Åbo Akademi University

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Understanding Digital Distraction

A Longitudinal Study on Disruptive Everyday Media Multitasking Among Diginatives

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The journey has been tough but very rewarding. Numerous times throughout the journey I have doubted myself, my research, and the very thought of actually reaching any destination at all. Repeatedly, I have sworn to throw my computer into the wall, change careers and never ever look at my writings, ever again. However, several opportunities to travel and attend interesting seminars and conferences, the productive and rewarding discussions with supervisors, colleagues, fellow doctoral students and students taking part in the study, as well as continuous new observations on interesting incidents (just to mention a few things), have kept me curious and has pushed me forward, slowly but steadily towards the end of the journey. Here I am now, with the completion of the dissertation in sight. The final stretch of the journey proved to be even more challenging than predicted due to unexpected events in the world. However, the current situation only reinforces the main lessons learned along the journey; the importance of staying curious and focused, of being open to change and willing adapt according to altered circumstances, and of never ever giving up.

Åbo, 17th March 2020

Johanna Lindström

ABSTRACT

During the past decade, mobile technology has transformed our media behavior and our relation to media as part of our everyday lives. The media user today has unprecedented control over what content to consume, when and where to consume it, what channels to use and for how long. One consequence is an increasing trend in media multitasking (i.e. simultaneous use of more than one media). At the same time, the rapid technological development seems to outrun the development of our human brains. Our brains are simply not capable of handling the constant stream of media and information that we encounter every day. Prior research on the expanding phenomenon of media multitasking is the starting point of my dissertation. Despite vast prior research on cognitive processes, challenges and negative consequences of media multitasking (stemming from the fact that the human brain is not equipped for simultaneous processing of several tasks), prior research efforts on media multitasking in the everyday context are quite scarce. New perspectives are needed to understand what triggers media multitasking in the current volatile media landscape and to better manage the seemingly endless stream of information and impulses.

The aim of the study is to develop a new conceptual framework that helps us understand media multitasking and digital distraction in the everyday context, focusing particularly on the diginative generation (young adults born in and after 1990). The longitudinal empirical diary study that the dissertation builds upon is inspired by Grounded Theory and encompasses a total of about 800 media diaries collected among university students in years 2013–2019. The study highlights four key emerging trends in the participating young adults' media behavior, which are explored via the theoretical concepts of materiality, routines, addiction and media multitasking. In accordance with Grounded Theory logic, *media multitasking* is chosen as the core concept. The identified trends and the way the informants describe, relate to and justify their own media multitasking behavior in the diaries indicate that a wider perspective than the traditional cognitive approach is needed to enhance our understanding of the phenomenon.

The study shows that most of the informants' everyday media multitasking is performed unconsciously, in a routine-like manner, and that this behavior is perceived by the informants as problematic and disruptive. The aggregated theoretical dimensions of *disruptive everyday media multitasking* and *digital distraction* are introduced to capture this type of problematic, at times even destructive, everyday media behavior. Digital distraction is at the core of the conceptual framework developed to map out and explore different individual, technological and contextual dimensions that impact the decision to frequently engage in disruptive everyday media multitasking activities. The conceptual framework, "*Dimensions of Digital Distraction*", is developed based on the longitudinal empirical study and the parallel literature review on media multitasking patterns, consequences and predictors. Inspiration for the dimensions is drawn particularly from Activity Theory, which

emphasizes the role of and interplay between the individual, technology and context in any activity.

The central dimensions in the conceptual framework are also linked to the concept of *digital metacognition*. Digital metacognition is introduced as a strategy to enhance awareness for one's own (problematic) media behavior, and thereby create new strategies for coping with everyday digital distraction. This is something that would need to be further established among youngsters and young adults to avoid stress and other forms of mental and physical disorders related to excessive, habitual, addictive and unconsciously performed everyday media activities.

The relevance, and the practical implications of the study and the results are discussed at the end of the dissertation from 1) a generational, 2) an educational, and 3) a marketing perspective. The dissertation provides a cross-disciplinary theoretical and methodological perspective on media multitasking. This novel approach allows for widening our knowledge on everyday media activities, underlying decision processes and how these are experienced by diginatives (and other generations). The study complements prior theories and research and offer new and exciting entry points for further exploration into the phenomenon of digital distraction.

ABSTRAKT

Mobil teknologi har under det senaste decenniet förändrat vår medieanvändning och vårt förhållningssätt till media i vardagen. Medieanvändare har i dagens läge mer kontroll än någonsin över vilken typ av medieinnehåll hen konsumerar; genom vilka kanaler, när, hur och var. En konsekvens är att mediemultitasking har blivit ett allt vanligare fenomen. Samtidigt är våra hjärnor inte utrustade för detta, vilket leder till utmaningar i att hantera medieflödet i vardagen. Min avhandling tar avstamp i tidigare forskning inom mediemultitasking. Trots en gedigen forskning i de mentala processer, utmaningar och negativa effekter som multitasking innebär, är forskningen kring mediemultitasking i vardagskontext begränsad. Nya perspektiv behövs för att förstå vad som triggar mediemultitasking i en vardag kännetecknad av ett oändligt flöde av information och impulser och hur vi kan bli bättre på att hantera detta.

Syftet med avhandlingen är att utveckla ett nytt teoretiskt ramverk som hjälper oss förstå mediemultitasking och digital distraktion i vardagskontext, speciellt bland s.k. diginativa (unga vuxna födda år 1990 eller senare). Den longitudinella empiriska studie som avhandlingen bygger på är inspirerad av grundad teori (*eng. Grounded Theory*) och omfattar totalt ca. 800 mediedagböcker som samlats in bland universitetsstuderande under åren 2103–2019. I studien identifieras fyra centrala trender som utforskas genom begreppen materialitet, rutiner, beroende, och mediemultitasking. I analysen växer *mediemultitasking* fram som kärnbegrepp. De identifierade trenderna och sättet som informanterna beskriver, förhåller sig till och även rättfärdigar mediemultitasking i mediedagböckerna, visar att vi behöver närma oss fenomenet ur ett bredare perspektiv än vad tidigare forskning gjort för att utvidga vår förståelse.

Studien visar att en stor del av informanternas mediemultitasking i vardagen sker rutinmässigt och omedvetet. Detta upplevs som distraherande och problematiskt. Två övergripande teoretiska dimensioner, *"disruptive media multitasking"* och *"digital distraction"*, introduceras för att fånga upp just denna typ av vardagligt mediebeteende. Digital distraktion utgör kärnan i det teoretiska ramverket som utvecklats för att kartlägga och öka förståelse för olika individuella, teknologiska och kontextuella dimensioner påverkar beslutet att i vardagen ägna sig åt distraherande och problematiska mediemultitaskingaktiviteter. Ramverket bygger på den longitudinella empiriska studien och den omfattande litteraturgenomgången kring begreppet mediemultitasking. Det teoretiska ramverket, *"Dimensions of Digital Distraction"*, är i huvudsak inspirerat av aktivitetsteori *(eng. Activity Theory)*, där individ, teknologi och kontext utgör centrala delar av själva aktivitets-begreppet.

De centrala dimensionerna i det teoretiska ramverket förknippas även med begreppet *digital metakognition*. Digital metakognition lyfts fram som en strategi för att öka medvetandet kring digital distraktion i vardagen och för att lära sig hantera detta bättre. Digital metakognition borde etableras hos ungdomar och unga vuxna i allt större grad för att undvika stress och andra typer av mentala och fysiska problem

som lätt uppstår till följd av överdrivet, vanemässigt, beroendeframkallande och omedvetet mediebeteende i vardagen.

Studiens relevans och praktiska implikationer diskuteras i slutet av avhandlingen ur: 1) ett generationsperspektiv, 2) ett utbildningsperspektiv och 3) ett marknadsföringsperspektiv. Avhandlingen bidrar med ett tvärvetenskapligt teoretiskt och metodologiskt perspektiv på mediemultitasking som fenomen. Detta tillvägagångssätt erbjuder nya möjligheter att utforska vardagliga medieaktiviteter, underliggande beslutsprocesser och hur unga vuxna (och andra generationer) upplever dessa. Studien kompletterar tidigare forskning och teorier och erbjuder förutsättningar för att närma sig fenomenet digital distraktion ur nya perspektiv och utgångspunkter.

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PROLOGUE: MY STORY

I never really knew what I wanted to become when I grew up. The only thing I knew was that I did not want to become a teacher. When the time came to consider different possibilities for higher education, I became interested in business studies and started studying international entrepreneurship and marketing at Turku University of Applied Sciences (at that time called Åbo Yrkeshögskola). After graduating in 2005, I realized that I still wanted to learn more about marketing. Therefore, I applied for continued studies at Åbo Akademi University. A couple of years later, in 2008, while finishing my master's thesis in international marketing, I was offered an opportunity to start teaching at the university. I hesitated to accept the offer as this was exactly what I did not want to do. But the position in question was a temporary solution for one year and I thought I would give it a go while searching for other job opportunities.

Today, more than ten years later, I still work as a university teacher in marketing. I have to admit I enjoy it. I especially like experimenting with new activating methods and developing closer cooperation between academia and different organizations, who offer students interesting opportunities and environments for learning and co-creating knowledge. Interacting with students on a daily basis has also sparked a genuine interest in obtaining a better understanding of different learning styles and learning strategies. After completing a course in university pedagogics (and a period of maternity leave) I started observing the students in my classroom a bit closer. A series of observations of quite surprising events and behaviors led to an increased interest in these ongoing behavioral changes. I observed. I read. I conversed with fellow colleagues. And I came to the conclusion that something fascinating, but also quite alarming was happening right before my eyes.

Students were becoming more and more dependent on media. They were more easily distracted during classes. They turned to their mobile phones rather than pen and paper or laptops for documenting and "taking notes". The smartphone, especially, impacted on their behavior, both inside and outside the classroom. It was always present in one way or another. It affected their performance in different types of tasks, generally in a negative way. They became lazy in terms of filtering relevant information from the irrelevant, to name a few examples. These observations served as a trigger to study the ongoing changes more in detail.

Today, the presence of smartphones and other mobile devices in nearly all aspects of these students lives seems fundamentally unavoidable. I refuse to believe that this is solely a bad thing. Mobile devices open up all imaginable doors to new knowledge and unexplored opportunities. This is why I would have us embrace new technologies and new behaviors, rather than completely disregard the ongoing development. Perhaps we need to change, to let go of our old habits and beliefs? Perhaps we need to find ways of better adapting to and handling ways of incorporating rapidly emerging digital solutions into university studies and teaching, as well as into our everyday lives? Perhaps we need to focus on the opportunities rather than the obstacles?

Since the initial observations in 2012–2013, I have continued to make observations and write down thoughts and reflections on interesting occurrences. However, for a long time I struggled to find a logical way to make sense out of my observations and design a research project around them that would be manageable for a doctoral dissertation in terms of scope and time frame. When an opportunity to join the EDGE media research group at Åbo Akademi University presented itself, I jumped on board. This provided me with a clearer focus on the currently disruptive and increasingly digital media landscape and how this affects our information and media behavior. I quickly realized that the changes I had observed among students were examples of a shifting media behavior.

Media quickly became an interesting concept in terms of both my research and my teaching. The most intriguing feature of this concept, I found, was the struggle in defining what media really is. I repeatedly asked students in different courses to define the concept, and every time this proved to be equally difficult. In fact, the most commonly used word to describe media was media. This showcased not only the difficulty in drawing a line between what is media and what is not, but the definitions also mirrored the rapidly evolving media landscape. Over the years that this dissertation has been in the making (2013–2020), the entire media industry has experienced radical transformations. Among other things, we have experienced the rise of the smartphone and the development of new and currently predominant social media platforms. This has fundamentally changed our preconception of what media is.

Aiming to map out emerging trends in the changing media behavior among university students, I started collecting media diaries among the participants on a particular marketing course that I taught. In 2011, the EDGE research group had initiated a similar media diary study aiming at identifying the typical media day. I followed a similar approach and quickly realized that a longitudinal approach was needed to explore trends and changes in students' media behavior. Little did I know in 2013, that this decision would lead up to this point, seven years and a total of about 800 unique media diaries later. While the diaries constitute the central part of the study and the dissertation, I also wanted to include observations I have made and documented over the years. While the personal observations in each chapter illustrate tangible effects of the contemporary digital revolution, they also represent my engagement in and proximity to the empirical context, as well as the evolvement of my own thoughts throughout the process of completing the dissertation.

1. INTRODUCTION

… social actions and phenomena that may appear to be quite random, insignificant, or even absurd can end up having a larger potential to transform society than one might initially believe. (Lindgren 2017)

During the past decades, we have seen groundbreaking advances in mobile technology and digital media that have changed the very foundation of our sociocultural conduct (Napoli 2011; Cole 2013; Gillberg 2014; Aagaard 2015). The digital revolution we currently experience, is considered to be one of the major transitions of human development (e.g. Negroponte 1995; Raschke 2003; Scholz et al. 2018). Whether we like it or not, mobile devices such as smartphones and laptops have become a natural and indispensable part of our everyday lives. As a consequence, quite radical behavioral changes can be seen and experienced almost everywhere we go. This chapter provides a general background to such consequences of the rapidly evolving digital media landscape and outlines the specific problem area. To conclude the chapter, the structure of the dissertation is presented.

1.1. Observation: Marshmallows and coffee

As an effort to strengthen the team spirit and teamwork among students in a marketing course in 2013, we decided to throw them a challenge, the Marshmallow Challenge[1]. The rules are simple: build the tallest construction possible using the given materials (tape, string, spaghetti and a marshmallow) in eighteen minutes. The construction needs to be freestanding with the marshmallow on top. A clear task, simple rules and an excellent way to encourage students to work together as a team; still, with about 150 students participating in the challenge, we expected nothing short of chaos. However, having kicked off the challenge, only about half the room was buzzing with lively discussions on how to build a marshmallow-bearing tower out of spaghetti, tape and string. The other half of the room was completely silent. Why? Well, the students on this side of the room had taken out their laptops and mobiles, trying to find an easy solution on Google and YouTube. After a few minutes, the level of noise in the room grew. After about 10 minutes, all the devices were tucked away, and everybody was frantically engaged in their constructions. The solution could not be found via Google.

1 For more information about the Marshmallow Challenge, see e.g. https://www.ted.com/talks/tom_wujec_build_a_tower?language=en (last accessed 8th November 2019) or https://dschool.stanford.edu/resources/spaghetti-marshmallow-challenge (last accessed 8th November 2019)

Another incident on the same course involved a case study on a well-known global company offering coffee and coffee-related products on a number of different markets. The task was quite straightforward: search for information online and reflect upon the success of this particular company on the U.S. market. What were their secret ingredients for success? However, while reading the students' reflection papers, I noticed that several of the students came to the conclusion that the company in fact was not that successful at all. This made no sense! What was wrong? Well, a quick Google search provided the explanation. When Googling the company's name, the first search hit was the company's U.K. brand pages, and while the company was successful on several other markets, they were struggling in the U.K. It hit me then that almost one third of the students hadn't realized they were using information related to the wrong market for their reflection. Apparently, they hadn't even looked at the second hit on Google. That would have helped them get it right.

There's more to this story than marshmallows and coffee, though. These observations mirror larger ongoing changes in media behavior among the so-called "Google Generation." What is really going on? Do these students blindly trust in Google to provide them with all the right answers, regardless of the task at hand? Is the first hit in Google the only thing that really matters? What is happening to creativity? What is happening to common sense? Alarm, concern as well as curiosity arose for what the near future would bring along. My mind was intrigued. This was the starting point for my research on media behavior among young university students.

1.2. A new media landscape

Along with the introduction of mobile devices such as smartphones, tablets and wearables, and social media platforms such as Facebook, WhatsApp, Twitter, Snapchat and Instagram, the availability of media solutions and content has dramatically increased (Aagaard 2015; Kauppinen and Kivikoski 2015; Duff and Segijn 2019). Activities such as browsing, scrolling, checking and streaming have become natural parts of our everyday lives. In many ways, modern media[2] have a facilitative impact on our lives, but at the same time there is a growing concern for negative consequences that increased use and dependence on mobile technology may have on our sociability, on our general wellbeing and on our society as a whole (Vahvanen 2018). Is modern mobile technology destroying our social skills? Is it

2 The concept of media is loosely defined as all communication channels (digital, analog as well as mixed channels), through which information is shared and attention is sought and gained (Gillberg 2014). A more elaborate discussion concerning the definition of media can be found in section 2.4.

making us dumber? Is it slowly taking over every aspect of what we know and hold dear?

While the negative consequences of modern technology have been debated for decades (see e.g. Carr 2008; Carr 2010; Vahvanen 2018), one thing is clear: online social interactions have not yet replaced the need for physical contact – and will probably never do so. We are still social human beings who want and need human contact in our lives (Jacobsen and Foerste 2011; Gillberg 2014). Parallels can be drawn between this current discourse of concern and similar reactions to the introduction of earlier groundbreaking technologies on the mass-market. For example, radio was claimed to kill the newspaper, television was feared to kill the radio, and the DVD threatened to eliminate the cinema (see e.g. McLuhan 1964; Rosen 2010; Vaidhyanathan 2018). Still, all these media formats continue to co-exist in one way or another. However, their role or function in the media user's everyday life and in the evolving digital media landscape is changing in line with new mobile technology and media services rapidly emerging on the market (Briscoe, Sadedin, and De Wilde 2011).

Is the concern overrated? No, the change and disruption in the media landscape that we see today is considerably faster and more impactful than ever before (e.g. Hansen 2019a). We now have access to more information than we ever knew we needed, but at the same time we lack appropriate skills for coping with this information overload (ibid.). We are more connected than ever, but at the same time also more isolated (Vaidhyanathan 2018). While social media bring us digitally closer to each other, they also make us more and more antisocial (ibid.). Modern technology designed to improve productivity makes us distracted, restless, and lazy (Vahvanen 2018). Increasingly mediated everyday activities are becoming personalized to the degree that general knowledge and common sense seems to be taking a serious hit. Moreover, the lines between media, entertainment, and politics are becoming increasingly blurred. (ibid.)

This contemporary and highly paradoxical media landscape keeps developing at such a rapid pace that companies, organizations, as well as individuals struggle to keep up with the changes (Lindgren 2017; Scholz et al. 2018; Hansen 2019a). A constant struggle to keep up with the latest trends and developments lead to reactions such as fear for the unknown, emotional insecurities, and feeling obliged to constantly be available and connected, not to mention subsequent mounting stress levels, anxiety related health issues and "digital depressions" (Elmore 2013; Carrier et al. 2015; Scholz et al. 2018; Hasan, Jha, and Liu 2018; Flayelle et al. 2019). What is really needed in these turbulent times is a better understanding of the impact of the current digital revolution on many different levels. Here, focus lies on the impact on an individual level, related to routinized behavioral patterns and how we are coping with a constant information overload in our everyday lives. Does increasing dependence on mobile technology only lead to negative consequences? Or is there hope that we can learn how to cope with this new and highly volatile media ecosystem?

1.3. Digitalization and unintended consequences

Digitalization is a concept often used to capture the fundamental impact of recent technological advances in mobile and digital media on many well-established institutions (Gulliksen 2017). The essence of this phenomenon lies in *digitization*, i.e. the development of new digital solutions that exponentially increase the speed and amounts of storage, processing, retrieval, and communication of digital data (Scholz et al. 2018). While new digital technologies have had a fundamental impact in, for example, transforming and increasing efficiency in production industries in the past decades (Brynjolfsson and McAfee 2014), digitization has also been identified as the trigger for fundamental societal transition and economic growth (van Ark 2016; Scholz et al. 2018). The concept of digitalization encompasses the societal change processes driven by new technological solutions, enabling new businesses, new opportunities, and completely new movements in society (Gulliksen 2017).

Modern technological development has prompted new ways of communication, new media consumption patterns and behavioral changes among individuals as well as organizations (Gulliksen 2017). Lately, it has become increasingly difficult to distinguish digital technology from other parts of our (analogue) everyday lives. In many ways, digital solutions have had a positive impact on bringing people closer, though scattered all over the world, in advancing healthcare and medical solutions, in creating and enabling new virtual business opportunities, etc. However, regardless of many beneficial effects, any large-scale (technological) transition is bound to lead to unintended and often unfavorable or even unwanted changes for all actors included or involved (Scholz et al. 2018). A few key, presumably unintended, behavioral and sociocultural changes are discussed next.

1.3.1. Blurred lines in media consumption

Not that long ago, the entire media industry encompassed a limited number of broadcast channels, which conveyed a picture of society to the public via content produced by journalists, producers, and other professionals (Napoli 2011; Kilian, Hennigs, and Langner 2012). This traditional form of media relies a one-to-many logic where professional content is distributed to a passive audience (Kilian, Hennigs, and Langner 2012). The audience's outlook on and understanding of the world mirrored the objectivity and the perspective of the media organizations and content producers.

Today, as a consequence of the rapidly evolving media ecosystem, the situation is very different. The sheer number of channels and digital platforms available is nothing short of intimidating. Continuous online interaction is not only possible, but highly recommended as an efficient tool in engaging users and providing increasingly personalized stories, services and solutions (Ström and Vendel 2015). The previous clear line between producer and consumer has become blurred; consumers have turned into active and engaged producers and co-creators, or *prosumers*, of media

content (van Dijck 2009; Hanna, Rohm, and Crittenden 2011; Ritzer, Dean and Jurgenson 2012). In most contemporary digital platforms, users play an important role in generating and spreading content in the form of likes, comments, short videos and pictures (Hanna, Rohm, and Crittenden 2011). For example, user-generated content (UGC) offer instant and personalized ways of reaching out to the public (van Dijck 2009; Hanna, Rohm, and Crittenden 2011; Couldry and Turow 2014). However, in line with this development, many traditional "big players" in the media industry need to rethink their role, their business models, and perhaps even their very existence on the market (Berman et al. 2007; Napoli 2011).

The premises of the audience's outlook on the world have changed. While the number and variety of media formats increases, a trend towards a more personalized and narrow consumption of media content is recognized. This trend is fueled by increasingly advanced integrated recommendation systems, a growing trend of fast-paced browsing behavior (e.g. Couldry and Turow 2014; Gillberg 2014) as well as increasing integration of artificial intelligence (AI) solutions (Lau 2019). The media consumption decision is no longer based merely on what media and what content is available; rather, it is based on factors such as cost, speed, personalized recommendations, and level of trust (Barnet 2009; Luoma-Aho 2012; Turcotte et al. 2015). Social media is accelerating the trend of media content tailored to one's individual preferences and interests (Vahvanen 2018). In 1995, Negroponte launched and discussed the idea of "Daily Me", i.e. a virtual daily newspaper customized for every user's individual tastes and interests (Negroponte 1995). The reality in terms of news media consumption today is really not that far from his predictions (Vahvanen 2018).

However, a highly personalized media environment drastically delimits our outlook on the world. The content we consume fits into a custom-made "box" for each and every one of us, but there might be a lot of important news, knowledge and information not included in this "box". Not only does this affect the width of our general knowledge, it also affects our ability to distinguish between our social reality and the mediated and individually tailored view of society (De Zengotita 2006; Gillberg 2014). Furthermore, modern media offers numerous new and unprecedented opportunities to manipulate and exploit (Vahvanen 2018). For example, the U.S. presidential elections in 2016 showed how digital media can be used to distort and manipulate audiences with unexpected but highly impactful consequences on many different levels (Keener 2018; Vaidhyanathan 2018; Vahvanen 2018). The continuous use of media as a means of manipulation has led to a rapidly mounting interest in phenomena such as *fake news* (Keener 2018; Vaidhyanathan 2018; Newman et al. 2017). While this is not a new phenomenon, it becomes highly relevant and interesting in light of the concurrent trend of decreasing skills among media users, especially among younger media users, in evaluating the relevance and trustworthiness of easily accessed information (Rowlands et al. 2008; Geck 2006; Wellner 2000; Rideout, Foehr, and Roberts 2010; Rosen 2010; Beheshti and Large 2013; Case and Given 2016).

