatieve uitkomsten.

Algemene conclusie

De bevindingen van dit proefschrift laten zien dat lager en hoger opgeleide Internetgebruikers verschillende benaderingen van het domesticatieproces hebben, voortkomend uit uiteenlopende habitus'. Overeenkomstig belichten de resultaten hoe die benaderingen zich vertalen in het meer of minder voordelig gebruiken van het Internet, wat reflecteert in de positieve en negatieve uitkomsten die de groepen verkrijgen terwijl ze online zijn. Het lijkt erop dat de relatieve sociale posities van beide groepen hierdoor worden versterkt. Daarnaast geven de resultaten weer hoe deze uiteenlopende domesticatieprocessen reflecteren in verschillende *parental mediation* strategieën, die vervolgens de domesticatieprocessen van kinderen beïnvloeden. De studies tonen daarmee niet alleen aan dat digitale ongelijkheden bijdragen aan bestaande sociale verschillen, aangezien degenen met een relatief nadelige maatschappelijk positie minder succesvol zijn in het online verkrijgen van middelen, terwijl ze ook moeilijkheden hebben met het omgaan met negatieve uitkomsten en vice versa; de studies laten ook zien dat digitale ongelijkheden kans hebben om overgedragen te worden op kinderen. Concluderend lijken de zorgen dat digitale sociale ongelijkheden versterken gerechtvaardigd, hetgeen het belang van het ontrafelen van de digitale kloof benadrukt voor het terugbrengen van ongelijkheden in de hedendaagse maatschappij.

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Since the Internet was introduced a few decades ago, utopian views of promising futures for all were put forward. Now that the Internet is integrated into our lives, it is time to take stock. Unfortunately, not all of us seem to fully benefit from the potential advantages the Internet has got to offer. It even seems that those who are already socially disadvantaged offline, also lag behind when going online, while they could benefit relatively most from the Internet. As a consequence, social disparities are likely to grow. Most studies that attempted to unravel why some benefit more from being online than others, were limited to sociodemographic explanations and mainly applied quantitative approaches. This dissertation takes on a qualitative approach that departs from the Internet users' social contexts, in which important clues and directions for differences in Internet outcomes might resonate. Instead of taking the individual as a point of departure, families with different compositions and educational backgrounds participated in a series of interviews to find socio-contextual explanations for why Internet users differentially benefit from being online.