As media users, new technologies offer us an unprecedented level of control (Napoli 2011; Jonsson, Stoopendahl, and Sundström 2015; Duff and Segijn 2019); we are no longer bound to scheduled television or radio broadcasts, and we do not need to wait for the morning paper to get the latest news. We literally have a limitless amount of information available at our fingertips, and we are free to choose where and when we want to consume information, what type of content we want to consume, as well as what to like or share and when and where to interact. However, as the boundaries between mediated and non-mediated experiences, between producer and consumer of media content, between personalized and excessively narrow media consumption, and between fake and objective news are becoming increasingly blurred, a new set of coping mechanisms are needed (Cole 2013; Beheshti and Large 2013; Case and Given 2016).

1.3.2. Fragmented media consumption patterns

Often, blame is put on mobile devices, such as the smartphone, and on social media for our changing media-related consumption patterns (Vahvanen 2018). Just as often we hear that the devices themselves do not affect our behavior; recent behavioral changes stem from how we *use* these devices. While both these suggestions may be true to a certain degree, it seems absurd that the current behavioral changes would all come down to a specific device, digital platform or any individual's weakness of character (ibid.). Mobile technology has radically altered the preconditions for media use on a societal level, and no matter how hard we try it is very difficult to avoid being affected by the current media landscape and the contemporary information jungle (Lindgren 2017; Vahvanen 2018).

As a consequence of trying to cope with the evolving media landscape and the constant information overload, our media consumption behavior has become fragmented. *Skimming* is a typical example of a fragmented media consumption pattern. When skimming, you rapidly glance through a text without thoroughly reading or comprehending what you are reading (Muter and Maurutto 1991). This is not a new phenomenon, but the contemporary information jungle urges this type of quick fix solution for sorting through and managing the vast amount of information available (e.g. Rowlands et al. 2008; Liu et al. 2014). Also, well established search engines such as Google further strengthen this trend by helping us find, structure, and manage information in a quick and simple way, often in the form of easily digested chunks rather than full text alternatives (Rowlands et al. 2008). In the past decades, concern has been expressed in relation to diminishing reading skills. Reading is something you have to learn and continuously practice. If skimming and short, fragmented pieces of information are taking over completely, reading skills in terms of deeper understanding and critical analysis of what we read will further decrease (e.g. Wolf and Barzillai 2009; Vahvanen 2018).

Another example of a fragmented media consumption pattern is the increased preference for audiovisual content (pictures and videos). The popularity and demand

for this type of digital content is constantly growing, especially via mobile devices (Kauppinen and Kivikoski 2015; Ericsson ConsumerLab 2017; Wescott 2018). For example, within the news media industry, the emergence of new, quick, convenient and increasingly audiovisual solutions and services fosters a new type of news consumption behavior (Napoli 2011; Potter 2012). This is manifested in, for example, increasingly mobile and fragmented news consumption patterns, a general unwillingness to pay for online news or digital subscriptions, and an increasing trend of news avoidance due to overexposure and perceived negative effect on mood (e.g. Newman et al. 2019). Similar changes have been observed within the music industry, which is only recently recovering from the rise of streaming services such as Spotify and Apple Music (e.g. Mansy et al. 2013; Hasan, Jha, and Liu 2018), and television industry, where traditional broadcasters are challenged by YouTube, Netflix and other online streaming services (YouTube and TV in the Nordics 2014; Jenner 2018; Merikivi et al. 2018; Hasan, Jha, and Liu 2018).

Online streaming services add to the trend of increasingly fragmented and "quick fix"-oriented behavior among media users (see e.g. Beheshti and Large 2013) by offering easily accessed and digested "snapshot" pieces and entertainment videos. However, these services have also served as a gateway to the new widespread trend of bingeing (or binge watching), i.e. watching more than one episode of a television show in quick succession (e.g. Jenner 2018; Merikivi et al. 2018; Flayelle et al. 2019). Bingeing has quickly turned into the predominant way of consuming TV series. This trend seemingly implies longer, intense periods of media use as opposed to otherwise more fragmented media consumption patterns. However, bingeing is often combined with other concurrent media or non-media related activities; therefore, this trend also augments the development of increasingly fragmented media behavior (ibid.).

"Quick fix"-oriented patterns can also be identified in the creation of online content and communication; consider, for example, the emergence of emoticons and emojis, the increasingly popular format of short Tweets (140 characters), and Snapchat videos (10 seconds), and the development of a completely new and widespread "Internet slang" consisting of mainly abbreviations such as LOL (Laughing Out Loud) or ROFL (Rolling On the Floor Laughing) (e.g. Fromm and Read 2018; Bich-Carrière 2019). Online communication embracing abbreviations and symbols is rapidly replacing personal face-to-face communication and even conversations over the phone (Vahvanen, 2018). But is 140 characters, 10 seconds or an emoji really enough to get the message across in the intended way?

1.3.3. A constant battle for attention

In this age of mobile technology, not only our behavioral patterns are affected and altered, but also the very way we think and process information (e.g. Napoli 2011; Cole 2013; Sanbonmatsu et al. 2013; Gillberg 2014). For example, if an office worker keeps checking his or her e-mails or Facebook several times an hour, maintaining his or her train of thought and focusing on any mentally stimulating or demanding work task

becomes challenging (Carr 2010). A simple cue, such as a Facebook notification, is enough to interrupt the work task at hand. Regular interruptions like this throughout the day, and continuously over weeks, months and years, threatens our capacity to focus on one thing at the time (Angell et al. 2016; Brasel and Gips 2017). A new mobile culture (Hammer et al. 2010) has invaded every part of our everyday lives, i.e. the way we communicate, the way we socialize, and the way we think. We use digital media at home, at work, during our free time and on the go, nearly every waking hour of the day. This means that an endless number of devices, services, digital notifications, social media updates, etc. constantly call for our attention. Gillberg (2014) refers to our modern media society as *the attention society*[3], which encompasses the entire economic, cultural and social system, and is characterized by a high degree of medialization and a fierce competition for our attention (see e.g. Gillberg 2014; Leysens, le Roux, and Parry 2016).

In the attention society, *attention*, *visibility,* and *reputation* are viewed as capital or value parallel to, or even exceeding, value measured in monetary terms (Eisenegger and Imhof 2008; Luoma-Aho 2012; Qualman 2013; Gillberg 2014). Hence, companies spend a fortune on brand building in order to stand out from the crowd and gain the attention of and recognition among their potential customers (Laurell and Parment 2015). Increasingly, individuals also create and develop their own personal brands on different social media platforms to gain the attention of their peers (Gillberg 2014). This means that our closest friends, family, neighbors and colleagues compete for our attention alongside the companies and their brands in the digital and physical environment. However, this constant attention-seeking does not necessarily create the expected outcome or value in terms of gained attention or economic profit (Rosen 2012; Gazzaley and Rosen 2016). For example, compulsively and narcissistically searching for attention or a "picture perfect" image in the social media environment easily leads to stress and anxiety related disorders (Qualman 2013; Gillberg 2014; Rosen 2012). At the same time, similar conditions emerge among those who fail to live up to the perfect pictures and these new social media "norms" (Rosen 2012).

Advances in mobile technology currently outrun cognitive development (Hansen 2019a; Hansen 2019b). Our brains become strained by trying to manage the growing number of external cues and calls for attention in the increasingly diverse and hectic digital media landscape. The human brain is not equipped for this constant stimulation (Rosen 2012; Gazzaley and Rosen 2016; Hansen 2019a). Rooted in Kahneman's Capacity Model of Attention (Kahneman 1973), for example, Leysens et

3 The concept is based upon the idea of the *attention economy* as presented by Davenport and Beck (2002), which is an extension of the so-called *information society*, a term that originally stems from the early 1970s (see e.g. Karvalics 2007).

al. (2016) state that we are incapable of paying attention to several things at the same time due to the limited capacity of our brain. This limitation leads to increased power of the media users in the attention society (Qualman 2013; Gillberg 2014); it serves as our very own "on/off button". As we cannot pay attention to everything, we have to choose what we pay attention to, what we ignore (Jonsson, Stoopendahl, and Sundström 2015), or what we simply unconsciously "block out" (Schiffman and Wisenblit 2015; Gazzaley and Rosen 2016). Dealing with this constant battle for our attention in our everyday lives is challenging. New attention and information management skills are needed; skills that we could never have imagined that we would need only a few years ago (e.g. Bowler and Nesset 2013; Laxman 2013; Vahvanen 2018).

1.3.4. New coping mechanisms

Studies on media and information behavior identify an array of novel *coping mechanisms* (also referred to as *personal information management skills*) that have emerged as a consequence of trying to cope with this new media landscape (e.g. Case and Given 2016). Observing visible and tangible effects of these contemporary behavioral changes among young adults served as the starting point of this entire research project. The previously presented observations related to marshmallows and coffee (section 1.1.) were made at the verge of the "invasion" of smartphones and social media platforms such as WhatsApp and Snapchat among young adults. The time period of this dissertation (2013–2019) encompasses many technological advances as well as subsequent intended and unintended behavioral changes. One significant (presumably unintended) consequence of the digital revolution concerns the emergence of a completely new generation of media behavior.

The new *Google Generation* is not defined by age, rather by a few predominant characteristics of media behavior, for example, quick fixes, fragmented behavioral patterns, and a constant desire to be available, updated and acknowledged (Rowlands et al. 2008; Geck 2006; Wellner 2000; Rideout, Foehr, and Roberts 2010; Rosen 2010; Beheshti and Large 2013; Case and Given 2016). In line with an increased dependence on search engines and other digital services, these types of characteristics have gradually emerged since the launch of Google and other similar search engines around the late 1990s and early 2000s (Vaidhyanathan 2012). Google has managed to create and maintain an active and loyal user-base, a brand that has been among the world's most recognizable and valuable during the past decades (Barwick 2019), and numerous new business opportunities linked, e.g., to Search Engine Optimization (SEO) (Baker 2017). However, one can question the intentionality behind the emergence of the evolving media consumption patterns and coping mechanisms among this widespread Google Generation. Was this part of the plan, or an unintended consequence of the concurrent digital development and business expansion?

A very concrete example of a recent unintended consequence relates to a new user interface innovation, the infinite scroll interface (Hansen 2019b). In a TV documentary on the effects of today's digital society on our brains[4], Aza Raskin, programmer and inventor of the infinite scroll interface, explains how modern features in social media are designed based on novel knowledge of the human brain. The infinite scroll interface allows the user to infinitely scroll through social media or web content without having to deliberately choose to change to the next page or the next post. This seemed a brilliant way of capturing and maintaining the user's attention and interest. However, Raskin later regretted introducing this invention, as it led to people wasting more than 200 000 human lifetimes per day on simply scrolling through social media content without experiencing any kind of "stopping cues". (Hansen 2019b). As most digital interfaces today are deliberately designed to get us "hooked" and engaged for hours, days or even weeks (Alter 2017; Morgan 2017; Hansen 2019b), there are numerous examples of similar unintended behavioral consequences. As these are becoming routinized and embraced by more and more people, fundamental changes become recognizable on an individual, organizational as well as a societal level.

Most of us lack appropriate cognitive skills, strategies and tools to efficiently cope with the rapidly evolving contemporary media landscape. One way of coping with the increasingly hectic and sometimes overwhelming attention society is to divide one's attention and try to do several things at the same time, i.e., engaging in *multitasking*. This seems like an efficient way to get more done in a limited amount of time, and a quite natural response to the information jungle and constant overload of calls for attention. One of the most prominent trends highlighted in contemporary media behavior research is, in fact, a steadily increasing level of *media multitasking* (Beheshti and Large 2013; Carrier et al. 2015; Case and Given 2016; Wu 2017; Aagaard 2015; May and Elder 2018). While many other consequences of digitalization (intended as well as unintended) will remain unaddressed here, the trend of increasing media multitasking, implying further fragmented behavioral patterns, increasingly blurred lines and escalating challenges of gaining, maintaining as well as managing attention is the focal point of this study. The decision to focus on media multitasking as the core concept was supported by empirical findings in the present study and the concurrent trend of rapidly mounting research within this specific area.

4 The documentary is available (in Swedish) at https://www.svtplay.se/video/23802911/din-hjarna/din-hjarna-sasong-1-vart-digitala-liv?start=auto (last accessed 8th November 2019)

1.4. Media multitasking: Mental processes and physical activities

Simply put, *multitasking* means performing two or more tasks simultaneously (Kirschner and Karpinski 2010), and this is something we do unconsciously nearly all the time. For example, toddlers learning to walk focus all their attention on moving one foot at the time while staying upright. The slightest interruption will disrupt their focus and most likely lead to a fall. Eventually though, after hours and hours of practice, walking becomes easier and easier, and eventually they will be able to also concentrate on other things while walking. As adults, a simple and well-rehearsed activity, such as walking, barely requires any cognitive processing and, therefore, allows us to do many other things at the same time; for example, talk, listen to music or chew gum. These types of basic multitasking skills develop over time and can be explained by the concept of *automaticity*. For example, if you repeatedly perform a certain simple task, the mental processes required become automated and do not require any active thinking or cognitive resources, which allows you to perform other simple tasks simultaneously. Any cognitive functions required for those tasks are "free" (see e.g. Kirschner and Karpinski 2010).[5]

In cognitive psychology, multitasking is described as the simultaneous execution of two or more concurrent mental processing activities (Kirschner and Karpinski 2010). Multitasking is primarily studied in traditional laboratory experiments where a person is asked to perform two tasks simultaneously. The tasks can vary in terms of goal and scope but need to be clearly distinct from each other. In this type of setting, it has been proven that some basic automated tasks, for example pressing a button when hearing a certain sound, can be mentally processed and performed simultaneously without any cognitive interference. (e.g. Carrier et al. 2015).

However, early research on multitasking (Borger 1963; Creamer 1963) found that two non-automated tasks cannot be processed or performed simultaneously, i.e.m dividing or switching attention between two or more such concurrent tasks will always cause some type of cognitive interference (Kirschner and Karpinski 2010). Most often, these interferences are recognized as the tiniest of delays in reaction times. *Switch costs* have been described as the cognitive "cost" of switching to a new task while performing another task (Carrier et al. 2015). Even though a switch cost, e.g. a millisecond delay in reaction time, may seem insignificant in a laboratory setting, this could have detrimental effects in other situations or contexts, for example while driving a car (e.g. Strayer, Drews, and Crouch 2006). In some studies, a clear

5 A similar, but more elaborated, explanation rooted in the *Threaded Cognition Theory*, was introduced by Salvucci and Taatgen in 2008. This approach is presented and discussed further in chapter 4.

distinction is made between *multitasking* and *task switching* (or *sequential task engagement*, i.e., switching quickly and frequently between tasks), because the latter implies successive processing at a fast pace rather than simultaneous processing (Kirschner and Karpinski 2010). Here, due to the similarities in the strain both these types of activities cause on our limited attentional capacity, task switching is acknowledged as part of the concept of multitasking (in accordance with e.g. Dzubak 2008).

When defining the concept of *media multitasking*, a distinction needs to be made between the cognitive definition described above and the actual physical activity of media multitasking in the everyday setting. A cognitive definition of multitasking is not considered apt when moving media multitasking studies outside the laboratory into the real world (Dzubak 2008). In accordance with this approach, media multitasking can be defined as engaging in several different simultaneous activities, out of which at least one is media related (Zhang, Jeong, and Fishbein 2010; Poplawska, Osowiecka, and Kramarczyk 2015; Szumowska et al. 2018).

In other words, media multitasking occurs when engaging in:

1) *two or more types of devices*, e.g., checking your smartphone while watching TV or listening to radio while working on your laptop (Szumowska et al. 2018);
2) *multiple activities on one single device*, e.g., checking e-mails and watching a video on your laptop at the same time (Yeykelis, Cummings, and Reeves 2014; Kononova and Chiang 2015; van der Schuur et al. 2015);
3) *some form of media while engaging in non-media activities*, e.g., checking your smartphone while having coffee with your friend (van der Schuur et al. 2015; Yeykelis, Cummings, and Reeves 2014).

In the modern media landscape, most media multitasking activities involve some form of digital or mobile media (e.g., laptops, tablets and smartphones). However, the concept of media can also include traditional forms of media (e.g., broadcast television, radio and printed newspapers)(e.g. Viitanen et al. 2012; Szumowska et al. 2018). In line with increased connectedness and presence online, especially via mobile devices, opportunities for media multitasking continues to grow, as does our propensity to engage in media multitasking activities (van der Schuur et al. 2015; Kononova and Chiang 2015; Salas Guzman 2016). The new mobile culture finds it natural and legitimate, if not even necessary, to engage in media multitasking activities (Hammer et al. 2010; Jacobsen and Foerste 2011).

However, while regular media multitasking keeps us updated, connected and provides us with a feeling of productivity, it also causes distractions (Brasel and Gips 2011; Dabbish, Mark, and González 2011; Adler and Benbunan-Fich 2013; Ralph et al. 2014; Aagaard 2015; Cain et al. 2016; May and Elder 2018). Due to our limited attentional resources (Kirschner and Karpinski 2010; Yap and Lim 2013; Leysens, le Roux, and Parry 2016), media multitasking activities have been found to negatively impact our executive functions which form the basis for our everyday behavior

(Moisala 2017). In fact, most prior research on media multitasking reports negative consequences on our memory capacity, comprehension, performance and our ability to focus (Bardhi, Rohm, and Sultan 2010; Dabbish, Mark, and González 2011; Ralph et al. 2014; van der Schuur et al. 2015; Carrier et al. 2015; Moisala 2017; May and Elder 2018). Frequent media multitaskers have been found to be more susceptible to feelings of overwhelm, over-stimulation, stress and exhaustion (Stone 2009; Kirschner and Karpinski 2010; van der Schuur et al. 2015). Some researchers even claim that media multitasking may represent a unique risk factor for mental health problems such as depression (Becker, Alzahabi, and Hopwood 2012), or Attention Deficit Trait (ADT) disorder (Wägar 2018).

Regardless of these well-documented and reported negative consequences, people continue to engage in media multitasking more and more every day (May and Elder 2018; Duff and Segijn 2019). Media multitasking is here to stay, and as online access becomes even faster and easier along with advances in mobile technology and services, our media behavior and attention spans will likely become even more fragmented and dispersed (Wu 2017; May and Elder 2018). A deeper understanding for this highly paradoxical behavioral trend is needed.

1.5. Outline of the dissertation

This *first chapter* contains an overview of the background to the research project and outlines the specific problem area.

The *second chapter* defines the scope of the dissertation and the study in terms of aim, central research questions and key limitations. Also, some key concepts are presented and defined.

The *third chapter* includes a discussion of the inductive research process as well as underlying methodological considerations and decisions. As the applied research approach is unusual within the area of media multitasking, the iterative longitudinal Grounded Theory inspired approach is thoroughly described, discussed and motivated.

In the *fourth chapter* a literature review on the core concept of media multitasking is presented. Central theoretical perspectives and empirical findings in prior media multitasking research within all three major areas of study (predictors, patterns and consequences) are presented and discussed. This is followed by a discussion on new perspectives within the media multitasking research field.

The *fifth chapter* provides an overview of key empirical findings on changing media behavior among young adults during 2013–2019. Four key emerging trends are highlighted and discussed from the perspectives of 1) identified patterns, 2) emerging trends, and 3) a brief overview of key theoretical concepts. To conclude the chapter, the aggregated theoretical dimension of disruptive everyday media multitasking is introduced and defined.

In *chapter six,* the concept of disruptive media multitasking is explored in terms of the informants' described relation to their own disruptive media multitasking activities and explanations (even justifications) for such behavior. Four profiles describing different ways of relating to disruptive everyday media multitasking are identified. To conclude the chapter, the aggregated theoretical dimension digital distraction is introduced.

Based on the empirical findings and the literature review, a new conceptual framework is developed and discussed in c*hapter seven*. The theoretical dimension of digital distraction is further explored, and some key issues for understanding and coping with everyday digital distraction are highlighted.

In *chapter eight*, the proposed framework and its implications are further discussed from different perspectives, including the academic and the marketing contexts. Furthermore, theoretical, methodological and practical contributions and implications are discussed, and suggestions for future research are presented.

Every chapter (except chapter 2) includes a section that features *personal observations* made throughout the time period of the study. While these observations are not really part of the actual empirical study, they are included to illustrate observed and highly tangible consequences of recent changes in media [multitasking] behavior and some personal thoughts on them.

2. THE SCOPE OF THE STUDY

This study approaches everyday media multitasking from a highly pragmatic perspective, addressing methodological as well as conceptual gaps in prior media multitasking research. This chapter provides a brief overview of these gaps and defines the aim and central research questions of the present study. Furthermore, the research approach and some key limitations and concepts are presented and defined.

2.1. Gaps in media multitasking research

Media multitasking is certainly not a new a phenomenon, but in line with the recent trend of increasing media multitasking behavior, the interest in this phenomenon has rapidly grown (see e.g. Carrier et al. 2015; Wu 2017). Media multitasking has been studied within an array of different disciplines, for example, cognitive psychology, human-computer interaction (HCI), information science, communication studies as well as in education and in marketing (Viitanen et al. 2012). Earlier research has focused primarily on three key areas: 1) patterns, 2) predictors, and 3) consequences (see e.g. Kononova and Chiang 2015; Szumowska et al. 2018). The last of these areas, consequences, is the most extensively studied area, primarily embracing cognitive psychology laboratory studies where a dual-task setup is used to explore cognitive strains caused by trying to perform two tasks simultaneously in a controlled setting (van der Schuur et al. 2015; Carrier et al. 2015; May and Elder 2018). Media multitasking research outside the laboratory has embraced the Media Multitasking Index (MMI)[6] developed by Ophir, Nass and Wagner (2009), aiming to identify heavy media multitaskers and map their reported behavioral patterns and consequences related to a few predetermined combinations of two media-related tasks (Carrier et al. 2015). These efforts have provided insights into differences in cognitive as well as performance-related effects between heavy and light media multitaskers (Ophir et al. 2009; Minear et al. 2013) as well as theories for providing an approximation of what happens in our brains when we perform two tasks simultaneously (Salvucci and Taatgen 2008; 2010).

However, media multitasking in the everyday context is much more complex than this (e.g. Ralph et al. 2014; Carrier et al. 2015). This is due to the fact that real-life multitasking most often entails more than two tasks and embraces a high degree of flexibility and conscious as well as unconscious prioritization (Carrier et al. 2015). Furthermore, media multitasking in different everyday contexts can lead to direct

6 For a more extensive discussion on the *Media Multitasking Index*, see section 4.2.2.

dangerous consequences; for example, while driving (e.g. Nijboer et al. 2016), in healthcare (e.g. Walter et al. 2014) and in aviation (e.g. Loukopoulos, Dismukes, and Barshi 2001). There is a need to further study everyday media multitasking to understand the potential risks as well as the factors in the environment that affect the decision of whether or not to media multitask (Janssen et al. 2015). Studies embracing this type of pragmatic approach to everyday media multitasking are quite rare; for example, van der Schuur et al. (2015) identify this as one of the most important gaps within the entire research field that needs to be addressed. For this, the highly controlled laboratory test setting and the traditional dual-task approach are not enough (van der Schuur et al. 2015; Carrier et al. 2015; Janssen et al. 2015). Researchers call for new methodological approaches and solutions to move media multitasking research out of the traditional laboratory setting (Carrier et al. 2015).

In addition to gaps in methodology, there is also a need for a more extensive focus on developing theoretical frameworks to advance the field (van der Schuur et al. 2015; Carrier et al. 2015; Janssen et al. 2015). Van der Schuur et al. (2015) and Janssen et al. (2015) suggest that very few studies on media multitasking encompass a clear theoretical framework. This is required for enhancing the cohesion and conceptualization of further media multitasking research (van der Schuur et al. 2015). While some fundamental models and theories may be relevant in some specific discipline or context, they often fail to embrace an increased need for a more holistic perspective, stepping away from only one specific theory, model, or proposition and opting for wider, more general and multidisciplinary frameworks instead (e.g. Benbunan-Fich, Adler, and Mavlanova 2011; Swedberg 2012; Carrier et al. 2015). Such general frameworks are needed to establish a common vocabulary, to identify differences between settings and to support meta-analyses (Janssen et al. 2015).

Overall, the field of everyday media multitasking studies is quite dispersed. Some fundamental research review articles on this topic were published in 2015, highlighting the need for new methodological approaches as well as conceptualizing efforts as mentioned above (see e.g. van der Schuur et al. 2015; Carrier et al. 2015; Janssen et al. 2015). Numerous efforts have been made over the years to bridge these gaps; however, recently published review articles still acknowledge the prevalence of similar gaps in media multitasking research (see e.g. May and Elder 2018; Aagaard 2019).

2.2. Aim and research questions

The aim is *to develop a conceptual framework for understanding digital distraction by exploring changing media behavior and perceived disruptive media multitasking among diginatives*. The framework is grounded in a longitudinal empirical media diary study conducted among university students between 2013 and 2019. Roughly 100 media diaries have been collected and analyzed annually, applying an exploratory research approach inspired by Grounded Theory (e.g. Corbin and Strauss 1990; Creswell 1998).

This exploratory study addresses the following key research questions:

- *How has the media behavior of diginatives changed between 2013 and 2019?*
- *How do diginatives describe and relate to their own media multitasking activities?*
- *Why do diginatives frequently engage in disruptive media multitasking?*
- *How can diginatives develop strategies to cope with digital distraction?*

The research questions have evolved over time in accordance with the progress of the inductive and iterative research process. The first question has guided the empirical data collection and analysis process throughout the entire study. The second question was introduced in conjunction with the decision to focus on media multitasking as the core concept[7] to gain a deeper understanding of this particular phenomenon. Two aggregated theoretical dimensions[8] are defined and introduced in the study, grounded in the empirical data analysis process, and influenced by the concurrent literature review: disruptive media multitasking and digital distraction. The third research question was included parallel to the recognition of the aggregated theoretical dimension of disruptive media multitasking. This question is derived from the theoretical framework related to media multitasking predictors. The fourth research question emerged in conjunction with the recognition of the aggregated theoretical dimension of digital distraction. This question served as inspiration for developing the conceptual framework, Dimensions of Digital Distraction, and for introducing the concept of digital metacognition into the study (see chapter 7).

2.3. Research approach

This study approaches the phenomenon of everyday media multitasking in a novel way. The study builds upon three fundamental assumptions:

1) To study changing behavior and trends, a *longitudinal perspective* is needed. This assumption is made in accordance with, for example, Singer and Willett (2003, p. 3), who state that change is pervasive in everyday life, that change occurs over time, and that longitudinal data are necessary for studying change.
2) To study *everyday media [multitasking] activities*, the activities and experiences, as recollected and perceived by the media users themselves,

7 This decision was made in 2016, after four rounds of data collection and analysis.
8 The concept of *aggregated theoretical dimension* refers to the inductive methodological framework developed by Gioia et al. (2013). See chapter 3 for a more elaborate discussion.

need to be acknowledged (without proposing any predetermined definitions or alternatives). This assumption is made in accordance with, for example, Bolger, Davis , and Rafaeli (2003) and Reis, Gable, and Maniaci (2014), who suggest that a new everyday experience-based logic is needed for capturing "life as it is lived" (Bolger et al. 2003, p. 580), and studying natural social-psychological activities or experiences as they occur "in the ebb and flow of everyday life" (Reis et al. 2014. p. 190).

3) By studying the behavior of *diginatives,* we may also gain a general understanding of evolving media multitasking behavior among other generations. This assumption is made in accordance with, for example, Rowlands et al. (2008), Voorveld and van der Goot (2013), and Kauppinen and Kivikoski (2015), who found that older generations rapidly are following in the footsteps of diginatives, in terms of adopting new mobile technology and altered media behavioral patterns.

The longitudinal and exploratory methodological approach inspired by Grounded Theory (e.g. Corbin and Strauss 1990; Creswell 1998) is applied in the present study to learn more about digital distraction, the nature of disruptive everyday media multitasking activities and the underlying decision process. The aim is not to offer conclusive answers or generalizable results, rather, to discover new things and interesting new entry points (e.g. Burrell 2009) that can serve as a foundation for future theorizing and research efforts (e.g. Corbin and Strauss 1990; Swedberg 2012; Gioia, Corley, and Hamilton 2013). The research process is iterative by nature and has been continuously developed and adjusted along the way according to empirical findings and insights as well as concurrently published research related to the topic. For example, the very focal point of the entire research project has been adjusted several times, starting from an ambition to study changes in media behavior on a general level, and moving towards the later emerging core concept of media multitasking and aggregated theoretical dimensions of disruptive media multitasking and digital distraction.

This study does not contribute to advancing cognitive research on media multitasking; rather, it offers a new perspective for further research related to this phenomenon by developing and proposing a conceptual framework rooted in Activity Theory, and emphasizing some key dimensions of everyday media multitasking that have been overlooked in prior studies. The framework does not contribute to any deeper knowledge of neurological responses or cognitive resource allocation in everyday media multitasking, but it gives us better insights into why we multitask with media to begin with, and why it is difficult to stop even though we may be aware of the disruptive and potentially damaging consequences.

2.4. Limitations

The quite ambitious aim of the study implies that the researched topic needs to be carefully delimited. Similar to the focal point of the study, some limitations have been

altered and adjusted along the way. Here, a few geographical and key methodological limitations related to the scope of the entire study are presented, discussed and motivated. Additional limitations associated with theoretical perspectives, methodological considerations, and practicalities of the study are discussed in chapters 3 and 4.

Geographical limitation: the Finnish media market

This study is conducted in, and characterized by, the Finnish media market. In general, Finland has played an important role and been a forerunner in the development and the emergence of the new mobile media landscape (Statistics Finland 2007). The early development of novel mobile media consumption habits among the Finnish population is closely connected to the success of Nokia in the late 1990s (Statistics Finland 2007; Nokia 2017). In 1999, there were more Finnish households with mobile phones than those with traditional landline phones. By 2007, less than ten years later, nearly every person of working age in Finland owned a mobile phone (Statistics Finland 2007). Around the same time, the smartphone was introduced on the world market and almost immediately became a hit (Tefficient 2017). Though the former Finnish flagship of mobile phones, Nokia, ran into serious trouble and failed to keep up with its competitors on the rapidly rising smartphone market, the Finnish population eagerly adopted this new technology. By 2013, the majority of Finnish mobile phone users owned and used a smartphone (Idean 2013). Even today, Finland still remains at the top of the charts concerning mobile technology and development of technological infrastructure that allows for further increased mobile content usage (e.g. Tefficient 2017; Newman et al. 2018; Newman et al. 2019). Currently, Finland is also a forerunner in the development of 5G technology and new devices, services and solutions for this new, even smoother and faster mobile environment.[9] The Finnish media market is a natural limitation since all participants in the empirical media diary study are part of this particular market.

Methodological limitation: diginatives

The term "digital natives", or "diginatives", was introduced in 2001 to describe the new generation of students born in and after 1990 (Prensky 2001). This generation is also often referred to as "Generation Z", "the iGeneration" and "Generation M" (see e.g. Geck 2006; Rideout, Foehr, and Roberts 2010; Beheshti and Large 2013; Kiviluoto

9 The media diaries have also been used as input to a 5G development research project funded by Business Finland, Wireless for Verticals (WIVE), as part of a continuous process of identifying and monitoring trends in mobile media behavior. Quarterly media consumption trend reports from the years 2017 and 2018, including a few preliminary results from the media diary study can be found at https://wive.turkuamk.fi/documents/ (last accessed 11th November 2019).

2015). The young adults of the diginative generation were born around the same time as the first graphical web browser was introduced on the market; they are the first generation to be born into a truly digital world (Geck 2006). Thus, diginatives have grown up with new technologies and have spent their entire lives using tools of the digital age (Kiviluoto 2015).

Being constantly connected when growing up, diginatives are often believed to have evolved into natural digital multitaskers (see e.g. Geck 2006). However, many studies report severe negative effects of frequent multitasking among children and youngsters due to their young age and the corresponding critical stages of their cognitive development (see e.g. Baumgartner et al. 2014; Crone and Konijn 2018; May and Elder 2018). People of all ages are affected by the modern disruptive media landscape, but according to, for example, Rowlands et al. (2008), the effect on young people is assumed to be greater than on older generations. Recent studies and reports suggest that the smartphone, especially, has radically changed everything from youngsters' social interactions to their mental wellbeing (e.g. Twenge 2017). Some even fear that the smartphone has destroyed this entire generation (e.g. Twenge 2017; Vahvanen 2018). These reports and expressed concerns have fueled an increased research interest in this particular generation, and today the majority of empirical studies on media multitasking focus on the diginative generation (or younger generations) (see e.g. Rosen 2010; Jacobsen and Forste 2010; Voorveld and van der Goot 2013; Moisala 2017).

Most studies indicate that, while diginatives certainly exhibit traits such as excessive everyday media multitasking and heavy dependence on mobile technology, in general, they are not really that different from older generations (e.g. Voorveld and van der Goot 2013). Some even claim that the distress and debate raised concerning the effects of technology on diginatives is overestimated, even somewhat of a myth (see e.g. Selwyn 2009; Margaryan, Littlejohn, and Vojt 2011). Still, this is an interesting generation to study due to 1) their frequent media multitasking behavior (e.g. May and Elder 2018), 2) their critical cognitive developmental stages (e.g. Crone and Konijn 2018), and 3) the fact that they have no real recollection of a time without constant, quick, and convenient access to the Internet.

Even though age is used here as a characteristic in defining the diginative generation, the new generation of media behavior as described earlier is not really defined by age. While young people in general may be somewhat faster in terms of adopting new technologies and digital services, older generations are catching up at a staggering pace (e.g. Voorveld and van der Goot 2013; Kauppinen and Kivikoski 2015). Rowlands et al. (2008) suggest that sooner rather than later, we all become part of the Google Generation. No efforts will be made to compare diginatives to any other generations. The study is delimited to diginatives because of the reasons mentioned above, and because of convenient access to young adults in the university context.

Methodological limitation: media diaries

Between 2013 and 2019, approximately 100 media diaries were collected annually as part of this longitudinal study. These constitute the foundation of the entire dissertation. However, throughout the time period of the study, several parallel and complementary data collection activities related to media behavior have been conducted. In the first few years of the study, the EDGE Research Group at ÅAU, conducted questionnaire studies on, for example, social media use and attitudes among young adults, and on mobile media use in general across different generations. In addition, a series of focus group interviews on media use has also been conducted at ÅAU between 2015 and 2018. Participants in these focus groups have mainly been young adults of different nationalities, mostly students at ÅAU.

Furthermore, different types of additional methods for data collection, for example, mobile tracking systems or applications and more systematic observations or other action-oriented methods, have been discussed as part of widening the perspective on data collection related to everyday media [multitasking] behavior over the years. Also, possibilities to conduct diary studies among other age groups have been considered, and collaboration on media diary studies among young adults in other Nordic countries have been initiated.

Continuously throughout the process, possibilities to include already collected additional data, and opportunities to widen the scope of the study through new methodological approaches, have been thoroughly considered. However, in the end, due to practical limitations associated with completing the dissertation within a reasonable time frame and amount of pages, and with staying true to the overall aim, all other data collection efforts beside the media diaries (and participant observations to a certain extent) have been excluded from this study. These will be addressed in future research projects and scientific articles to provide wider, more varied and generalizable results and insights.

Methodological limitation: the academic context

Digitalization has been the topic of an ongoing discussion within universities and academia in the past decades (see e.g. Baumöl and Bockshecker 2017; Liukas 2018; Efimov and Lapteva 2018; Kim 2019). What does digitalization really mean for students, teachers and researchers? While new initiatives and processes have been frequently introduced lately, an earlier almost blind trust in digitalization and its benefits have been increasingly questioned (Aagaard 2017; Vahvanen 2018). For example, Vahvanen (2018) claims that the benefits of digitalization in learning and learning environments have been critically overrated. However, there is still much untapped potential for digitalization within the academic context, especially using social media and other social platforms as part of enriched learning experiences (e.g. Saykili 2019). What happens, though, when media and multitasking become a natural part of any learning task or learning environment?

This question has been addressed by many researchers in the past decades, making the academic context the most studied area within prior media multitasking research (see e.g. van der Schuur et al. 2015). Studies have been conducted on the effects of media multitasking on academic outcomes, study-related attitudes, and behavior and perceived academic learning (ibid.). Results show that frequent media multitasking leads to negative consequences concerning performance and learning (Carrier et al. 2015). Uncapher et al. (2017) claim that gaining more knowledge about frequent media multitasking among young adults in order to understand the implications of it in 21st-century learning environments is an urgent matter. While observed changing media behavior among university students was the starting point for this dissertation, the academic context is treated as a mere limitation in terms of the empirical study. Implications of the empirical findings within the academic context will be addressed further in the final chapter.

Methodological limitation: the marketing context

Similar to the academic context, the marketing context is not really prioritized as an essential part of the discussion in the dissertation. It is primarily considered a limitation in terms of the empirical study in the sense that the participants in the media diary study all participate in a basic course in marketing at Åbo Akademi University. As part of the course, the diary task has been used to inspire discussions on the relation between the current media landscape and the field of marketing. Some very interesting thoughts derived from these discussions, which will be addressed in the final chapter.

The inclusion of a discussion on this particular context is also supported by a recent augmented interest in the phenomenon of media multitasking in consumer behavior research and advertising and marketing communication studies (e.g. Duff and Segijn 2019). The fact that it has become increasingly challenging to catch the attention of and engage consumers, especially young consumers, in the digital media landscape has also led to an increased interest in this phenomenon among marketing practitioners and advertisers (e.g. Bardhi, Rohm, and Sultan 2010; Angell et al. 2016). For example, advertising studies have found evidence of decreased recall and recognition when multiple tasks are attended to simultaneously (e.g. Armstrong and Chung 2000; Bellman, Steven et al. 2012; Bellman et al. 2014; Duff and Sar 2015) as well as evidence of reduced comprehension and persuasion effects (e.g. Jeong and Hwang 2012).

However, some researchers have also found more positive results; for example, young consumers eventually learn to cope with paradoxical experiences of media multitasking and thereby develop new skills for attending to and decoding marketing-related media content (e.g. Jenkins 2006; Bardhi, Rohm, and Sultan 2010).

Furthermore, the phenomenon of second screening[10] has been found to even improve consumers' performance on memory tests on advertising recall, recognition and comprehension (Jeong and Hwang 2012; Angell et al. 2016). This would imply that, for example, embedded marketing and cross- or multichannel advertising strategies may be efficient in certain media multitasking contexts, and that media multitasking is not always bad, at least not for advertisers.

2.5. Key concepts

A few central concepts are presented and defined here. Additional definitions and discussions on specific concepts will be found throughout the dissertation.

Diginatives

The concept *diginatives* is used here to describe young adults born in or after 1990 (in accordance with e.g. Prensky 2001).

Media

The central concept of *media* is loosely defined here as all channels (digital, analog as well as mixed channels), through which information is shared and attention is sought and gained (in accordance with e.g. Gillberg 2014). However, this concept will be further addressed and discussed later in the dissertation as defining media constitutes a central part of the media diary task (see e.g. section 5.3.1.). In the media diary, the informants were encouraged to first define the concept of media, and then follow that definition when documenting their daily media use. This allows for a varying definition, which will also be reflected in the discussion throughout the dissertation.

Media behavior

The concept of media behavior is essential in this study. Prior definitions are most often linked to a specific form of media, for example, electronic media behavior (Meyrowitz 1986), Internet behavior (LaRose and Eastin 2004), or social media behavior (Kilian, Hennigs, and Langner 2012; Heinonen 2011), and/or deeply rooted in one specific theoretical discourse, for example, Mass Communication Theory (McQuail 1983), Social Cognitive Theory (Bandura 1986; LaRose and Eastin 2004) or Uses and Gratification Theory (Blumler and Katz 1974; Katz, Blumler, and Gurevtich

10 Second screening refers to using "a digital device (i.e., smartphone or laptop) while watching television to access the Internet and social network sites in order to obtain more information about or discuss the program" (Gil de Zúñiga et al. 2015).

1974). Here, the concept of media behavior is not tied to any specific theoretical framework or form of media; rather, it is used in a general and broad sense to include all types of interactions with and uses of media content, services and technology. *Media behavior* describes how we behave with media in our everyday lives.

Mobile technology

Frequently, present-day studies use the smartphone as the focal point when studying media multitasking behavior in an everyday context. Though the smartphone certainly has manifested its place as an almost invaluable tool and companion in our everyday lives, there is a vast number of other mobile devices and technological innovations that have affected, and will continue to affect, the nature of our social interactions and behavior (Duke and Montag 2017). For example, laptops and tablets are mobile devices preferred by many users for many different purposes (Carrier et al. 2015). Wearable technology and wearable devices such as smartwatches and activity trackers are also becoming increasingly popular, as well as devices featuring virtual reality (VR), augmented reality (AR) and mixed reality technologies (Ericsson Consumerlab 2017). Furthermore, Internet of Things (IoT) appliances, allowing devices to communicate directly with each other, are also a rapidly growing trend on the consumer market (ibid.). This study is not restricted to any one device or form of mobile media; the term *mobile technology* encompasses all types of portable digital technologies. As part of the Activity Theory discourse, the concept of technology is used in a quite broad sense to include all forms of technological mediating tools. In the context of this study, concepts such as *technology* (see e.g. chapter 7) and *technology-induced* (see e.g. section 6.3.2.), refer to *mobile technology* as defined above.

Media diary

A diary can be defined as "a record of events, transactions, or observations kept daily or at frequents intervals" or as "a daily record of personal activities, reflections, or feelings" (Merriam-Webster, 2020). Journal is often used to describe an equivalent "record of experiences, ideas, or reflections kept regularly for private use" (ibid.). Here, the term diary is preferred over journal, because it is more frequently used to describe a similar data collection methodology as the one applied in the present study (see e.g. Bolger, Davis, and Rafaeli 2003; Czerwinski, Horvitz, and Wilhite 2004; Voorveld and van der Goot 2013; Kirchberg, Roe, and Van Eerde 2015). A *media diary* is defined as a daily record of personal media activities and reflections on these.

Media multitasking

Media multitasking is defined here as a physical activity that includes engagement in 1) two or more devices, 2) multiple activities on one single device, or 3) some form of media while engaging in non-media activities (Yeykelis, Cummings, and Reeves 2014; Kononova and Chiang 2015; van der Schuur et al. 2015; Szumowska et al. 2018). *Everyday media multitasking* implies media multitasking activities that are recurrently performed as part of our everyday lives.

Distraction/interruption

In prior media multitasking literature, media multitasking activities are often described as *distractive* or *interruptive* (e.g. Carrier et al. 2015; van der Schuur et al. 2015; Aagaard 2019). These concepts are defined here in accordance with the Cambridge Dictionary (2020). *Distraction* is "something that prevents someone from giving their attention to something else." *Interruption* is "an occasion when someone or something stops something from happening for a short period."

Disruptive media multitasking

Disruption is most often associated with a definition such as "changing the traditional way that an industry operates, especially in a new and effective way" (Cambridge Dictionary 2020). Concepts such as *disruptive industries* and *disruptive technologies* are becoming more and more commonly used. However, the concept of disruption can also be defined as "the act or process of disrupting something: a break or interruption in the normal course or continuation of some activity, process, etc." (Merriam-Webster 2020), as "causing trouble and therefore stopping something from continuing as usual" (Cambridge Dictionary 2020) or as "a continuing act of disorder" (ibid.). In this study, the concepts of *disruption* and *disruptive* are associated with the latter definitions and describe distractive or interruptive media multitasking activities which are repetitively performed and subsequently alter our "usual" everyday behavioral patterns. While media multitasking can be both distractive and interruptive (see definitions above), the concept of *disruptive media multitasking* is introduced in this study to illustrate the repetitive and habitual nature of distractive and interruptive everyday media multitasking activities, which leads to identified and experienced problematic consequences.

Digital distraction

In prior media multitasking research, *digital distraction* is often associated with technology-induced interruptions and subsequent distraction that prevents someone from concentrating on something else (e.g. Carrier et al. 2015; Agrawal, Sahana, and Dé 2017). Here, the concept is defined as distraction associated with everyday activities that 1) involve multitasking with digital media, and 2) are perceived as disruptive and problematic by the person engaging in the activity. While mobile technology is a central part of the activity, the activity is not necessarily triggered by a technology-related cue; rather, digital distraction is a consequence of disruptive media multitasking. Following the logic of preferring disruptive media multitasking over distractive media multitasking (see definition above), the concept of *digital disruption* may seem an alternative option. However, this particular concept is closely associated with the industry- and business-oriented definition of disruption and may easily lead to misunderstandings. Therefore, the concept of digital distraction is introduced to describe the disruptive consequences of everyday media multitasking on an individual as well as societal level.

3. METHODOLOGICAL CONSIDERATIONS

We touch our mobile phone 2600 times per day and pick it up approximately every 10 minutes – during all waken hours. And the waken hours are seemingly not enough, one out of three checks their phone at least once during the night too. (Hansen 2019a)

This study encompasses the years 2013–2019, a time period which has been characterized by rapid development and implementation of technology such as smartphones and wearables in our everyday lives. It also features the rise and struggles of some of the largest and most impactful social media platforms to this day, such as Facebook, WhatsApp, and Snapchat. Novel perspectives and approaches are needed to capture the increasingly hectic media landscape and attention society (e.g. Law 2004; Van Maanen 2006; Van Maanen 2011; Czarniawska 2013; van der Schuur et al. 2015). For example, how can we capture and study 2600 daily smartphone interactions? How do we approach fragmented and changing media behavior?

We need to rethink traditional research methods in order to capture the quickly evolving patterns of media consumption and sociality online (Lindgren 2017). This is especially the case within media multitasking research where traditional experiential dual-task methodology fails to provide a deeper understanding of media multitasking in an everyday context (see e.g. Benbunan-Fich, Adler, and Mavlanova 2011; Ralph et al. 2014; van der Schuur et al. 2015; Segijn et al. 2017). Jensen and Aagaard (2018) suggest that HCI research has evolved according to three waves. The first wave is characterized by cognitive science and individual factors, whereas the second wave acknowledges a shift from human factors to human actors and mediated activities (ibid.). In the third wave, technology is situated in everything we do, and interaction has become phenomenologically situated, tapping into habitual and embodied activities (e.g. Harrison, Tatar, and Sengers 2007; Jensen and Aagaard 2018). A similar development can be recognized within media multitasking research (primarily from an HCI perspective).

The longitudinal inductive research design proposed here is fundamentally different from the first wave of media multitasking research, moving away from cognitive experiments towards a highly exploratory research approach. From a methodological perspective, this study can be positioned somewhere in between the second and the third wave, due to its activity-centered and cross-disciplinary (not pure HCI) approach. Inspired by Grounded Theory logic (e.g. Corbin and Strauss 1990; Creswell 1998) and the inductive methodological framework developed by Gioia et al. (2013), this exploratory study widens the existing methodological and theoretical debates within the field through novel perspectives and empirical findings. Furthermore, the longitudinal scope offers valuable insights into recent changes and emerging trends in media multitasking behavior among diginatives. This chapter encompasses a discussion on key methodological considerations and the iterative and "messy" research process.

3.1. Observation: A new perspective is needed

In the fall of 2018, I invited a guest lecturer to my marketing course. When the guest lecture had started, I decided to conduct an experiment: I took a seat at the very back of the auditorium and started observing what the students were actually doing. This particular auditorium is designed like a movie theater with several fixed rows of chairs and small tables. The view from the back of the room was good; not only did I see the guest lecturer, but I also saw everything that the students in the room were occupied with. This proved to be a highly interesting and enlightening experience.

I can't say that I was particularly surprised to see a vast number of screens with completely irrelevant content among the students. Still, it was a real eye-opener. The lecture was highly relevant for the upcoming course project. Still, some students already had their "parallel activity" on their laptop or smartphone ready to go before the lecture had even started. Some students tried to follow the lecture for a while, but after some 5 minutes it seemed like they gave up and gave in to the impulse of checking something on the laptop or smartphone instead. Only a handful of students (out of about 100) took notes, and a few took photos with their smartphones of slides they thought were important.

What surprised me the most was the complete ignorance among the students to the fact that very little attention was paid to the lecture or the lecturer. Is this really how students attend lectures now? They were there – but not really there. Honestly, I do admit I have done the same thing myself several times, i.e. sitting in a classroom not really focused on the lecture. However, when I got bored, I stared out the window for a while and then got back to making notes. Now, very few seemed capable (or even interested) in turning away their focus from their various screens and back to the lecture. It seemed that once the focus was gone, there was little chances to regain attention again. Also, I started thinking that if I were to ask the students after the lecture what they remembered from the lecture, they probably wouldn't be able to remember or explain much. Furthermore, if I would have asked the guest lecturer afterwards what the students were doing during the lecture, she probably couldn't say much either. I guess she would have noticed that most of them were focused on something else, but you need to swap your perspective and move to the back of the classroom to understand what's really going on.

What does this mean? Impaired learning? Inefficient learning methods and environments? Sure. But, for me, this simple experiment served as a reminder of the importance of looking at things and situations from different perspectives. To discover new and efficient ways of working, or in this case learning, we need to take a step back, swap perspectives and really try to understand what's going on. The same goes for media multitasking; if we really want to understand motivations for disruptive everyday multitasking behavior, we need to look at this from a new perspective.

3.2. A pragmatic Grounded Theory approach

When embarking on any research journey, we are facing a number of fundamental philosophical and methodological considerations. As an initial step in the research process, for example, Guba and Lincoln (1994) highlight the distinction between different central *research paradigms* and the importance of aligning the study to any one of these as guidance for further inquiry and questions of method. Research paradigm is here defined as "the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways" (Guba and Lincoln 1994, p. 105). The definition includes: 1) ontological assumptions, i.e. beliefs about the nature of the social world and what can be known about it, 2) epistemological assumptions, i.e. the nature of knowledge and how it can be acquired, as well as 3) methodological assumptions, i.e. the process of conducting, studying, and interpreting research (Guba and Lincoln 1994; Crotty 1998; Snape and Spencer 2003; Fleetwood 2005).

Prior research within the field of media multitasking (mostly conducted within the field of cognitive psychology) has primarily embraced a *positivist tradition*[11] (see e.g. Ralph et al. 2014; Aagaard 2015; van der Schuur et al. 2015). In this study, focus is shifted towards exploring media multitasking activities in an everyday context; in accordance with, for example, Leitch et al. (2010), Creswell (1998), Mackenzie & Knipe (2006), the very nature of the aim steers the research design away from the positivist tradition, and into the *interpretive tradition*.[12] Interpretive (or constructivist) research often embraces *inductive reasoning*[13], a qualitative methodological approach and primarily qualitative data collection methods (e.g. Creswell 1998; Snape and Spencer 2003; Scotland 2012). However, this traditional distinction between opposite research paradigms can be questioned (e.g. Kristensson Uggla 2019). Is there really such a thing as "pure" positivist, or interpretive, research methods?

11 The positivist paradigm is traditionally associated with the natural sciences and adopts an ontological position of realism, and an epistemological position of objectivism (e.g. Scotland 2012). Furthermore, the positivist methodology leans primarily towards quantitative data and data collection methods, as well as deductive reasoning (e.g. Saunders, Lewis, and Thornhill 2009; Scotland 2012)

12 The interpretive tradition is the dominant paradigm within social sciences, leaning towards an ontological stance in relativism and an epistemological position of subjectivism, which is based on real world phenomena (e.g. Snape and Spencer 2003; Scotland 2012).

13 While deduction is said to generate propositions and hypotheses from a theoretical perspective, induction looks for patterns and associations derived from observations of the world. Induction is generally acknowledged as the predominant approach within qualitative research. (e.g. Snape and Spencer 2003)

Snape and Spencer (2003, p. 1) argue, that "it is important to be aware of the philosophical debates and the methodological developments arising from them in order to secure the quality of the research produced (and therefore the degree to which its findings are accepted, and by whom)", but paradigm "purism" may well undermine the researcher's ability to choose and implement relevant research designs for addressing the posed research questions. The *pragmatist paradigm* stems from this critique and is not committed to any one system or reality (e.g. Snape and Spencer 2003; Mackenzie and Knipe 2006). Within social sciences, this paradigm is influenced by, for example, Dewey's (1859–1952) pragmatism philosophical tradition. Pragmatists emphasize the importance of choosing the appropriate methods for addressing and understanding specific research questions and issues on a practical level (e.g. Creswell 1998; Snape and Spencer 2003; Seale 2012; Maxwell 2013; Lindgren 2017). The methodological pragmatism approach accepts both qualitative and quantitative methods as part of the researcher's toolkit, which forms a basis for a mixed methods research logic, without assigning itself to any particular philosophical tradition (Snape and Spencer 2003).

If assigning this study to any a priori defined paradigm, *pragmatism*, would be closest at hand. This exploratory study aims at learning more about what is going on and what meanings people give to their actions without explicit preconditions or expectations (e.g. Schutt 2014). While this approach cannot offer results that are generalizable to any population at large, it can offer significant insights into specific situations (ibid.) and new interesting entry points into the researched phenomenon (Burrell 2009). However, to truly gain new insights and find new entry points, the process requires 1) openness towards changing the direction of the study along with discovering new data and new insights, and 2) flexibility in choice, usage and adaptation of research methods (Saunders, Lewis, and Thornhill 2009). Consequently, the research process becomes iterative and often quite "messy" (e.g. Law 2004).

As mentioned, media multitasking research is currently moving into a third wave (or paradigm). Jensen and Aagaard (2018), propose a postphenomenological approach as appropriate for addressing and studying technology as an integrated part of our everyday lives in the rapidly evolving media landscape. Postphenomenology can be defined as a philosophical method for studying human-technology interactions and relations, rooted in phenomenology and pragmatism (e.g. Ihde 2012; Zwier, Blok, and Lemmens 2016). Ihde (2012) suggests that adopting a pragmatism perspective is essential for advancing the entire research field and the limited phenomenological approach (see also e.g. Zwier, Blok, and Lemmens 2016; Jensen and Aagaard 2018). This study brings inspiration from this postphenomenological philosophical perspective in terms of acknowledging the importance of pragmatism and of the lived and embodied experiences of the researched phenomenon (in accordance with e.g. Starks and Brown Trinidad 2007). However, the iterative and quite "messy" research approach is also influenced by the sociological Grounded Theory (GT) perspective, defined as "a general methodology for the discovery of theory" (Holton and Walsh 2017). The goal of GT is "to develop an explanatory theory of basic social processes,

studied in the environments in which they take place" (Glaser and Strauss 1967; Starks and Brown Trinidad 2007, p. 1374).

The GT approach was outlined by Glaser and Strauss (1967) as a reaction to the dominant positivist and almost exclusively quantitative approach within social sciences at the time (see e.g. Bryant 2009; Seale 2012). In the classic GT approach, the researcher is open to discovering latent patterns as the basis for theorizing and explaining social behavior (e.g. Corbin and Strauss 1990; Creswell 1998; Holton and Walsh 2017). Seale (2012, p. 393) defines the GT approach as "a set of techniques which emphasize the creation of theoretical statements from the inspection of data", most often large sets of qualitative data. This approach suggests a sequential research process including several periods of data collection as well as analysis in the form of coding and categorizing (e.g. Creswell 1998; Gioia, Corley, and Hamilton 2013; Holton and Walsh 2017).

Acknowledged strengths of the GT are its systematic approach to empirical data generation, coding and categorization (Holton and Walsh 2017) and its relevance in practice-centered disciplines and studies (Bryant 2009). New theoretical insights, whether in the form of grand theories or conceptual models, are gained from systematically exploring people's practical understanding, actions and interactions in social settings (Creswell 1998; Bryant 2009). However, the GT approach has also been questioned and criticized, for example, for its fundamental "inductivist self-misunderstanding" (Kelle 2005; Reichertz 2009). Also, quite shortly after the introduction of the initial GT approach, which was a collaboration between Glaser and Strauss, GT split into two different directions: the "Glaserian" (a more classic approach true to its origins) and the "Straussian" (a more conceptually descriptive approach that encourages directive inquiry), which has led to subsequent confusion and criticism (Boychuk Duchscher and Morgan 2004; Reichertz 2009; Bryant 2009). GT has been associated with inductive reasoning since the very beginning, largely due to the self-professed radical stance against the predominant deductive approach in the 1960s (Bryant 2009). The fundamental assumption is that theoretical or conceptual models are *grounded* in empirical data, i.e. concepts *emerge* from the data and theories *emerge* from the concepts as result of an inductive process (ibid.). The "inductivist self-misunderstanding" refers to this essential assumption made by the founders, which has later been thoroughly questioned (even by the founders themselves) and has led to confusion among those adopting the GT approach (Reichertz 2009).

While inductivism still plays an important role in current GT research, the premises of the radical inductive stance of the original approach need to be questioned. For example, it is crucial that researchers understand that they take an active role in generating the data, it is not a question of "harvesting something that is naturally occurring" (Bryant 2009). Also, the suggestion that "researchers should not immerse themselves in the authorized literature, should not prepare hypotheses for testing and validation, should aim primarily at developing their own concepts and categories as a result of some personal and direct engagement with a specific research domain, rather than from secondary or tertiary sources" (Bryant 2009) needs to be

reconsidered. For example, Latour (1987) stresses that some sort of prior knowledge of the researched phenomenon is always needed, at least to decide when and where to start and when and where to end the research process.

It has been suggested that *abductive reasoning*[14] would need to be incorporated in the GT approach as a means of addressing the "inductivist self-misunderstanding" (see e.g. Reichertz 2009; Bruscaglioni 2016). The fact that most often a certain degree of deduction, abduction, as well as induction is involved at different stages of any qualitative research process needs to be acknowledged (e.g. Snape and Spencer 2003) and later GT methodology literature does, indeed, address this issue (see e.g. Corbin and Strauss 1990; Boychuk Duchscher and Morgan 2004; Holton and Walsh 2017). However, the GT approach has also been linked to the pragmatist perspective as a means of re-assessing some central features that have been subject to critique and disparate interpretations (Bryant 2009). Pragmatism offers opportunities to reassess some of the more radical and awkward aspects of GT (ibid).

This study can be described as a pragmatic Grounded Theory study, drawing inspiration from the GT approach for the systematic data analysis process and the subsequent theorizing efforts (while acknowledging the above-mentioned shortcomings of GT) and approaching the researched phenomenon in a highly pragmatic, iterative, exploratory and open-minded manner. Rather than guided by any specific philosophical paradigm, the research design is steered by three underlying assumptions (see also section 2.3.) which will be addressed and discussed next:

1) to study changing behavior and trends, a *longitudinal perspective* is needed (in accordance with Singer and Willett 2003);
2) to study *everyday media [multitasking] activities*, the activities and experiences, as recollected and perceived by the media users themselves, need to be acknowledged (without proposing any predetermined definitions or alternatives) (in accordance with Bolger, Davis, and Rafaeli 2003; Reis, Gable, and Maniaci 2014);
3) by studying the behavior of *diginatives,* we may also gain a general understanding of media multitasking behavior among other generations (in accordance with Rowlands et al. 2008; Voorveld and van der Goot 2013; Kauppinen and Kivikoski 2015).

14 Combining both deduction and induction as part of the research process can be described as abductive reasoning (Snape and Spencer 2003). However, for example, Dubois and Gadde (2002), Reichertz (2009) and Mantere and Ketokivi (2013) suggest that abduction should be considered more than a mere combination of deductive and inductive approaches. Abduction is an iterative process where the original framework is successively modified as a result of unanticipated empirical findings, as well as theoretical insights gained throughout the process (Dubois and Gadde 2002).

3.3. A longitudinal research design

In addition to the exploratory nature of this study, what really sets it apart from most prior media multitasking studies is the longitudinal perspective. The study embraces a vast set of empirical data collected annually between the years 2013 and 2019. While longitudinal research is an emerging trend within the field (see e.g. Baumgartner et al. 2018; van der Schuur et al. 2018), the time frames are usually quite different from this study. For example, Baumgartner et al. (2018) conducted two longitudinal studies on the relation between heavy media multitasking behavior and attention problems; one study spanning over three months, the other one over six months. This study spans over seven years, which implies many unique opportunities, but also certain challenges.

One of the major advantages of longitudinal research is that it offers a nuanced understanding of ongoing phenomena that evolves over time (Carduff, Murray, and Kendall 2015). The longitudinal design that this study embraces, offers valuable insights into changes and trends in diginatives' everyday media multitasking behavior that have taken place over the past seven years. A shorter time frame or a different research design would not have offered the same premises, width of empirical data or insights. However, the fact that the study spans over several years and includes several rounds of data collection and analysis further adds to the iterative and messy nature of the research process. For example, it makes it difficult to depict the research process as a set of distinctly separate stages or phases as is often suggested in methodology literature, starting with presenting a problem and asking a question and ultimately answering the question (e.g. Creswell 1998; Bryman and Bell 2011). Here, the focal area of the study as well as the central research questions have evolved and been adjusted along the way. This study could more accurately be compared with the concept of *methodological bricolage* (see e.g. Denzin and Lincoln 2000; Kincheloe 2001; Lindgren 2017) or the concept of *method assemblage* (Law 2004) than the traditional step-by-step research design. Both these concepts entail an iterative process where methods and guiding questions are not chosen beforehand but emerge as a patchwork, or are assembled, in response to challenges and questions faced along the progression of the study (e.g. Denzin and Lincoln 2000; Law 2004; Lindgren 2017).

The study adopts a qualitative methodology. The relevance of using qualitative data and methodology in longitudinal research is highlighted by Snape and Spencer (2003, p. 5): "qualitative methods are particularly well suited to exploring issues that hold some complexity and to studying processes that occur over time". Qualitative longitudinal research, driven by a desire not only to understand what changes occur, but also how and why changes occur in a social-cultural context, holds an established role in the social sciences in general (Carduff, Murray, and Kendall 2015). Such studies capture the interplay between time and the cultural dimension of social life, thus depicting time as non-linear (Neale and Flowerdew 2003). In general, longitudinal studies are characterized by involving more than one episode of data collection and

can be divided into two main categories: 1) *panel studies* in which the same people are interviewed more than once, and 2) *cross-sectional studies* (or cohort studies) in which subsequent samples of new participants are interviewed (e.g. Holland, Thomson and Henderson 2006). This study can be defined as a cross-sectional study, a design often used for exploring macro-level change, focusing on the wider context and general patterns of change rather than the individual (ibid.).

A challenge in social science research in general (e.g. Latour 1987; Burrell 2009; Czarniawska 2013), and in Grounded Theory research in particular (e.g. Holton and Walsh 2017; Aldiabat and Le Navenec 2018), is the question of when to stop collecting data and when it is time to conclude the study. The common approach is to stop when your categories are *saturated*, i.e. when nothing new is happening, no new patterns are recognized or when "gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical categories" (Charmaz 2006, p. 113). However, when conducting longitudinal studies and studying ongoing changes, a sense of saturation in the collected data will never be reached, which makes this decision more difficult (e.g. Carduff, Murray, and Kendall 2015). For example, in line with technological advances and sociocultural changes, media users' multitasking behavior is bound to continue to change and new patterns and insights will continue to emerge. Here, the time frame is defined in a very pragmatic manner according to practicalities and convenience related to work and employment arrangements; media diaries collected in 2013–2019 are included in the study as empirical material. While the quite unique longitudinal research project and continuous empirical data collection will continue, media diaries collected after 2019 are not included here.

3.4. Conducting and presenting Grounded Theory research

While Grounded Theory and exploratory research in general is increasing in many different research disciplines (e.g. Holton and Walsh 2017), challenges arise when presenting and writing up iterative and "messy" research processes that do not follow a clear sequential logic. Here, the research process and the results are described and presented according to the logic of a methodological framework developed by Corley and Gioia (2004) and Gioia, Corley and Hamilton (2013). This framework is rooted in the GT logic and designed for surfacing new concepts and generating persuasive new theories, allowing for flexible orientation toward qualitative, inductive research rather than a fixed method or recipe to follow step by step (Gioia and Pitre 1990; Gioia, Corley, and Hamilton 2013). According to this approach, *qualitative rigor* in inductive research is achieved by a systematic presentation of both a) a *1st-order analysis* using informant-centric terms and codes, and b) a *2nd-order analysis* using researcher-centric (theory-centric) concepts, themes and dimensions (Van Maanen 1979; Gioia, Corley, and Hamilton 2013). The framework allows for a clear demonstration of the links between the data and concept development as well as theory building (Gioia, Corley, and Hamilton 2013).

Gioia et al. (2013) highlight a few key features that are essential in the proposed methodological framework (for an overview, see Table 1, p. 41). Although the stages of the research process and the key features are depicted in a sequential manner in the table, in practice, these have continuously been resurfaced, intertwined, adjusted and developed throughout the entire study. For example, the initial research questions articulated in the beginning of the process (in 2013) have been iterated and developed several times along the iterative research process. Still, the "how" nature of the questions have remained the same. In the same way, the research design has been iterated and reassessed according to new empirical discoveries and insights.

The longitudinal approach of this study has blurred the lines especially between the data collection and data analysis stages; coding and categorization have been done continuously in between the annual data collection rounds, consequently affecting and altering the focal point of the entire study. While this further adds to the "messiness" of the design, the flexibility of the proposed methodological framework encourages, rather than hinders, such adjustments to the protocol based on changed preconditions or new discoveries (Gioia, Corley, and Hamilton 2013).

Table 1. Key features of the methodological framework
(developed based on the framework proposed by Gioia, Corley, and Hamilton 2013, p. 26)

STAGE OF RESEARCH PROCESS	KEY FEATURE
Initial research design	Articulate a well-defined phenomenon of interest and research question(s) framed in "how" terms.
Research design	Keep an open mind that allows for discovery and new insights regardless of prior knowledge of and existing literature on the phenomenon.
Data collection	Consider and use data collection methods that emphasize the voice of the informants and allow for flexibility to adjust protocol based on informants' responses and changed preconditions.
Data analysis	Perform initial data coding maintaining the integrity of 1st-order terms (informant-centric terms) and develop a comprehensive overview.
	Categorize and organize 1st-order codes into 2nd-order themes (theory-centric), and if needed or appropriate, condense 2nd-order themes into larger key theoretical dimensions.
	Assemble "data structure" which is composed by relevant terms, themes and dimensions.
Grounded Theory articulation	Formulate dynamic relationships among the 2nd-order concepts and additional consultation with existing literature to refine articulation of emergent concepts and relationships.

Similar to the classic GT approach (see e.g. Glaser and Strauss 1967; Holton and Walsh 2017) the framework proposed by Gioia et al. (2013) leaves consultation with existing literature to the very final stages of the research process. However, in this study, an extensive literature review was initiated earlier due to the longitudinal scope and the

length of the periods in between the data collection rounds. The first years embraced a wider selection of general science and methodology literature, whereas most of the field-specific literature review presented in chapter 4 was conducted in 2016–2019. During this time, a number of comprehensive review articles on media multitasking among adolescents and young adults were published, covering a large portion of the media multitasking research field, which was of great help in this stage of the research process (see e.g. Carrier et al. 2015; van der Schuur et al. 2015; May and Elder 2018).

3.5. Capturing everyday media activities

Grounded Theory can incorporate diverse types of data; both qualitative and quantitative approaches can be applied (e.g. Boychuk Duchscher and Morgan 2004). However, most often, the GT approach is associated with qualitative methods, such as ethnography and interviews (e.g. Charmaz 2006; Holton and Walsh 2017). What methods are chosen depends on the researched topic and access (Boychuk Duchscher and Morgan 2004; Charmaz 2006). Similarly, the pragmatist perspective stresses that the choice of appropriate data collection methods is steered by the articulated research questions (rather than any philosophical tradition or paradigm) (Creswell 1998; Snape and Spencer 2003; Seale 2012; Maxwell 2013; Lindgren 2017). While a mixed methods logic is often associated with pragmatism, embracing qualitative as well as quantitative approaches, it is not a prerequisite (e.g. Johnson and Onwuegbuzie 2004; Saunders, Lewis, and Thornhill 2009). In the present study, a mix of qualitative data collection methods (participant observations and media diaries) is applied for data collection. While a mixed methods logic, which also included quantitative analysis methods was considered as a viable complement to the qualitative reasoning, the quantitative approach has been excluded.

Snape and Spencer (2003, p. 5), suggest that "qualitative methods are used to address research questions that require explanation or understanding of social phenomena and their contexts". Qualitative data is generally collected in the form of e.g. narratives or pictures and is often analyzed in an inductive or abductive manner, focusing on building a complex, holistic picture based on the views of the participants (e.g. Creswell 1998). In qualitative research in general, interviews are the most common data collection method used, varying in form from structured, to semi-structured and unstructured (Elliott and Timulak 2005). Within longitudinal exploratory studies and GT research in specific, unstructured interviews seem to be the predominant way of collecting data (see e.g. Keaveney 1995; Saunders, Lewis, and Thornhill 2009; Schutt 2014). In this form of interview, the participants are asked to give elaborated accounts about their experiences of a particular issue or phenomenon (Elliott and Timulak 2005). To further widen the scope, interviews can be complemented by other qualitative methods, for example observations (see e.g. Saunders, Lewis, and Thornhill 2009; Schutt 2014; Swedberg 2012).

However, to "capture life as it is lived" (Bolger, Davis, and Rafaeli 2003, p. 580) and evolving behavioral changes, interviews may not be the most suitable method. Reis,

Gable and Maniaci (2014) suggest that everyday experience methods are better suited for exploring ordinary and spontaneous activities. Everyday experience methods do not refer to any specific instrument; rather, this is a paradigm for studying social-psychological ongoing activities or experiences as they occur in the ebb and flow of everyday life (ibid.). Everyday experience methods can imply, for example, experience sampling methods (ESM) (e.g. Hektner, Schmidt, and Csikszentmihalyi 2007), diary methods (e.g. Bolger, Davis, and Rafaeli 2003) and intensive longitudinal designs embracing a mixed method logic (e.g. Bolger and Laurenceau 2013; Reis, Gable, and Maniaci 2014). Here, for the purpose of capturing everyday media activities through media users' own recollections and perceived experiences (without proposing any predetermined definitions or alternatives), a diary method was chosen.

This study embraces a combination of participant observations and media diaries to capture everyday media [multitasking] activities among diginatives. In psychology as well as in social sciences, diary instruments are often used for collecting data at specific moments (e.g. Seitamaa-Hakkarainen et al. 2013) or longer periods of time, i.e. days or weeks (e.g. Bolger, Davis, and Rafaeli 2003; Bolger and Laurenceau 2013). Diary methods are particularly well suited for studying change processes and patterns during major events and transition periods (e.g. Bolger, Davis, and Rafaeli 2003). In diary studies, participants frequently report on events and experiences of their everyday lives, which provides possibilities to generate more data, as well as more varied data, than traditional designs (ibid.). Furthermore, diaries offer better possibilities to collect data from a large number of participants during a longer period of time than many other data collection methods (e.g. Vandewater and Lee 2009; Czarniawska 2007). Also, this approach offers a wider understanding of the full extent of changes and fluctuations in everyday media use and routines throughout the entire time period of the study, which, for example, a snapshot survey design would not provide (e.g. Vandewater and Lee 2009).

Though the iterative research process employed here has been far from linear, an overview of the data collection and data analysis rounds is presented in Table 2 (p. 44) in a chronological manner. This is not an attempt to simplify the process, rather an attempt to highlight some of the key stages of the process that have impacted the iterated design and process as well as the entire scope of the study. Table 2 illustrates not only the annual data collection rounds and the subsequent intersecting data analysis stages (key empirical findings are presented in chapters 5 and 6), but also the iterative process or redefining the focal research area as part of the development of the conceptual framework (presented in chapter 7). In 2016, after four rounds of data collection and initial 1st-order and 2nd-order analyses, the decision was made to highlight media multitasking as the core concept (in accordance with e.g. Glaser and Strauss 1967; Hämäläinen 2014). This affected the scope of the study and the research design in terms of primary reasoning, shifting focus from a primarily inductive, towards a more abductive direction (in accordance with e.g. Gioia, Corley, and Hamilton 2013).

Table 2. Overview of the research process

Year	Data collection	Data analysis	Primary reasoning	Conceptual framework development
Pre-study 2011	*Initial observations* (also before 2011) *Pilot diary study* conducted by EDGE research group. Focal area: media consumption patterns and the typical media day			
2012	Literature review on general changing media and information behavior. Initial research plan and research design. Focal area: changing media behavior among diginatives. Accepted as doctoral student in October 2012.			
2013	Observations First round of media diaries N = 167	1st-order 2nd-order analysis	Induction	Focal area: Media consumption patterns among diginatives
2014	Observations Second round of media diaries N = 107 Specific focus on micro moments (collaboration with KSF Media)	1st-order 2nd-order analysis	Induction	Focal area: Media consumption patterns in academic learning environments
2015	Observations Third round of media diaries N = 126 Specific focus on radio consumption (collaboration with Svenska Yle)	1st-order 2nd-order analysis	Induction	Focal area: Media consumption patterns in academic learning environments, emotions
2016	Observations Fourth round of media diaries N = 105 Specific focus on digital services (collaboration with KSF Media)	1st-order 2nd-order analysis	Induction - abduction	Focal area: Media multitasking patterns and effects among diginatives
2017	Observations Fifth round of media diaries N = 122 Specific focus on media multitasking; a set structure offered for diary outline	1st-order 2nd-order analysis	Abduction	Focal area: Disruptive media multitasking patterns and effects among diginatives
2018	Observations Sixth round of media diaries N = 100 Specific focus on media multitasking; a set structure offered for diary outline	1st-order 2nd-order analysis & aggregate dimensions	Abduction	Focal area: Disruptive media multitasking activities, predictors and recent trends in media behavior
2019	Observations Seventh round of media diaries N = 94 Specific focus on media multitasking; a set structure offered for diary outline	1st-order 2nd-order analysis & aggregate dimensions	Abduction	Focal area: Emerging media behavior trends, unconscious and habitual disruptive media multitasking activities, digital distraction

3.5.1. Participant observations and field notes

Observations as a data collection method has been used in a variety of disciplines for collecting data about people, processes and cultures (Kawulich 2005). According to Swedberg (2012), observations are an important way to collect initial data for the forthcoming theorizing process. He defines the concept of observation in a very wide sense to include not only participant observations, but also personal interactions, discussions, etc.[15] This way of collecting data is often associated with ethnographic research, which stems from anthropology and focuses on studying people, communities, and cultures (e.g. Van Maanen 2011; Czarniawska 2007; Berg 2015). An ethnographic study usually involves the researcher participating in the lives of people or a specific culture for an extended period of time, observing and collecting whatever data are available (Hammersley and Atkinson 2007), the aim being to analyze the social reality of the observed group of people through one's own experiences of their world (Van Maanen 2011). The digital era poses many challenges for traditional ethnography as interactions and experiences take place in both physical and digital environments (ibid.). As a response, traditional ethnographic methods have been developed to also include social and intercultural interactions online; for example, as part of the concept of netnography (Berg 2015).

While observations in physical as well as digital environments are a useful way of generating data on social phenomena, this data collection method is seldom used in media multitasking research (see e.g. Ruggiero 2000; Voorveld and Viswanathan 2015). While only a few observational studies have been conducted (or at least published) within the area of media multitasking, there is a need for more studies like this to advance our understanding of media multitasking in the everyday context (e.g. Rosen, Carrier, and Cheever 2013; Voorveld and Viswanathan 2015). Also, there is a need for less intrusive observational methods and techniques for capturing everyday media multitasking activities than those applied by Rosen et al. (2013) and Voorveld and Viswanathan (2015), where the observers were present in the subjects' homes and thereby affected the subjects' natural routines and behavior. The observations in this study encompass 1) initial personal observations as background for the research project, and 2) participant observations in sporadic situations and events throughout the years 2013–2019. The form of observations ranges from passive participation where the observer adopts a bystander role, to active participation where the researcher is an active part of the observed situation (see e.g. DeWalt, DeWalt, and Wayland 2000).

15 For a more elaborate discussion on the interpretation and definition of observation throughout the history of science, see e.g. Daston and Lunbeck (2011).

The observations have been conducted sporadically throughout the years, primarily in teaching and learning situations and environments; sometimes in a highly spontaneous manner, but also sometimes in a more structured manner according to an a priori established observation guide. Furthermore, reflections on my own media behavior, as well as insights from discussions and dialogues with family, friends, colleagues and fellow researchers, are also considered part of participant observations here. DeWalt et al. (2000) state that observations are not really data unless they are recorded into field notes. Field notes can include descriptive records of what is observed, including conversations, activities, critical events, feelings, the overall ambience and the process itself (ibid.). Field notes can also serve as a sense-making and analysis tool (Kutsche 1998).

All observations in this study have been documented in writing, either at the moment of observation or afterwards. The field notes include descriptions of the various situations or events observed as well as reflections and thoughts on these experiences. A total of 63 separate field notes, written between years 2013 and 2019 have been included as part of the study.[16] While these reflective field notes have not been considered as part of the main empirical data analysis process, they have had significant influence on the research process as a whole, serving as a sense-making tool and as a way of documenting developing thoughts and insights throughout the process. Some of the most significant observations and field notes constitute the basis for the observation sections that can be found in each chapter.[17] The role of these observation sections in the dissertation is to highlight a specific issue or event from a highly personal and informal point of view to provide a wider basis for a pragmatic understanding of the social phenomenon of everyday media multitasking. This is also a way of illustrating my own proximity to the phenomenon as well as the empirical context.

3.5.2. Media diaries and reflective narratives

The main source of primary data in this study is 821 media diaries that have been collected annually between the years 2013 and 2019. This longitudinal and qualitative media diary study has encouraged participants to provide regular reports on media-

16 Initial observations were made also prior to 2013, however, as these were not documented in writing, they have not been included as part of the empirical study. Still, these observations have had an impact on the design of the initial research plan, the research process and the scope of the study.

17 As the observations are based on personal experiences and highly reflective field notes, I have deliberately opted for a more informal style of writing in these sections. The text and the headings in the observation sections are italicized to mark the difference between the more informal sections and the rest of the content.

related activities and experiences in their everyday lives (in accordance with e.g. Bolger, Davis, and Rafaeli 2003).

Media diary methods: strengths and challenges

Media diaries as a data collection method is commonly used to attain information concerning the media use of a specific group of people during a particular period of time (Vandewater and Lee 2009). Daily media diaries are more useful than, for example, a web or a mobile tracking system for capturing changes and natural fluctuations in everyday behavior, as well as for capturing more comprehensive information about the purpose and experiences of concurrent media use (Bolger, Davis, and Rafaeli 2003; Vandewater and Lee 2009). Diary methods in general are not that common in media multitasking research. However, there are a number of studies where a diary-based logic or method has been used to collect data (see e.g. Papper, Holmes, and Popovich 2004; Czerwinski, Horvitz, and Wilhite 2004; Jeong et al. 2010; Jacobsen and Foerste 2011; Voorveld and van der Goot 2013; Kirchberg, Roe, and Van Eerde 2015). The time frame varies from one day to four weeks and these studies encompass an array of different perspectives on media multitasking.

While these efforts to capture media multitasking activities in their natural environment are highly appreciated and needed in a field dominated by laboratory experiments (see e.g. Czerwinski, Horvitz, and Wilhite 2004; Voorveld and van der Goot 2013), there are a number of methodological challenges that need to be addressed. For example, the participants' engagement in keeping the diary heavily affects the outcome and the extent of the activities recorded (e.g. Kaun 2010). Keeping the diary can be tedious for the informants and thereby affect the natural flow of their everyday activities and reported daily events (Czerwinski, Horvitz, and Wilhite 2004). Also, the media diary method is quite limited concerning, for example, noticing simultaneous use of different media platforms; informants may not realize or even remember to register this kind of simultaneous use (ibid.). Still, this type of diary approach is appropriate if the study does not aim to draw quantitative conclusions from the collected data (Czarniawska 2007).

Selection of participants

Parallel to the choice of data collection method(s), the issue of selecting participants for the empirical study needs to be considered (e.g. Taherdoost 2016). This is often referred to as "theoretical sampling" or "theoretical saturation" within the GT approach (see e.g. Glaser and Strauss 1967; Corbin and Strauss 1990; Thomson 2011). These concepts imply that the selection process may involve 1) selecting participants, so-called "experts", who have experienced or are experiencing the researched phenomenon, or 2) an evolving process where participants (and potential additional participants, if needed) are chosen based on the emerging patterns and themes (e.g. Strauss and Corbin 1998; Thomson 2011).

Based on these presumptions, selection of participants becomes tricky in this particular study as most people today could be considered "experts" on the researched

phenomenon, and "theoretical saturation" is not sought due to the longitudinal scope. Therefore, limitations in terms of sampling refers back to the underlying assumptions mentioned earlier, i.e. studying the behavior of diginatives may help us gain a general understanding of similar behavior also among other generations. This assumption is based on the fact that the perceived gap between diginatives and older generations is rapidly diminishing in terms of everyday media consumption patterns and media multitasking behavior (e.g. Rowlands et al. 2008; Voorveld and van der Goot 2013). The decision to focus on diginatives in the academic context can be described as convenience sampling (e.g. Taherdoost 2016); this context offered convenient access to this specific generation during the time period of the study. Furthermore, the academic context is interesting due to the detrimental effects of media multitasking that have been documented on learning outcomes and academic performance (see e.g. Carrier et al. 2015; van der Schuur et al. 2015; May and Elder 2018).

The media diary study has been integrated as part of a project-based learning approach in the same basic marketing course offered at Åbo Akademi University (ÅAU) between the years 2013 and 2019[18]. This course was chosen for the following reasons: 1) it is a mass course which is attended by more than 100 students annually, and 2) the students taking part in this course represent a wide array of majors, study experience and backgrounds. About half of the participants every year are first-year students at the ÅAU School of Business and Economics, and the others are students from other parts of the university, most of whom have already studied for some years. Most of these students are part of the diginative generation, defined here as people born in and after 1990. As the study is longitudinal and spans over several years, new people have participated in the study every year. Thus, the study is defined as a cross-sectional study with successive samples of new participants.

The media diary study in practice

The informants taking part of the study were asked to keep a media diary on their personal media consumption for one predetermined week (seven consecutive days). The media diary consisted of three core elements:

1) *Regular reports/loggings of media consumption.* The informants were asked to keep track in written form of what media they use, when, where, for how long and for what purpose according to the division of their media day into four parts: morning (06-12), day (12-18), evening (18-00), and night (00-

18 While it is basically the same course every year, due to structural changes on a larger scale, the course name has changed over the years. It was called "Grundkurs i marknadsföring" in 2013–2016 (encompassing 10 credits), "Marknadsföring i praktiken" in 2017–2018 (5 credits) and "Strategisk marknadsföring" in 2019 (5 credits).

06). The participants were encouraged to register their media use frequently throughout the entire day to avoid forgetting their media-related activities.
2) *Reflections.* The informants were asked to reflect upon their own media consumption behavior as reported in their diary.
3) *Pictures.* The informants were encouraged to add photos in their diary that reflect typical media consumption situations throughout the week.

In the instructions, media is loosely defined to include newspapers, radio, TV, computers, Internet, social media, tablets and mobile phones. However, the definition of what media to actually include in one's media diary was left to the discretion of the informants. In other words, it was up to each student to decide and define what he or she perceived as media, and then use this as an indication for what to include in the diary. This provides indicative evidence of how these young adults conceptualize media use in general and what they perceive as media.

In 2014–2016, the diary was an essential part of specific course projects which were implemented in collaboration with media organizations, for example, KSF Media and Svenska Yle (see Table 2, p. 44). The instructions for the diary task were adjusted in collaboration with these organizations to fit the recent project or challenge. For example, in 2014 the project dealt with developing media services for KSF Media in respect to media consumption during so-called micro moments, i.e. short periods of free time while, for example, waiting for the bus or waiting for a class to start. Therefore, the instructions for the media diary included instructions for observing and reflecting upon micro moments specifically. Similarly, since the acknowledgement of media multitasking as the core concept in 2016, instructions were adjusted to include observations on concurrent media use from 2017 onwards. However, while the instructions have been adjusted in an iterative manner according to different course projects and new empirical and theoretical insights from year to year, the very core elements of the diary task have continuously remained the same, providing similar loggings of media consumption, reflections and pictures throughout the entire study.

The development of the instructions has also been affected by some unintentional overlaps and circumstances. For example, in 2013 and 2014 the diary task and a major student event (*Pampas Nationaldag*) lasting for several days overlapped, which was clearly mirrored in the diaries. Media consumption patterns in relation to such events is considerably different from media consumption during any "normal" day. Therefore, the week for the diary task varies from year to year to avoid events that compromise the mundane everyday aspect of the diary task. Also, between the years 2013 and 2016, participants were free to choose the format of the media diary themselves (see Appendix 1 for instructions from 2014), whereas since 2017 a more structured guideline for how to structure the media diary has been suggested (see

Appendix 2 for instructions from 2017)[19] to get more conformity in the scope and design of the diaries. All diaries were written in Swedish and were submitted in electronic form, using the Moodle virtual learning platform, or e-mail if the diary exceeded the file size accepted in Moodle. The study encompasses seven rounds of media diary collection, and a total of 821 diaries (for an overview, see Table 3 below).

Table 3. Overview of media diaries collected in 2013–2019

Data collection rounds	Total number of diaries	Diaries included in the study	Gender	Age	Excluded from study
Round 1 2013, week 12 18–24 March	167	157	Female: 81 Male: 76	Age span: 19–24 (1990–1995) Average age: 21	10
Round 2 2014, week 12 17–23 March	107	98	Female: 36 Male: 62	Age span: 19–25 (1990–1996) Average age: 21	9
Round 3 2015, week 12 16–22 March	126	121	Female: 48 Male: 73	Age span: 19–26 (1990–1997) Average age: 21	5
Round 4 2016, week 3 18–24 January	105	101	Female: 43 Male: 58	Age span: 18–27 (1990–1998) Average age: 21	4
Round 5 2017, week 3-4 20–26 January	122	118	Female: 49 Male: 69	Age span: 19–26 (1990–1999) Average age: 21	4
Round 6 2018, week 9 26 February– 4 March	100	92	Female: 40 Male: 52	Age span: 19–28 (1990–2000) Average age: 21	8
Round 7 2019, week 5 28 January– 3 February	94	90	Female: 39 Male: 51	Age span: 19–28 (1990–2001) Average age:	4
TOTAL	**821**	**777**	**Female: 336** **Male: 387**	**Born: 1990–2001** **Average age: 21**	**44**

As the media diary task has been an integrated part of different course projects over the years, it has been a compulsory assignment for every student taking part in the

19 The adjusted guidelines and structure for the media diary instructions were developed in collaboration with colleagues from the EDGE research group.

course. However, giving up one's diary for the sake of research has been voluntary and every student has been given the opportunity to decline from participating in this study. This has been clearly communicated to the participating students while introducing the diary task every year, and it is also clearly mentioned in the diary instructions. No diaries have been included here without the consent of its creator. Also, a total of 44 diaries that did not meet the set criteria for the study (for example, participants born before 1990, incomplete diaries, or diaries in a format no longer available) have also been excluded.

All of the diaries included in the study have been treated anonymously. To guarantee anonymity of the informants, all names, matriculation numbers and other background information irrelevant for the study were disregarded and unbiased codes, for example, "diary 3–2015" were used to identify each diary in the analysis process. The names mentioned after each quote in the following chapters are fabricated; they are chosen only for the sake of illustrating the gender of the participant whose diary is cited. No other material or documentation produced by students as part of the course or course projects is used in this study in any form.

Capturing life as it is lived or as it is narrated?

The collected data is treated as a narrative report of events, memories and experiences with regard to everyday media consumption (in accordance with e.g. Czarniawska 2007). The data analysis phase(s) presented in the next section deals exclusively with the *reflections* found in the diaries, referred to as *reflective narratives* (in accordance with Nygren and Blom 2001). The pictures are acknowledged in the empirical findings (presented in chapter 5) as a contributing factor in the decision to focus on media multitasking as the core concept but are not analyzed further. The decision to exclude the daily regular reports/loggings of media consumption (i.e. the main part of the media diary) is linked to the overwhelming amount of data these encompass, the overall unstructured nature of this data, and the limitations that analyzing these from a strictly qualitative perspective would imply; these will be further dealt with after the completion of this dissertation.

Nevertheless, referring back to the underlying assumptions that have shaped the research design, the reflection part of the diaries are still well suited for capturing the participants' everyday media [multitasking] activities through their own recollections and perceived experiences (in accordance with e.g. Bolger, Davis, and Rafaeli 2003). Also, for example, Kaun (2010) stresses the importance of space for personal reflections in this type of diary study. However, a distinction has to be made here between capturing lived experiences as they occur and narrated experiences as they are remembered (Kaun 2010). For example, Nobel Prize winner Daniel Kahneman, makes a distinction between the "remembering self" and the "experiencing self" (see e.g. Jarden 2011; Zajchowski, Schwab, and Dustin 2017). The experiencing self is present in the moment when an event occurs, whereas the remembering self is the one that narrates the experience afterwards; discrepancies often emerge between these (ibid.).

Assuming that the reflective narratives in the collected media diaries are written in retrospect, i.e. after the actual occurrence of the activities and experiences, this is an issue that needs to be considered. For example, concern has been expressed whether or not diaries are really accurate recordings of certain events or experiences (Kaun 2010) as some content or activities may be deliberately left out since they could be perceived as offensive, harmful or even illegal. However, while acknowledging these, this reflective narrative perspective allows for opportunities to study the informants' relation to media multitasking in general, but their own media behavior in particular, including emotional expressions and gained insights from their media diaries, in a way that most other methods would not (in accordance with Kaun 2010). The reflective narratives in the media diaries represent the informants remembered and self-perceived media behavior, rather than their actual media behavior. Thus, the concept of *self-perception*[20] is emphasized in this study, even though this is a widely overlooked concept in prior media multitasking research.

3.6. Analyzing a rich set of data

The reflective narratives in the media diaries are analyzed according to a thematic logic, focusing on what is told rather than how it is told or who is telling (Riessman 2005). While this type of logic is traditionally associated with other qualitative traditions, not specifically the Grounded Theory approach (Creswell 1998), it resembles the inductively generated conceptual and thematic grouping logic of GT (Glaser 2012; Gioia, Corley, and Hamilton 2013). Systematic coding and categorizing of the vast amount of reflective narratives in this study has been conducted continuously throughout the entire study. The initial analyses were performed manually with printed diaries and different colored pencils. However, the rich set of empirical data rapidly required more sophisticated methods. Since 2014, the Nvivo software[21] has been used for storing, coding and managing the vast set of collected media diaries.

While the overall scope and focal point of the study have been readjusted several times, the coding and categorizing work has essentially followed the systematic logic of classic GT (e.g. Glaser and Strauss 1967; Hämäläinen 2014; Holton and Walsh 2017) and the framework presented by Gioia et al. (2013) throughout the entire study. The core elements of this analysis process are data collection, data coding and writing memos (e.g. Glaser 1978; Hämäläinen 2014). "These elements are partially sequential and partially simultaneous, and they can occur and be repeated in various orders and

20 For a more elaborate discussion on the concept of self-perception, see section 7.2.5.
21 https://www.qsrinternational.com/nvivo/home (last accessed 14th November 2019)

combinations" (Hämäläinen 2014). The initial data coding stage(s) includes *open coding* of data, aiming to identify emerging categories and concepts (e.g. Glaser 2012; Hämäläinen 2014) and develop a comprehensive overview of the 1st-order terms, i.e. the informants' own words (Gioia, Corley, and Hamilton 2013). In this study, this open coding process has been repeated after each round of data collection and each developed 1st-order overview has been compared to earlier ones. Through this continuous coding and comparison, a few key categories and concepts emerged. In 2016, after four rounds of data collection and open coding, the concept of media multitasking was singled out as the core concept. For the remainder of the study (2017–2019), this affected the subsequent coding and categorizing activities.

According to Glaser (1978), the analysis process moves into *selective coding* when a core concept has emerged. This phase includes a search for relationships between categories and the assembly of higher order themes (e.g. Strauss and Corbin 1998; Holton and Walsh 2017). Gioia et al. (2013) refer to these categorization activities as organizing 1st-order concepts into 2nd-order (theory-centric) themes. They further suggest that aggregated theoretical dimensions rooted in the 2nd-order themes can be developed if appropriate or needed (ibid.). Here, after the final coding and categorization rounds (in early 2019), four key theoretical themes were chosen to serve as the foundation for the continued theorizing and Grounded Theory articulation phase. In accordance with the framework proposed by Gioia et al. (2013), an initial data structure overview was developed (see Figure 3, p. 93), illustrating the central 1st-order concepts (referred to as *identified patterns*) and 2nd-order themes (referred to as *key theoretical concepts*) in the study. Note that the original data structure model as presented by Corley and Gioia (2004) and Gioia et al. (2013) has been adjusted according to the longitudinal scope of this study and that the category of (1st-order centric) *emerging trends* has been added.[22] Later, two *aggregated theoretical dimensions* were added to the data structure overview (see Figure 4, p. 126 and Figure 5, p. 149).

3.7. Grounded Theory articulation

Throughout the open and selective coding phases of Grounded Theory, the researcher is generalizing to concepts rather than any population(s) (Hämäläinen 2014). Towards the final stages of the research process, these concepts are applied to people's social psychological behavior and prior research, thus, contributing to the generation of theory (e.g. Glaser 2012; Hämäläinen 2014). Gioia et al. (2013) refer to this phase of conceptualization as Grounded Theory articulation (see e.g. Table 1, p. 41). This is where the static data structure picture is transformed into a "motion picture" that

22 For a more elaborate discussion, see section 5.2.

illustrates the dynamic researched phenomenon (ibid.). The ultimate goal is "a vibrant inductive model that is grounded in the data (as exemplified by the data structure), [and] that captures the informants' experience in theoretical terms" (Gioia, Corley, and Hamilton 2013, p. 22). To achieve this, in the final phase, the interrelationship between the emergent concepts, themes and trends are articulated and explored by consulting existing literature (ibid.).

Similar to the classic GT approach (Glaser and Strauss 1967), the framework proposed by Gioia et al. (2013), the comparative literature review is left to the very final stage of the research process in a highly inductive manner. Hämäläinen (2014; inspired by Glaser 1978) suggests that the researcher should not initiate a comparative literature review until the draft of a new theory is ready. The aim of the literature review from this perspective is to position the new theory in the context of prior academic research (ibid.). As mentioned earlier, a comprehensive literature review was initiated much earlier in this study as part of the more pragmatic approach and the longitudinal research design. This implies that the overall nature of the study (at least in 2017–2019) follows a more abductive logic than the classic GT approach (which is also illustrated in Table 2, p. 44).

The initiation of a literature review at a quite early stage of the research process has affected and contributed to the iterative nature of the overall research design. This is also mirrored in the presentation of empirical findings in the dissertation; for example, conceptual discussions on the key concepts have been included in the empirical findings sections (chapters 5 and 6) as this has been an integral part of the advancement of the research process and the development of the conceptual framework (presented in chapter 7).

3.8. Thoughts on the research process

This chapter presents an overview of the iterative and "messy" longitudinal research process which is inspired primarily by a pragmatic take on Grounded Theory, but also influenced by e.g. postphenomenology and narrative analysis. The contributions and limitations of this longitudinal, iterative, "messy" and exploratory methodological approach are further discussed in the final chapter (see section 8.3.). Still, due to the novel perspective this approach offers to the entire field of media multitasking research, a few key issues are emphasized and discussed already at this stage. I especially want to stress a few key benefits and opportunities with this research approach in terms of complementing prior media multitasking research and research approaches. In accordance with Jensen and Aagaard (2018), media multitasking research is moving away from the first "cognitive-centered" wave and going towards a third "mediated activities-centered" wave. The methodological framework applied in this study offers possibilities to approach everyday media multitasking and mediated activities from a new perspective and to find new entry points and insights into the ongoing phenomenon and current sociocultural changes. However, some central limitations of the methodology are also acknowledged.

Capturing unconscious behavior through media diaries

One of the most fundamental insights gained from the media diary study is the emerging trend of everyday media behavior that is performed unconsciously, for example, in a habitual or even addictive-like manner.[23] When deciding on a diary method, tapping into this unconscious dimension of everyday media [multitasking] activities was not intended or even considered. However, from the systematic coding and categorization processes of the reflective narratives, most emerging patterns and concepts could in one way or another be linked to a certain level of unconscious everyday behavior. Krüger and Johanssen (2016) note that with media and technology becoming more and more integrated into our everyday lives, we need to focus more on unconscious processes. The media diary method, particularly in combination with observational data, can offer an opportunity to further explore this unconscious dimension. However, as a large portion of everyday media behavior is performed unconsciously, this dimension may also have affected the scope of the media behavior included in the media diaries.

The dimension of time and reflection

The media diary task served as a real eye-opener for the vast majority of the informants. Taking a break to reflect on their own everyday media behavior is something that most of them had never done before. An important strength of the media diary method applied here is the opportunity to continuously keep track of media activities for a relatively long period of time (one entire week) as well as enough space for personal reflections (in accordance with Kaun 2010). This has helped many informants gain increased awareness of their own problematic media use and has inspired them to take actions to limit the perceived problematic effects before this behavior becomes uncontrollable. However, keeping a diary for several days can also be perceived as tedious work, especially since the diary concerns media-related activities that are most often frequently repeated throughout the day and week. This can affect the motivation of the informants in a negative way; for example, some media consumption may be deliberately be left out because including every detail is considered too much work. This subsequently affects the scope and truthfulness in the reported media activities and reflections.

Media diary as an integrated course assignment

Another issue that needs to be considered is the fact that the media diary in this study has been integrated as a compulsory assignment in a basic marketing course. While this offered easy access to a large number of diginatives, the fact that the chosen course

23 See chapter 5 for a more elaborate discussion.

is a marketing course and that the informants were working with media-related projects may have affected the scope of their media definitions, their reported media use and their reflections. Furthermore, the fact that the diary was a compulsory part of the course may have affected the informants' motivation and willingness to thoroughly work with the task. For some, the diary task has been treated as yet another course assignment that needs to be completed to pass the course. A lack of effort can clearly be recognized in some diaries, which could have been avoided by choosing informants on a more voluntary basis. However, for others, this served as a motivation to really do a thorough job with the diary, which can also be detected in their diaries. Again, I want to stress the fact that while the diary was a compulsory part of the course, the decision to participate in this study was voluntary and no diaries were included here without the consent of its creator.

Lost in translation?

The issue of translation is evident here as the media diaries were written in Swedish and the dissertation is written in English. All citations from the diaries have been translated into English and in the process of translating, some grammar and spelling mistakes have been corrected. However, while not all citations are translated exactly word by word (as some citations would make no sense at all following that logic) I have strived to continuously remain as close to the essence of the citations as possible. Furthermore, the original reflective narratives (in Swedish) have been used when coding and categorizing the empirical data, and therefore, eventual mistakes or meanings lost in the translation of the citations included here have not affected the analysis process in any way.

The role of the researcher

In all qualitative research, the role of the researcher needs to be addressed (e.g. Creswell 1998). While the role of the researcher in classic Grounded Theory has been debated and has led to some confusion, Hämäläinen (2014) describes the researcher as holding a central and active role in all stages of the research process. In this study, my own close proximity to and continuous interactions with the research context, the informants, the researched phenomenon, etc. has affected every stage of the research process from fundamental methodological decision to the collection of data (almost verging on activity research), analysis and development of the conceptual framework.

4. MEDIA MULTITASKING: A LITERATURE REVIEW

As mobile technology has become a natural and indispensable part of diginatives' everyday lives, the possibilities for multitasking involving at least one electronic device or media platform has drastically increased (e.g. van der Schuur et al. 2015; Kononova, Anastasia and Chiang 2015; Salas Guzman 2016). Stemming from a stream of research on excessive technology and media use in general, the past decades have seen an augmented interest specifically in media multitasking (e.g. Ralph et al. 2014; May and Elder 2018). This chapter provides an overview of earlier research and theoretical perspectives applied within this still emerging research domain. This literature review serves as a foundation and as inspiration for the emerging conceptual framework developed and discussed in chapter 7.

Prior research on media multitasking has focused on three main areas:

- *Predictors* – identifying predictors and motivations for media multitasking behavior;
- *Patterns* – exploring what media, content and activities people combine;
- *Consequences* – studying immediate cognitive effects as well as other forms of short- and long-term consequences.

This chapter includes a brief overview of prior empirical studies and theoretical perspectives in each of the above-mentioned areas. Some new theoretical perspectives within media multitasking research are also presented and discussed. While the conceptual framework developed in this study relates to the area of predictors, all three main areas are included in the literature review due to 1) the predominant focus on the areas of patterns and consequences in prior media multitasking research, and the "spillover effects" in terms of theoretical perspectives and methodological approaches from these areas within the area of predictors, and 2) the challenging issue of causality in media multitasking research (in accordance with e.g. van der Schuur et al. 2015). In everyday media multitasking activities, the areas of predictors, patterns and consequences are intertwined. It is difficult to establish any type of cause-effect relation, and therefore, exploring predictors becomes tricky without understanding the subsequent patterns and consequences.

4.1. Observation: Ridiculous problems?

In the late summer of 2016, I was sitting in a café close to campus, looking out the window. It was raining outside, and I was watching people walk by in the street. Seemingly ordinary people. But quite quickly, I realized something was weird. These people were all completely absorbed by their smartphones. What were they doing? Checking social media? Reading the news? Why were they all standing in the same place? Why didn't they look up from their screens? Did they not notice the rain? Did they not even notice each other? I couldn't understand this strange behavior at all. What was going on?

I took out my own smartphone and started googling, as an attempt to find out if I had missed something important. Only a few seconds later, I found the simple answer to all these questions on the local news site – Pokémon Go! This augmented reality mobile game was launched in July 2016 and became an instant success, demonstrating unprecedented rates of growth and engagement worldwide[24]*. The launch of Pokémon Go saw players all over the globe walking around staring at their mobile screens, failing to pay attention to anything else. People were falling in the streets, falling into the water and bumping into a variety of things and people. The following weeks saw pieces on traffic accidents and other occurrences caused by Pokémon Go players featured in all kinds of news feeds, almost as often as stories about the sensational success and popularity of the game itself.*

However, news about these kinds of seemingly quite ridiculous problems caused by people getting caught up in screens, smartphones or digital realities was no new phenomenon. Every now and then, similar stories, not connected to Pokémon Go, popped up in all sorts of more or less trustworthy news forums. For example, people quite often seem to stumble, fall into the sea, or even fall down cliffs and die in search of the ultimate Instagram picture. Is it really worth it, though? Sacrificing your well-being, or even your life, for one picture? One picture! And, at best, a potential fifteen minutes of fame among your Instagram followers. And this is only getting worse as people try to outshine each other all the time in the fierce competition for our attention.

We might think we are in control of our media use, but almost too easily we seem to get caught up in our screens, no matter if we're chasing sweet-looking virtual creatures, perfect pictures or just checking our social media feeds. We get distracted, we stumble, we fall, we get lost, we lose track of time, and we have a hard time getting back on track. Why do we keep engaging in this disruptive and at times even hazardous behavior?

4.2. Media multitasking patterns

> *… you should be very careful with generalizing. Within this age group, there is naturally a large group of individuals who all behave differently in their media consumption. […] the world isn't black and white, and we shouldn't divide people into "us" and "them". (Kallinen and Berg 2019)*

Media consumption patterns that feature a constant search for attention, obsession-like tendencies towards games and social media, and a number of "ridiculous problems" as the ones mentioned in the observation above, have seemingly become

24 75 Incredible Pokemon Go Statistics and Facts (February 2017)

the new normal. This is true for people of all ages and does not characterize any generation or age group in specific. Still, generally assumed generational differences in media consumption patterns and stereotypical prejudices prevail, even though these generational gaps have been repeatedly challenged and discharged (see e.g. Carrier et al. 2009; Selwyn 2009; Voorveld and van der Goot 2013; Carrier et al. 2015). While the gaps between generations in terms of media consumption is rapidly diminishing (e.g. Voorveld and van der Goot 2013; Carrier et al. 2015; Hardy and Castonguay 2018), the past decades have seen a dramatic increase in everyday media multitasking behavior especially among younger generations (e.g. Wang and Tchernev 2012; Uncapher et al. 2017; Segijn et al. 2017). This concerns both frequency, time spent with media multitasking as well as the number of concurrent media related activities (Carrier et al. 2015). Here, no attempts are made to separate "them" (i.e. the diginatives) from "us" (i.e. other generations) or to compare patterns between different generations; rather, this section offers an overview of recent studies and theoretical perspectives on media multitasking patterns specifically among diginatives.

4.2.1. Diginatives and media 24/7

Most diginatives in the developed world spend an astounding amount of time on consuming media content and using technological devices. They live in an environment that can only be described as media saturated (e.g. Uncapher et al. 2017). About ten years ago, Rideout et al. (2010), found that diginatives managed to fit 10 hours and 45 minutes' worth of media content into 7 hours and 30 minutes of media use every day. In 2018, the corresponding number of media use was closing in on 12 hours per day (Newman et al. 2018; Newman et al. 2019). Young adults mainly use media in digital platforms (ibid.), which is easily accessed at all times, and which persistently increases the opportunities to media multitask. Quite logically, simultaneous media use is a precondition for such excessive media consumption. While there are exceptions that disprove the rule, it is safe to assume that the majority of today's young adults are avid media multitaskers (in accordance with e.g. Voorveld and van der Goot 2013; Carrier et al. 2015; Newman et al. 2018).

Hwang, Kim and Jeong (2014) found that 90 % of diginative university students engage in multitasking whenever they use media. They suggest that more than half of the time spent on using media, in fact, involves multitasking. In a study by Mokhtari, Delello and Reichard (2015), diginatives reported performing an array of different media related activities while engaged in four main activities; reading for fun, reading for academic purposes, watching TV and using the Internet. For example, browsing web sites while watching TV and checking e-mails while watching online videos were frequently reoccurring concurrent activities (ibid.). Diginatives also show a preference for multitasking with music, social media and online video content (Voorveld and van der Goot 2013). The preferred devices for media consumption as well as multitasking

are mobile phones (smartphones) and laptops (e.g. Madden et al. 2013; May and Elder 2018).

Diginatives' media multitasking behavior is characterized by fragmented checking and consumption patterns and frequent task switching behavior. For example, typical media related activities among diginatives are repeated frequently throughout the entire day but engaged in only for short a moment every time (see e.g. Vandewater and Lee 2009; Oulasvirta et al. 2012; Boase and Ling 2013; Baumgartner et al. 2014; Baumgartner et al. 2016). Yeykelis et al. (2014) found that diginatives switch between content every 19 seconds on average when multitasking with several types of content on one device. Later studies show that this estimate may be too generous and that this time span had receded to about an average of 11 seconds (see e.g. Yeykelis 2018; Yeykelis, Cummings, and Reeves 2018). This dramatically affects the user's experience of media content that is often planned and produced for much longer time spans, for example a 30-minute episode of a TV series or a newspaper story. The experience becomes even more jumbled when concurrently engaging in two (or more) different devices or radically different types of media content (ibid.).

Frequent task-switching can be provoked by external stimuli such as mobile notifications. In accordance with more developed and personalized notification systems built into mobile technology and media content, the probability for technology-induced interruptions and subsequent task switching increases all the time (Carrier et al. 2015). However, self-interruptions, or self-initiated interruptions, are also very common. This involves abandoning an ongoing task before it is completed and changing focus to another task without prompting by any external stimuli (see e.g. Dabbish, Mark, and González 2011; Adler and Benbunan-Fich 2013). Regular interruptions and frequent task switching activities, regardless of whether they are technology-induced or self-initiated, easily divides our attention and leads to distractions and fragmented working patterns in any everyday endeavor (e.g. Dabbish, Mark, and González 2011; Adler and Benbunan-Fich 2013; Carrier et al. 2015; Katidioti et al. 2016). As most diginatives perceive their mobile devices as indispensable, regularly repeated technology-induced interruptions and frequent self-interruptions have become a way of life for most young adults.

The context of education has been the focal point for the majority of studies on youngsters' and young adults' everyday media multitasking patterns (e.g. Carrier et al. 2015; May and Elder 2018). Schools and universities offer easy access to young people. Furthermore, different learning environments have developed into natural commonplaces for frequent media multitasking behavior (Brasel and Gips 2011). What makes this context particularly interesting is the notion that learning requires focused attention, and that mobile technology enhances the possibilities for media

multitasking and subsequent distraction[25]. For example, Rosen et al. (2013) found that the more distracting technologies were available, the less likely students were to stay focused on their learning tasks. Using an array of different media while participating in lectures is common among diginatives (e.g. Wallis 2006; Wallis 2010). Junco (2012) found that 69 % of students in a classroom were text messaging and 28 % used Facebook and read email in class; a total of 21 % of the students used media for off-task purposes. If a lecture is perceived boring or hard to follow, the temptation is elevated to switch to another task with higher emotional appeal, e.g., checking social media (Carrier et al. 2015).

In an exploratory study conducted among college students in their own homes, Rosen et al. (2013) observed media multitasking activities performed while studying. They found that the students had great difficulties in staying on task as they simultaneously engaged in numerous non-study related media activities. During a study-period of 15 minutes, the observed students remained focused on the primary task for approximately 10 minutes, whereas the rest of the time was spent, e.g., texting, watching TV or checking Facebook (ibid.). Carrier et al. (2015) suggest that in any learning environment, the more a learning task is interrupted by media activities, the harder it becomes to resume focus. It can take up to 20 minutes to regain focus after a learning process is interrupted (e.g. Brasel and Gips 2011).

4.2.2. Assessing everyday media multitasking patterns

Fragmented media consumption patterns as described above, characterized by frequent task-switching and multitasking involving multiple devices, platforms and digital services is common among diginatives. A high degree of integration of mobile media is evident in basically any everyday activity and situation, not only in learning processes or environments. In the near future, new mobile technologies, e.g. functional sensors and wearables, will offer unprecedented possibilities for up to 24 hours of media use every day (e.g. Bagot et al. 2018). While a large portion of that type of media use may be performed unconsciously and without interfering with other everyday activities, it will undoubtedly offer numerous new possibilities for engaging in media multitasking. This rapid development leads to confusion related to defining what media is and what it is not[26]. It also leads to further challenges in capturing and assessing everyday media multitasking patterns. As everyday media multitasking is

25 See section 4.3.3. for an overview of consequences on academic performance.

26 Definitions of the concept of media is briefly discussed in chapter 2. However, the issue of defining media will be discussed further in chapter 5, as encouraging participants to define media was an integral part of the empirical diary study.

often performed instinctively and unconsciously, it is difficult to capture and study such patterns. For example, when asked to estimate media consumption times, people struggle to do this aptly as they are not consciously aware of a large portion of their own media consumption, not to mention their media multitasking behavior (Baumgartner et al. 2016). Accurate estimations of media use are especially difficult for younger people (Vandewater and Lee 2009), and it becomes even more difficult due to increasingly fragmented media behavior (Baumgartner et al. 2016). While many attempts have been made to recognize and assess the prevalence of everyday media multitasking behavior, this phenomenon still remains quite unexplored (Segijn et al. 2017).

The most widely used measure of media multitasking patterns to date is the Media Multitasking Index (MMI) developed by Ophir, Nass and Wagner (2009). The MMI assesses the total number of hours per week spent with 12 different forms of media (Baumgartner et al. 2016). The assessment is conducted using The Media Survey Questionnaire, which is designed "to determine the mean number of media a person simultaneously consumes when consuming media" (Ophir et al. 2009, p. 15583). For each form of media, participants indicate how often they subsequently use the other 11 forms of media in the questionnaire, which adds up to a total of 132 different media multitasking combinations (Baumgartner et al. 2016). The common application of MMI suggests a categorization of participants in the study into two separate groups of multitaskers. Based on their reported media use and multitasking patterns in the questionnaire, a distinction is made between *heavy media multitaskers* (HMM) and *light media multitaskers* (LMM) (Ophir et al. 2009). This categorization is often used as the steppingstone for comparative studies related to, for example, media multitasking frequency and cognitive control (e.g. Ophir et al. 2009; Baumgartner et al. 2016; Wiradhany and Nieuwenstein 2017).

The MMI is an exhaustive approach which covers media multitasking in its full [a priori designed] extent. However, it also comprises a series of challenges and limitations (e.g. Minear et al. 2013; Carrier et al. 2015; Baumgartner et al. 2016; Wiradhany and Nieuwenstein 2017). One challenge with the MMI approach is the mere length of the questionnaire which easily leads to participant fatigue, low motivation, high dropout rate and poor response quality, especially in studies with young participants (e.g. Borgers, de Leeuw, and Hox 2000; Konrath, Meier, and Bushman 2014; Baumgartner et al. 2016). Another challenge with MMI is that the results are often skewed due to the a priori set media combinations in the questionnaire. Some combinations are rarer than others in diginatives' everyday life, for example, reading a book while calling someone (Baumgartner et al. 2016).

Furthermore, results from comparative MMI studies have showed vastly contradictory results. For example, Ophir et al. (2009) found a deteriorated performance among HMMs on their ability to ignore irrelevant external stimuli in a dual task setting, compared to the performances of LMMs. In a similar setting, Minear et al. (2013) found no significant difference in the performance between HMMs and LMMs. The results of the latter study were confirmed in a replication study made by

Wiradhany and Nieuwenstein (2017), which suggest very little support for the idea that differences in media multitasking frequency would be directly related to differences in information processing capacity. Evidence of such an association may be detected in studies with larger sample sizes, however, the contradictory results can also be an indication of the difficulties with drawing a clear line between HMMs and LMMs based on the MMI approach. The difference could be very small, vary over time or in different situations, and also be heavily affected by biases and measurement issues of the MMI approach (ibid.).

Still, while the MMI approach has been heavily criticized and questioned, it is frequently used for assessing media multitasking patterns (Baumgartner et al. 2016). This could partly be because of the general lack of cohesion, conceptualization and targeted theories within in this particular area of media multitasking research (e.g. van der Schuur et al. 2015). It could also be because of the absence of any other more comprehensive approach to studying everyday media multitasking patterns. Studies within this area where the MMI approach is not used often restrictively assess only a very specific set of media multitasking combinations (e.g. Levine, Waite, and Bowman 2007; Collins 2008; Bowman et al. 2010; Junco and Cotten 2012; Baumgartner et al. 2016) or apply only single item measures (e.g. Duff et al. 2014; Baumgartner et al. 2016) which also lead to inconclusive and insufficient measures and assessments. Overall, the area of media multitasking patterns remains very disperse in terms of theory and theorizing efforts. Most pattern-related studies seem to draw on theoretical perspectives from the other two areas of predictors and consequences, which further increases confusion concerning causality and conceptualization (e.g. Lin and Parsons 2018; Aagaard 2019).

4.3. Media multitasking consequences

More comfortable online than out partying, post-Millennials are safer, physically, than adolescents have ever been. But they're on the brink of a mental-health crisis. (Twenge 2017)

The ability to multitask efficiently is often considered a desirable and positive characteristic by diginatives (e.g. Wang and Tchernev 2012). Multitasking seemingly allows them to divide their attention between two or more tasks concurrently, and thus saves time and enhances their productivity (Judd 2013). However, this has repeatedly been proven a false feeling of productivity (see e.g. Watson and Strayer 2010; Brasel and Gips 2011; Robinson 2017). Instead, extensive research on immediate as well as long-term consequences indicate negative results almost exclusively; multitasking always comes with a cost due to our limited attention capacity (e.g. Carrier et al. 2015; van der Schuur et al. 2015; Robinson 2017). This has led to a widespread concern, especially regarding the long-term implications of repeatedly trying to do many things at the same time already at a young age.

Most studies on media multitasking consequences are conducted in laboratories with a dual-task setup; the immediate effects are measured in terms of how cognitive distractions affect the primary task performance or overall comprehension (see e.g. Bardhi, Rohm, and Sultan 2010). In an everyday context, long-term effects, such as a persistent inability to focus, a decreased ability to process and remember information, reduced levels of creativity and problem-solving performance (e.g. Stone 2009; Carr 2011) and effects on psychological as well as physiological wellbeing (e.g. van der Schuur et al. 2015) have been identified. Prior research on media multitasking consequences have focused on three main categories of "costs" or negative consequences:

- *Cognitive consequences* – consequences related to focusing and sustaining attention, to processing information, and to the ability of switching between tasks;
- *Socioemotional consequences* – consequences related to disrupted behavioral patterns and routines, social interactions and general well-being;
- *Consequences on performance* – consequences associated with performance in different activities, e.g. learning, creativity and problem-solving capabilities.

Table 4 (see p. 65) offers a brief overview of some documented negative consequences within these three main areas, along with some key studies and references. As mentioned, positive effects of media multitasking are rare, or at least they are rarely reported in academic literature, which is quite exhaustively focused on the negative consequences. However, a few positive findings are also highlighted in this section.

4.3.1. Cognitive consequences

As mentioned earlier, media multitasking always implies some form of cognitive interference or cognitive overload, resulting in consequences such as task switching costs and slower task performance times (e.g. Kirschner and Karpinski 2010; Rosen 2010; Carrier et al. 2015; van der Schuur et al. 2015). Classic cognitive theories on attention, information processing and working memory, are often applied to explain how our limited attention and information processing capabilities affect cognitive control mechanisms and subsequent socioemotional behavior and task performance in relation to frequent media multitasking. Our ancient brains are simply not equipped for or in sync with the modern world we live in (Gazzaley and Rosen 2016; Hansen 2019a).

Table 4. Overview of documented negative consequences

COGNITIVE CONSEQUENCES	SOCIOEMOTIONAL CONSEQUENCES	CONSEQUENCES ON PERFORMANCE
Scattered attention and task switching costs *Ophir et al., 2009* *Wallis, 2010* *Gazzaley & Rosen, 2016* *Leysens, le Roux & Parry, 2016* **Impaired information processing** *Lang, 2000* *Jeong & Fishbein, 2007* *Brasel & Gips, 2011* **Reduced working memory** *Adler & Benbunan-Fich, 2013* *Mokhtari, Delello & Reichard, 2015* *Gazzaley & Rosen, 2016*	**Addictive behavior and FOMO** *Rosen, 2012* *Duke & Montag, 2017* *Wolniewicz et al. 2018* **Mediated/interrupted social interactions** *Bardhi et al., 2010* *Jacobsen & Foerste, 2011* *Pea et al., 2012* **Anxiety, stress & sleeping disorders** *Calamaro, Mason & Ratcliffe, 2009* *Becker et al., 2012* *Rosen, 2012* *Rosen, 2017*	**Impaired driving ability** *Ranney et al., 2000* *Treffner & Barett, 2004* *Strayer et al., 2006* **Diminished problem-solving ability** *Bowman et al., 2010* *Adler & Benbunan-Fich, 2013* *Adler & Benbunan-Fich, 2015* **Lower grades and fragmented learning processes** *Lee, Lin & Robertson, 2012* *Wood et al., 2012* *Srivastava, 2013* *Voorveld & van der Goot, 2013* *Wu, 2017*

The attention perspective

Cognitive control refers to our ability to select and maintain thoughts and actions that represent internal goals and means to achieve these goals (van der Schuur et al. 2015). This concept embraces, for example, cognitive processes such as focusing attention on goal-relevant information and filtering irrelevant information from relevant information (see e.g. van der Schuur et al. 2015; Gazzaley and Rosen 2016). The underlying assumption within the attention perspective is simple; our attentional capacity is limited. Trying to perform several tasks simultaneously challenges this limited attentional capacity (May and Elder 2018).

When simultaneously trying to engage in multiple tasks or maintain multiple trains of thoughts, our attention becomes divided among multiple targets, and the attention level may radically vary between foreground (primary) and background (secondary) tasks (e.g. Pilotta and Schultz 2005). This fragmentation of focus most often comes with a price of decreased performance (e.g. Herbranson 2017). Divided attention is by no means a new phenomenon and has been thoroughly researched in terms of auditory and visual stimuli, e.g. attending to multiple conversations at a cocktail party (see e.g. Cherry 1953; Cherry and Taylor 1954; Stifelman 1994), and monitoring two videos simultaneously (e.g. Neisser and Becklen 1975; Becklen and Cervone 1983). The notion of selective attention would allow a person to focus on one stimuli, while filtering out the other(s), whereas the cognitive limitations of a

person's attentional capacity becomes evident when trying to focus on more than one auditory or visual stimuli at the same time (Herbranson 2017). The cost of divided attention seems to be that one stimulus consistently and unintentionally "overtakes" the others, and the information from the unattended stimuli is limited and easily forgotten (ibid.).

One explanation for why attention can be allocated efficiently to only one task at a time, i.e. selective attention, is provided by the Bottleneck Theory of Attention (e.g. Broadbent 1958; Maslovat et al. 2013; May and Elder 2018). As several stimuli arrive at a processing "bottleneck" and only one item can be processed at a time, filtering or selection of stimuli must occur; a secondary task can thus only be processed when the primary task is completed (May and Elder 2018). While this theory has been heavily criticized for its rigidity (e.g. McLeod 2018), the notion of having to filter or allocate attentional resources due to a "mental bottleneck" can also be found in more recent theories. For example, rooted in studies conducted by Ophir et al. (2009) on cognitive control among media multitaskers, van der Schuur et al. (2015) present a similar theoretical approach where "the executive system controls mental resources, allocating them where necessary" (May and Elder 2018 , p. 3). Van der Schuur et al. (2015) present two central hypotheses concerning the potential effects of media multitasking on cognitive control:

- *The Scattered Attention Hypothesis* which implies that frequent media multitasking decreases the ability to filter relevant information from irrelevant information;
- *The Trained Attention Hypothesis* implies that frequent altering between tasks and information sources may train and improve certain control processes such as task switching and information filtering.

Based on a division between HMMs and LMMs (according to the MMI approach), these hypotheses were tested against a vast number of studies using self-report questionnaires and performance-based laboratory test settings (van der Schuur et al. 2015). Overall, the results were inconclusive; very little evidence was found especially for the trained attention hypothesis (ibid.). Later studies on cognitive control and limited attention capacity indicate quite alarming effects of frequent media multitasking on, e.g., the ability to sustain attention for a longer period of time (see e.g. Leysens, le Roux, and Parry 2016). Youngsters and young adults seem particularly susceptible to consequences on cognitive control mechanisms, as important cognitive functions continue to develop at a young age (van der Schuur et al. 2015). The human brain is estimated not to be fully developed until you reach the age of around thirty (Rosen 2010). If this is the case, diginatives have more limited capabilities to handle multitasking processes than adults, which may imply longer processing times and severe switching costs (ibid.).

The information processing perspective

According to the information processing perspective, media multitasking implies increasingly fragmented and impaired media message and information processing

(see e.g. Brasel and Gips 2011; Kazakova et al. 2015). Information processing theories such as the Elaboration Likelihood Model (Petty and Cacioppo 1984) and the Limited Capacity Model of Mediated Message Processing (Lang 2000) are often used to explain why media multitasking leads to impaired cognitive processing (e.g. Voorveld and van der Goot 2013).

Even though these classic models were developed in and for a completely different media environment than we experience today, they are still frequently used. For example, the Limited Capacity Model of Mediated Message Processing suggests that people have a limited capacity for cognitive processing of information related to three fundamental dimensions: encoding, storage and retrieval (Lang 2000). These dimensions allow messages to be processed under controlled conditions (conscious subprocess) or automatically elicited (unconscious subprocess). However, the ability to process messages is limited, and therefore it is impossible to process all mediated information in today's media saturated environment. Simultaneously trying to process two or more messages (i.e. dividing one's attention) limits the ability to process these properly, resulting in incoherent or selective processing (e.g. Lang; Jeong, Se-Hoon and Fishbein 2007; Jeong, Se-Hoon and Hwang 2012; Voorveld and van der Goot 2013).

The Elaboration Likelihood Model explains different ways people process stimuli (Petty and Cacioppo 1984). Two main opposite levels are acknowledged; 1) the central route or high elaboration, which involves a high degree of engagement and thought, and 2) the peripheral route or low elaboration, which involves a low degree of engagement and thought. The level of elaboration correlates to a varying degree of activated cognitive processes, and two key factors influence the level of elaboration and the cognitive processing resources activated: 1) motivation, i.e. the desire to process a specific message, and 2) ability, i.e. the capacity for critical evaluation of a specific message. When multitasking with media, the second factor (ability) is interrupted, resulting in impaired evaluation and processing of messages (ibid.).

The working memory perspective

Traditional theories on working memory also provide insight into the cognitive consequences of media multitasking (e.g. Baddeley 2012; May and Elder 2018). Prior research within this specific area has focused mostly on cognition directed to the present moment, very recent past or series of moments (Uncapher, Thieu, and Wagner 2016). Visual working memory is a cognitive system that allows for a limited amount of visual information to be stored in a temporary storage buffer, and media multitasking has been found to impair this cognitive function (see e.g. Hollingworth and Beck 2016; Uncapher, Thieu, and Wagner 2016; Cain et al. 2016; Redick et al. 2016).

Uncapher et al. (2016) also studied the relation between frequent media multitasking and long-term memory. They report four key findings: 1) HMMs in general exhibited lower working memory performance, no matter if external

distraction was present or absent, 2) those with a lower performance in working memory tasks also performed poorly in long-term memory tasks, 3) differences in memory task performances reflected differences in discriminability rather than decision bias, and 4) attentional impulsivity correlated with media multitasking behavior and reduced working memory performance. The findings indicate long-term effects of frequent media multitasking, such as wider attentional scope and higher attentional impulsivity, which may allow goal-irrelevant information to compete with goal-relevant information (ibid.). Overall, frequent everyday media multitasking is associated with reduced memory ability, both in terms of recent working (short-term) memory and long-term memory.

4.3.2. Socioemotional consequences

If you find a person who frequently uses social media depressed, how can you know it's because of the social media? It could just as easily be so that depressed people are drawn to Facebook and Instagram. (Hansen, 2019a).

The vast majority of prior research within the area of media multitasking consequences has focused on the above-mentioned cognitive perspective, assuming that cognitive overload and impaired cognitive control constitute the foundation for other, subsequent, consequences on socioemotional functioning and task performance. The past few years have seen an increase in an important stream of research that focuses on socioemotional consequences (e.g. Carrier et al. 2015; van der Schuur et al. 2015). The concept of socioemotional functioning is used to describe the intertwining relationship between social and emotional functioning (van der Schuur et al. 2015). Frequent media multitasking has been linked to severe conditions such as depression, social anxiety, deteriorated sociability and sleeping problems (ibid). Furthermore, heavy media multitaskers have been found to be more susceptible to feelings of overwhelm, over-stimulation, stress and exhaustion (see e.g. Stone 2009; Kirschner and Karpinski 2010). Though this is still a relatively unexplored area of research, studies seem to confirm that the strain that media multitasking causes on our limited cognitive control processes is the main reason for such subsequent socioemotional consequences.

Severe socioemotional consequences have been observed among youngsters and young adults especially (see e.g. Becker, Alzahabi, and Hopwood 2012). In fact, stress-related illnesses and burnout caused by trying to do too much all the time is rapidly developing into a modern epidemic. While there are many socioemotional aspects that have been addressed in prior research, three of the most studied aspects are discussed in this section. Within this area, the issue of causality is especially important to acknowledge, as it is difficult to clearly identify the cause-effect relation in the cases presented and discussed below.

Addictive behavior and Fear of Missing Out (FOMO)

The rapid development of mobile technology has led to a rapidly mounting dependence on technology (e.g. Cheever, Peviani, and Rosen 2018). Diginatives are rapidly developing addiction-like everyday media multitasking patterns (e.g. Oulasvirta et al. 2012; Duke and Montag 2017a). Classic addiction symptomology is often applicable, including loss of control (for example, distortion of time spent on media), serious withdrawal symptoms and negative effects on social and work life (e.g. Kwon et al. 2013; Lanaj, Johnson, and Barnes 2014; Lin, Y. et al. 2015; Duke and Montag 2017). Consequently, classic theories and models on addiction and addictive behavior, stemming from a stream of research on gaming and Internet addiction, are often applied in research on media multitasking addiction.[27]

FOMO (Fear of Missing Out) is a withdrawal phenomenon, often associated with media addiction in particular (e.g. Carrier et al. 2015; Wolniewicz et al. 2018). Przybylski et al. (2013, p. 1841) have defined FOMO as "a pervasive apprehension that others might be having rewarding experiences from which one is absent, FOMO is characterized by the desire to stay continually connected with what others are doing." FOMO has been linked to an array of different psychological and physiological conditions, e.g. high level of alcohol consumption and risky behavior (Riordan et al. 2015), as well as depression and emotional shortcomings (e.g. Baker, Krieger, and LeRoy 2016; Elhai et al. 2016; Dhir et al. 2018).

FOMO is also a characteristic example of the challenge in determining causality in media multitasking. While FOMO can easily lead to overuse and addiction to media and media multitasking (e.g. Baker, Krieger, and LeRoy 2016), excessive media multitasking also feeds the need to stay in touch and to constantly know what is going on (e.g. Rosen 2012). Similarly, addictive behavior is a highly alarming consequence of frequent media multitasking (ibid.). At the same time, addiction can also be seen as a predictor for such behavior (e.g. Carrier et al. 2015). It is impossible to determine the relationship between cause and effect in these cases. Nevertheless, addictive media multitasking behavior and FOMO have repeatedly been linked to negative socioemotional consequences such as feelings of loneliness, depression, and disruptive interpersonal face-to-face interactions (see e.g. Baker, Krieger, and LeRoy 2016; Elhai et al. 2016; Dhir et al. 2018).

Social interactions

Effects of frequent media multitasking on social interactions have primarily been studied in terms of social connection or social isolation, for example, with questions

27 For a more elaborate discussion on the concept of media addiction, see section 5.5.3.

like, "Are technology and online relationships making us more or less social?" paving the way (e.g. Kraut et al. 2002; Morahan-Martin and Schumacher 2003; Waytz and Gray 2018). There is also a growing body of work exploring how technology-related habits and media multitasking are affecting individuals' social competencies and emotions in social interactions (see e.g. Pea et al. 2012; Uhls et al. 2014; George and Odgers 2015; Misra et al. 2016; Mills 2016). Researchers claim that our socioemotional functioning is affected by heavy media multitasking behavior, since this easily disrupts our face-to-face interactions (e.g. Pea et al. 2012). Smartphones and other mobile devices are always close by, and while they offer convenient means of meeting new people and staying in touch with friends and family (Bardhi, Rohm, and Sultan 2010; Jacobsen and Foerste 2011), they are also a constantly present source of distraction in any social situation (e.g. Pea et al. 2012). Many studies show that the mere presence of a mobile phone will affect a social interaction and conversation, as this increases the likelihood of behavioral interruptions and cognitive distractions (see e.g. Thornton et al. 2014).

In accordance with increased presence of technology in everyday social interactions, the lines between "real" experiences and mediated experiences become blurred (e.g. Thompson 1995; Timmins and Lombard 2005). It becomes difficult to read the presence, emotions, and engagement of the other participants in face-to-face interaction if distracting screens are part of the picture. Technology and virtual reality offer unprecedented opportunities to interact with people that are geographically distant. However, this will never overtake face-to-face interactions completely. Real-life social skills are a necessary foundation for forming friendships and managing technology in a beneficial way in social situations (e.g. Keles, McCrae, and Grealish 2019). Still, frequent media multitasking and increased "mixed" social experiences have been found to affect people's social capabilities and sociability in terms of, for example, empathy, emotional intelligence, perspective taking, and emotion recognition (e.g. Waytz and Gray 2018).

Anxiety, stress and sleeping disorders

While many studies highlight positive aspects of mobile media in terms of connectedness, tendencies of loneliness, depression and social anxiety are prominent especially among adolescents who frequently engage in media and media multitasking (Keles, McCrae, and Grealish 2019). Studies showcase a negative correlation between heavy social media or smartphone use and psychological, as well as physiological well-being (see e.g. Shakya and Christakis 2017; Dhir et al. 2018). For example, Dhir et al. (2018) suggest that compulsive media use and media multitasking trigger social media fatigue. Furthermore, while the growing trend of attention seeking in digital as well as analog environments (see e.g. Gillberg 2014; Hardy and Castonguay 2018) may provide diginatives with feelings of satisfaction and enjoyment, this often addictive attention-seeking behavior and anticipation of online responses may also lead to severe socioemotional consequences such as anxiety, stress and depression (e.g. Rosen 2012; Dhir et al. 2018).

Even though the evidence for the relation between media multitasking and these types of symptoms and disorders is not always conclusive and highly dependent on individual differences and situational fluctuations, the effects on sleeping patterns have been found to be significant; a high level of media multitasking is related to less sleep and more sleeping problems (Calamaro, Mason, and Ratcliffe 2009; van der Schuur, Winneke A et al. 2018). For example, FOMO has been identified as a major predictor of sleeping problems and sleep deprivation (Rosen, L. 2017). In 2017, 80% of adolescents said they rarely or never sleep well (ibid.). Rosen et al. (2016) found that the last thing most diginatives do before they fall asleep is use their smartphone and that they always sleep with their phone close by. Half of the participants in their study checked their phones during the night if they woke up, also for other purposes than merely checking the time. Checking the phone was also the first thing they did in the morning, even before rising. Due to a constant information "intake" and processing, this behavior affects the length and quality of sleep, which is essential for the human body and our well-being (ibid.). Furthermore, the mobile screen's blue light also affects levels of crucial hormones needed for a good night's sleep (e.g. Rosen et al. 2016; Rosen 2017; van der Schuur, Winneke A et al. 2018).

As shown, frequent everyday media multitasking and the subsequent cognitive overload and impairment of cognitive control mechanisms lead to an array of negative effects on socioemotional functioning. However, causality remains a major challenge within this area of study, and more research within this particular area is needed (in accordance with e.g. van der Schuur et al. 2015).

4.3.3. Consequences on performance

The consequences of media multitasking on task performance have been studied in a myriad of activities and contexts (Angell et al. 2016). Significant immediate and distractive effects have been found on performance, for example, when driving a car (e.g. Strayer, Drews, and Crouch 2006; Stavrinos et al. 2019) and in problem-solving tasks (e.g. Adler and Benbunan-Fich 2015). In general, these types of negative consequences on performance are linked to our limited cognitive processing capacity and, for example, issues related to time management and impaired information processing (e.g. Stavrinos et al. 2019). Moreover, when engaging in multitasking, attention levels between media have been found to vary, suggesting that a foreground and background medium emerges (Pilotta and Schultz 2005). Also, socioemotional consequences of frequent media multitasking can lead to subsequent consequences on task performance; for example, lack of sleep is often linked to impaired task performance (e.g. Rosen 2017).

Frequent everyday media multitasking has also been found to cause long-term effects on task performance (e.g. Carrier et al. 2015). For example, Ophir et al. (2009) suggest that frequently switching back and forth between tasks in any specific learning environment (e.g. in class or at home) may affect the ability to filter out irrelevant distractions in other contexts and situations, too. However, the longer the perspective,

the more difficult it becomes to isolate one specific factor or behavioral pattern as the sole reason for decreased task performance in the everyday context. Next, three main areas are presented where media multitasking and its negative effects on task performance have been thoroughly studied.

Driving

One of the most prominent areas of research on media multitasking and its effect on task performance is the context associated with driving a car (see e.g. Nijboer et al. 2016; Stavrinos et al. 2019). There is general belief that driving simply cannot be combined with any media related tasks without severe negative consequences on driving performance (Nijboer et al. 2016). The smallest consequences in terms of interrupted concentration or reaction times can lead to outright catastrophic consequences. Therefore, the consequences of an array of secondary tasks performed while driving have been studied; everything from listening to music or the radio (e.g. Brodsky 2001; Nijboer et al. 2016), to having a phone conversation holding the phone with one hand (e.g. Strayer and Johnston 2001; Treffner and Barrett 2004). These studies show that using a phone or a tablet while driving leads to rigorously impaired driving performance, mainly due to the fact that the person who drives shifts his or her gaze from the road to the device in question, and therefore becomes less observant on the road and the driving activity (e.g. Strayer, Drews, and Crouch 2006; Nijboer et al. 2016; Stavrinos et al. 2019). The effects on driving performance are immediate and can cause dangerous situations not only for the driver, but also for passengers and other cars and people nearby.

Problem-solving and creativity

Immediate distractive effects of media multitasking have also been studied in relation to creativity and problem-solving tasks. Similar strain on the attentional capacity has been found in these types of tests as well as for other tasks and contexts. For example, Adler and Benbunan-Fich (2013; 2015) found that the accuracy in problem solving tasks, such as solving sudokus or word puzzles, worsened when multitasking. Other researchers report similar results of reduced performances in creative tasks, also (e.g. Stone 2009; Carr 2011). Bowman et al. (2010) note that even though the outcome of a problem solving or creativity task may not be directly affected by media multitasking, the lag time resulting from switching between tasks is likely to cause an addition to the time it takes to perform the task (see also e.g. Carrier et al. 2015). Furthermore, frequent media multitaskers easily grow accustomed to constant switching between tasks, which can eventually reduce the ability to focus on one task at a time (e.g. Wallis 2006; Wallis 2010; van der Schuur et al. 2015). Also, continuous media multitasking and divided attention have been found to lead to increased distractibility and spontaneous mind wandering (Ralph et al. 2014). These types of long-term effects are likely to affect the performance in any everyday task that requires some degree of problem-solving skills, cognitive flexibility or creativity (Lopez and Orr 2018).

Academic performance

The context that by far is the most studied within the area of media multitasking is the academic context. Frequent media multitasking and the consequential cognitive overload and attention residue consistently leads to interrupted learning processes and overall impaired learning (e.g. Levy and Pashler 2001; Leroy 2009; Voorveld and van der Goot 2013). This is mainly due to time management issues (more time spent on using media than on academic tasks) and limited information processing capacity (more capacity used for processing information that is irrelevant to academic tasks) (e.g. van der Schuur et al. 2015). The negative consequences on academic performance are often measured in terms of 1) *academic outcomes*, e.g. Grade Point Average (GPA), course grades and test scores, 2) *study-related attitudes and behavior*, e.g. study time, motivation and the ability to focus on a study task, and 3) *perceived academic learning*, e.g. students' perceived understanding of and performance in academic tasks (e.g. Rosen et al. 2011; Rosen, Carrier, and Cheever 2013; Carrier et al. 2015; van der Schuur et al. 2015; May and Elder 2018). Frequently engaging in media multitasking has also been associated with negative long-term consequences, such as a reduced ability to focus on one task at a time in the long run (e.g. Wallis 2006; Wallis 2010; van der Schuur et al. 2015).

In studies pertaining to effects on academic performance, the focal point has primarily been one specific learning environment, for example, in the classroom or at home (see e.g. Rosen et al. 2011; Rosen, Carrier, and Cheever 2013; Carrier et al. 2015). Furthermore, one specific media activity is most often in focus, for example text messaging, e-mailing or engaging in Facebook or other social media sites (e.g. Kirschner and Karpinski 2010; van der Schuur et al. 2015; Chen and Yan 2016). As mentioned earlier, most students engage in media multitasking frequently in many different learning environments. This fragmented behavior causes interruptions and interference in their learning processes. For example, Kinzie et al. (2005) found that an activity as simple as sending a text message can cause a severe interference. Rosen et al. (2011) found that heavy texting during class, in particular, (more than 16 texts received and sent during a time period of 30 minutes) led to significantly lower results concerning remembering the material presented. Wood et al. (2012) concurred that different types of content and technology causes different degrees of distraction, e.g. checking social media content was found to be more distracting than text messaging or checking e-mails because of a greater emotional appeal. This is also true outside the classroom when engaging in, for example, video lectures or instructional podcasts or video clips (e.g. Lee, Lin, and Robertson 2012; Srivastava 2013).

Junco and Cotten (2011) found that many students keep multitasking even though they are aware of the potential detrimental effect it may have on the quality of their work. However, in general, students demonstrate poor awareness of how media multitasking affects their learning, and most often they overestimate their ability to perform several tasks simultaneously (e.g. May and Elder 2018). Furthermore, even though there is a vast amount of evidence supporting negative consequences on academic performance, some researchers claim that the consequences are relatively

minor or moderate, especially compared to task performance in other contexts, for example, while driving (van der Schuur et al. 2015). Still, to avoid distractions while studying and subsequent negative consequences on academic performance, diginatives need a better understanding of their attentional abilities and better strategies for regulating their attention (Wu 2017).

4.3.4. Are there any positive effects?

While the literature review for this study encompassed scarce findings related to any kind of positive effect, there are a few specific issues worth highlighting. For example, some researchers state that extensive media multitasking can trigger our brains to form new patterns for searching for and sorting through information, and thereby, lead to improved multitasking skills (e.g. Salvucci and Taatgen 2008; van der Schuur et al. 2015). For example, *The Trained Attention Hypothesis* presented by van der Schuur et al. (2015) suggests that frequent media multitasking could have a positive effect on developing cognitive control processes and the ability to filter irrelevant information over time (see also e.g. Ophir et al. 2009; Alzahabi and Becker 2013). A similar approach, the *Threaded Cognition Theory (TCT)*, was presented by Salvucci and Taatgen (2008; 2010), which aims to explore the cognitive perspective of everyday multitasking further. This has developed into one of the more influential contemporary cognitive theories within the area of media multitasking, which can be used to predict when or whether multitasking could be performed efficiently and when or whether this will lead to cognitive interference or other negative consequences (ibid.).

The TCT approach proposes a central *serial procedural resource*, which takes in and initiates requests to various *processing resources*, so-called *threads* (e.g. Salvucci and Taatgen 2008). This allows for concurrent execution of tasks, except for when the serial procedural resource is required or when processing resources are occupied. This complex model is compared to a cook who is baking bread in a kitchen; the cook is the central procedural resource and the activities involved in baking the bread are the processing resources, the threads. The cook is required to be around for some processes from beginning to end, e.g. preparing the dough, and for other processes that need to be initiated, e.g. putting the dough in the oven. But the cook can also let some processes run independently, e.g. the actual baking of the bread in the oven. *Lag time* is the time that occurs during such processes, i.e. the cook has nothing to do while the bread is in the oven, which means that this limited resource (i.e. the cook) can be allocated to another task for a certain period of time. (Salvucci and Taatgen 2008; Salvucci and Taatgen 2010; Carrier et al. 2015). This kind of lag time can allow people in everyday situations to "train" arranging their cognitive processing efficiently across tasks (Salvucci and Taatgen 2008). Thus, it opens up the possibility for efficient forms of everyday multitasking and the potential for developing one's multitasking skills (e.g. Carrier et al. 2015).

The acknowledgement of the probability that people may actually "train" their brains into allocating cognitive resources and processes more efficiently between tasks correlates with the very existence of multitasking training programs among certain professions. For example, pilots and aircraft crews are trained in multitasking to be better prepared for handling and avoiding potentially dangerous situations while flying (see e.g. Loukopoulos, Dismukes, and Barshi 2009). However, according to the TCT approach, the "change with practice" process is very slow. Even though heavy practice with everyday media multitasking may lead to e.g. time savings by running some cognitive processes in parallel, independently and in the background, the outcome of the tasks can still be affected in a negative way (Carrier et al. 2015). In fact, an everyday scenario of truly efficient media multitasking without any interferences or lag times issues seems unlikely. Media multitasking always implies some sort of cost (Carrier et al. 2015; van der Schuur et al. 2015; Robinson 2017). For example, if the main task entails active learning of a specific topic by reading a book, it seems unlikely that the learning outcome would be as good if you multitask while you read than if you concentrate only on the reading activity, no matter how efficiently you are able to allocate mental resources and physical and cognitive processes otherwise (e.g. Carrier et al. 2015).

Furthermore, while Sanbonmatsu et al. (2013) suggest that some people are actually better cognitively equipped for processing several simultaneous tasks, it is only a very small part of the entire population. Foehr (2006) and Watson and Strayer (2010) suggest that about 1 % of the entire population are actually so-called "supertaskers", who are able to process several things concurrently and are equipped for developing their ability to do so. These people, in general, showcase greater cognitive abilities in managing distractions and controlling impulses (Sanbonmatsu et al. 2013). Some researchers present evidence of improved multitasking skills specifically among youngsters and young adults, presumably as a consequence of frequent practice from a very early age (see e.g. Dzubak 2008). However, very limited and inconsistent empirical evidence is available to evaluate and reinforce these findings properly (e.g. Carrier et al. 2015; May and Elder 2018).

While these findings may not seem that positive after all, there is one specific stream of research on media multitasking that consistently showcases positive results. This embraces the activity of listening to music while performing other activities simultaneously. Listening to music via mobile devices while, for example, exercising or studying is one of the most common forms of media multitasking among diginatives (Voorveld and van der Goot 2013). There are, in fact, several studies that support the notion that listening to background music improves focus on the primary task at hand in many different contexts, for example, while driving (e.g. Nijboer et al. 2016) and in different learning environments (e.g. Kämpfe, Sedlmeier, and Renkewitz 2011; van der Schuur et al. 2015). One explanation for this phenomenon may be that heavy media multitaskers have been found to perform somewhat better in multisensory integration tasks than others, presumably because of their extensive experience with integrating information from different sources concurrently (see e.g.

Lui and Wong 2012). This can lead to a strengthened ability to create so called media hierarchies; i.e. mentally order different concurrent activities so that e.g. the learning task remains the primary task that gets the needed attention, while the background music remains a secondary source that requires hardly any complex mental processing at all (e.g. Bardhi, Rohm, and Sultan 2010; Angell et al. 2016). Background music may also help diginatives focus on the primary task by helping them to tune out other potentially distracting external stimuli (ibid.).

4.4. Media multitasking predictors

The literature review presented above pertaining to the areas of media multitasking patterns and consequences showed that diginatives, in general, are frequent media multitaskers and that there is a rising trend of increasing everyday media multitasking. Concurrently, the extensive list of documented negative consequences keeps growing. To understand this paradoxical trend, and to advance the field of research, we need to move beyond the questions of what and how (e.g. Aagaard 2015; Robinson 2017), and explore the underlying reasons behind the individual's engagement in media multitasking. We need to shift our focus to the question of why; why do diginatives frequently engage in media multitasking, knowing what consequences it may have?

This area of research is referred to as exploring *predictors* (also *antecedents* or *motivators*)[28] of media multitasking (Kononova and Chiang 2015), and is particularly challenging due to the complex nature of everyday media multitasking as well as the issue of inconclusive results concerning causality (e.g. van der Schuur et al. 2015; Uncapher et al. 2017). It is close to impossible to derive cause and effect in everyday media multitasking activities. For example, do students media multitask because they are bored? Or, are they bored because they have grown used to constant stimulation due to frequent media multitasking? (see e.g. Carrier et al. 2015). The models and perspectives presented next originate in prior studies within this area, where causality has been addressed and discussed at length. However, while causality is acknowledged as a challenge in research on media multitasking predictors, this particular issue is not explored further in this section.

Overall, the area of media multitasking predictors has gained more and more interest and attention during the past decade. Still, this stream of research remains quite unexplored and dispersed. According to Junco and Cotten (2011), a vast majority of university students are not aware of the full extent of the detrimental

28 The concepts of *antecedents*, *predictors* and *motivators* are used interchangeably in prior studies to describe this particular area of study. Here, the concept of *media multitasking predictors* is used.

consequences of frequent media multitasking. On the contrary, they feel that constant multitasking helps them organize their lives and perform well in given tasks. This (false) feeling of productivity and accomplishment has been singled out as an important predictor of engagement in media multitasking (ibid.). However, this section lists a few additional critical perspectives that have been developed in recent years to understand why people keep engaging in media multitasking behavior.

4.4.1. Uses and gratifications theory

One of the most widely used theoretical perspectives in studies on media multitasking predictors is the *Uses and Gratifications Theory (UGT)*. This perspective was traditionally developed to understand [mass]media consumption patterns with the purpose of explaining why and how people use specific media (Katz, Blumler, and Gurevtich 1974). There are four fundamental assumptions in the UGT approach: 1) the audience is active with goal-directed media use, 2) individuals make deliberate media consumption decisions, 3) media are assumed to compete with other resources for need satisfaction, and 4) the gratification sought from media vary across social roles and psychological disposition of individuals (e.g. West and Turner 2014; Robinson 2017). Furthermore, the theory stresses the relation between the gratification sought (GS) and the gratification obtained (GO). These aspects constitute the foundation for explaining why people turn to certain media to satisfy certain needs. Also, the greater gratification obtained, the likelier it is to choose the same media again when seeking to gratify a similar need. (ibid.)

The UGT approach has been criticized, for example, for the basic assumption of an active audience and deliberate consumption decisions and for its very traditional mass media focus (see e.g. Severin and Tankard 1997). Still, it is widely applied in media consumption (e.g. LaRose and Eastin 2004; Sundar and Limperos 2013) and media multitasking research (see e.g. Wang and Tchernev 2012; Voorveld and van der Goot 2013; Ahad and Anshari 2017). A number of needs for which gratification is sought after has been listed, traditionally categorized into five main categories (see e.g. West and Turner 2014):

1) *cognitive needs* – acquiring information, knowledge and understanding;
2) *affective needs* – emotions, pleasure, feelings;
3) *personal integrative needs* – credibility, status, stability;
4) *social integrative needs* – family and friends;
5) *tension release needs* – escape and diversion.

However, since its introduction in the 1970s, the media environment has dramatically changed. Consequently, several developed and slightly modified versions of the theory, as well as the main categories of needs, have emerged. For example, Ahad & Anshari (2017) apply a more detailed list of needs in their study on smartphone use and multitasking among youngsters. They found that smartphones provide youths with a sense of improved accessibility, mobility and independence, as well as help them communicate and keep in touch with family and friends and micro-

coordinate their everyday lives (ibid.). Wang and Tchernev (2012) apply the set of traditional needs combined with dynamic reciprocal influences to develop new dynamic UGT models to predict the level of gratification in multitasking behavior. Zhang and Zhang (2012) combine UGT with the Theory of Situated Action to include a situational perspective in exploring media multitasking in computer-mediated communication. Furthermore, Chang (2017) combines the UGT approach with Arousal Theory to better cover individual factors that affect media consumption decisions, such as attention and sensation-seeking tendencies and intentions.

4.4.2. A model for predicting media multitasking behavior

As a response to the increased challenges of assessing media use due to increased media multitasking, and the shortcomings of prior theoretical perspectives and models in predicting media multitasking behavior, Jeong and Fishbein (2007) introduced a model for predicting media multitasking behavior (see Figure 1, p. 79) that has since become widely used. This model is rooted in the Model of Exposure to Media, as presented by Webster et al. (2000), and encompasses two key categories of influence: *media factors* and *audience factors*. Media factors include structural factors such as access to technology and mediated content, as well as individual factors such as media ownership (i.e. media owned or frequently used). Audience factors refer to non-media characteristics such as socio-demographic factors (e.g. age, gender, socio-economic status) and psychological factors (e.g. sensation seeking tendencies) (Jeong and Fishbein 2007; Kononova and Chiang 2015). While the model is widely used, it has been criticized for its shortcomings in embracing the contemporary and diverse media landscape and a wider array of psychological and behavioral aspects (see e.g. Kononova and Chiang 2015). Kononova and Chiang (2015) later developed the model by adding dimensions in terms of both media and audience factors (see Figure 2, p. 79).

Based on a cross-market and cross-cultural study, the developed version of the model embraces an extended definition of the concept of media market, which includes a cross-cultural market dimension (Kononova and Chiang 2015). Furthermore, the concept of media ownership has been developed to include new media devices (e.g. smartphones and tablets) as well as new digital services (e.g. social media sites). This highlights the fact that a greater availability of media devices increases engagement in media multitasking behavior. (ibid.).

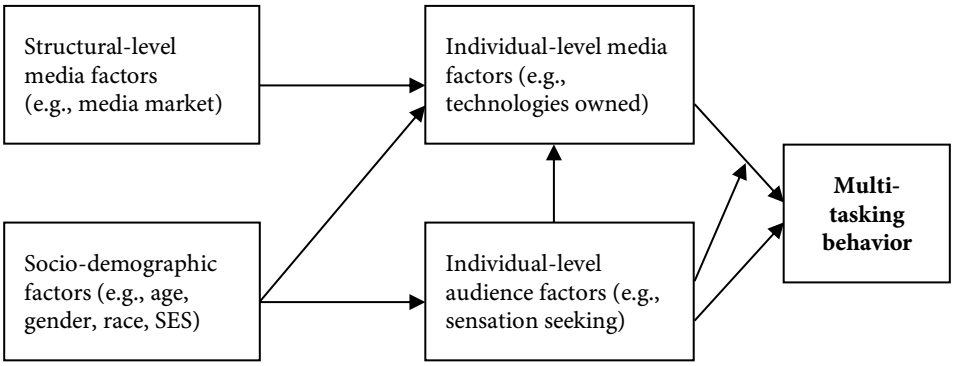


Figure 1. Model predicting multitasking behavior
(Jeong and Fishbein 2007, p. 370).

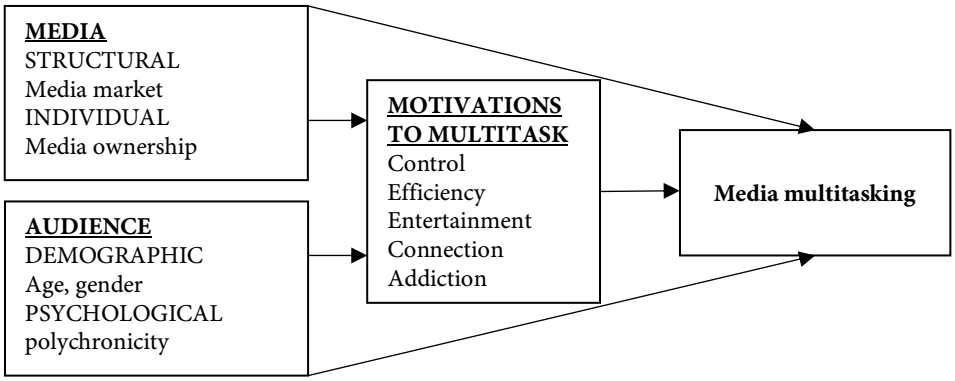


Figure 2. Developed conceptual model of media multitasking
(Kononova and Chiang 2015, p. 32).

The psychological concept of *polychronicity*, defined as "the tendency to do multiple things at the same time" (Kononova and Chiang 2015, p. 33), was added to the audience factors in the developed model. This illustrates how individuals, who are otherwise prone to multitask, are also more likely to use several media simultaneously (ibid.). Also, a list of additional motivations to multitask were added to the model. These are rooted in the UGT perspective, representing psychological processes preceding media multitasking activities (in accordance with e.g. Bardhi, Rohm, and Sultan 2010; Wang and Tchernev 2012). The motivations are:

1) *control*, i.e. being in charge of one's own media use and having the power to decide on what media to use in a media multitasking situation;
2) *efficiency*, i.e. cognitive gains such as effective information learning during media multitasking;
3) *entertainment*, i.e. hedonic gratification, enjoyment with multitasking;
4) *connection*, i.e. the need to keep in touch with others;

5) *addiction*, i.e. habitual or routine media multitasking that goes beyond the control of the user. (Kononova and Chiang 2015)

Kononova & Chiang's (2015) empirical work indicates that media ownership, polychronicity and four of the mentioned motivations (control, entertainment, connection and addiction) positively predict media multitasking behavior.

4.4.3. Eight dimensions of underlying motives

Building on prior research on media multitasking predictors, Robinson (2017) presents an extensive model of eight dimensions of underlying motives. These dimensions encompass the majority of earlier documented predictors of media multitasking behavior, highlighting especially the concept of polychronicity (in accordance with e.g. Kononova and Chiang 2015; Kirchberg, Roe, and Van Eerde 2015). Polychronicity has been studied according to two different dimensions. First, on a wider collectivist level, this has been considered a cultural phenomenon where multitasking characterizes a large group of people (e.g. Hall, Edward 1959; 1981). Second, polychronicity has been studied at an individual level where it is used to explore differences in individuals' multitasking habits (e.g. Lindquist and Kaufman-Scarborough 2007). Robinson (2017, p. 439) defines polychronicity as "the preference to multitask with media from the perspective of the individual multiple media user", thus applying the individual perspective. Robinson's (2017) model includes eight dimensions of polychronicity (or underlying motives):

Comfort with multitasking

Most media multitaskers report using various combinations of media in which they consider themselves proficient and confident. Media multitasking is perceived as habitual and natural behavior and is linked to a sense of comfort. This apparent ease serves as a predictor for media multitasking. (Robinson 2017) However, a common trait among diginatives is overconfidence in one's ability to divide attention between different stimuli (see e.g. Glenn 2010; Wellner 2011). Furthermore, the sense of comfort can become problematic if frequent media multitasking behavior becomes a habit or even a compulsion or addiction (Robinson 2017).

Multi-channel preference

Avid media multitaskers associate performing a single media activity with loss of interest and boredom; they prefer engaging in multiple streams of stimulation and juggling several media activities at once. However, this preference for switching between several media results in shifts in attention between multiple activities and disrupted focus related to each activity. (Robinson 2017) While engaging in multiple sources of stimulation are common in many different contexts, especially for diginatives, diverse learning environments have become a natural commonplace for media multitasking (e.g. Carrier et al. 2015). This leads to fragmented learning processes and frequently reoccurring distractions.

Effectiveness and efficiency

A preference for media multitasking is often closely linked to perceived personal productivity (Robinson 2017). Diginatives feel that media multitasking helps them get several things done quickly, which is experienced as adding value in terms of timesaving and efficiency to almost any experience (Stone 2009; Rosen 2010; Robinson 2017). While anticipated or perceived productivity may seem a natural predictor of media multitasking behavior, empirical results related to this particular factor have been inconclusive. For example, Stone (2009) claims that the desire to feel productive and efficient by doing several things simultaneously is considered to be one of the main motivators behind multitasking behavior.

Similarly, Carrier et al. (2015) notes that anticipated effectiveness can trigger media multitasking in response to external pressure to get many things done in a limited period of time, or as a way of creating more "free time" for other activities, for example, outside work. However, Kononova and Chiang (2015) found efficiency not to be a significant factor in predicting media multitasking behavior. The contradictory results may partly be explained by differences in the definition of the concept of effectiveness (or perceived effectiveness) in the different studies. Hwang, Kim & Jeong (2014) also found that perceived efficiency (and other predictors such as information, social, enjoyment and habit) may well be a predictor of general media multitasking behavior, though not particularly significant in relation to any specific device or content.

Convenience

Robinson (2017) places convenience as another important factor predicting media multitasking. For example, media multitaskers find it easy to navigate between media devices such as the TV, laptop and smartphone (ibid.). Developed mobile technology further encourages media multitasking as practical devices, large screens and advanced operating systems allow users to keep several windows or applications open and active simultaneously (e.g. Adler and Benbunan-Fich 2013; Carrier et al. 2015). Being able to use multiple media anytime and anywhere adds to the perception of media multitasking being particularly convenient and effortless (Robinson 2017). A mere decade ago, much more effort and patience were needed to multitask with media "on the go".

Emotional gratification

Another motivation for media multitasking is emotional gratification. Generally, media multitasking is often perceived as a means of entertainment and relaxation (e.g. Wang and Tchernev 2012; Voorveld and van der Goot 2013; Robinson 2017). For example, according to Robinson (2017), a typical media multitasking scenario involves having the television or the radio on as a background media while performing other activities. This is experienced as something particularly enjoyable, fun and gratifying as it can fulfil a need for background noise to feel less alone and provide emotional support, general wellbeing and help people relax. Furthermore, multiple

media use can provide a welcomed distraction in situations that are perceived as boring (ibid.), in situations where the primary task is mentally challenging, or in situations where one is feeling "stuck" (Carrier et al. 2015).

Information and knowledge

In addition to entertainment, media multitasking is also perceived as a means to stay up to date with news, sports, social media, etc., and not to avoid missing out. Young adults, especially, find media multitasking an efficient way to access a variety of information sources and thereby constantly stay informed. Media multitasking is also highlighted as a good way to enable a better understanding of something by offering different perspectives and better possibilities to see the "bigger picture". (Robinson 2017)

Social benefits

One major motivation to media multitask is that this allows people to stay in touch with friends and family at all times while also engaged in a series of other activities (Robinson 2017). This provides the media multitaskers with a feeling of connectedness and offers them opportunities to integrate online activities with offline social environments; not only are they always connected, but also always available. Some specific social environments or situations particularly encourage media multitasking. For example, many diginatives interact with their friends or perform other content-related activities while watching a game or a program on TV or while playing online games. (ibid.). This is a common form of media multitasking referred to as second screening (see e.g. Doughty, Rowland, and Lawson 2012; Gil de Zúñiga, Garcia-Perdomo, and McGregor 2015; Barnidge, Diehl, and Rojas 2019). However, the content on the second screen is not always related to the content of the TV or the game.

Assimilation

The final dimension in Robinson's (2017) model is assimilation, meaning that preference for media multitasking is linked to the fact that this enables people to manage the information jungle and digest the large volume of information and entertainment available in a wide array of different media channels. Simply speaking, media multitasking is perceived as a natural way of dealing with the quantity of information one is bombarded with on a daily basis. (ibid.).

4.4.4. Personality as a predictor of media multitasking

In addition to the above-mentioned predictors of media multitasking, several other predictors or motivations have been examined in the emergent body of empirical work within this area (e.g. Robinson 2017). For example, demographic factors such as age and gender have been explored as key features in some media multitasking studies, predicting young people and females to be more prone to media multitasking than

others (e.g. Wang and Tchernev 2012; Duff et al. 2014; Carrier et al. 2015). However, results have been inconclusive and as the generational gaps are steadily diminishing, these factors become more or less insignificant. Still, for example, Benbunan-Fich et al. (2011) claim that certain individual characteristics and personality traits increase tendencies towards polychronicity, thus, affecting how the media user chooses to perform and prioritize certain tasks. Some personality traits have been found to be more relevant in predicting media multitasking behavior than others. Three such personality traits are further discussed here: 1) impulsivity, 2) sensation-seeking tendencies, and 3) perceived multitasking ability (e.g. Jeong and Fishbein 2007; Benbunan-Fich, Adler, and Mavlanova 2011; Sanbonmatsu et al. 2013; Kononova and Chiang 2015).

Impulsivity

In accordance with many others, for example, Jeong and Fishbein (2007) highlight individual differences and their role in predicting media multitasking by stressing that individual audience factors are especially relevant. One individual personality trait that has been proven to be strongly associated with the propensity to media multitask is *impulsivity* (see e.g. Sanbonmatsu et al. 2013). Impulsivity can be defined as "a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions" (Sanbonmatsu et al. 2013, p. 2, inspired by Barratt and Patton 1983). Several studies support the notion that impulsive individuals are generally more reward-oriented (e.g. Acton 2003; Sanbonmatsu et al. 2013) and more likely to engage in risky behavior, and hence less sensitive to potential negative consequences (e.g. Stanford et al. 1996; Sanbonmatsu et al. 2013). Furthermore, impulsive individuals often showcase a reduced capacity to block out distractions. Media multitasking is often experienced as more rewarding and interesting than performing singular tasks; impulsive individuals are strongly attracted to such rewards, and therefore more likely to engage in media multitasking. Furthermore, impulsive individuals are likely to engage in media multitasking because they are less able to restrain secondary task engagement; simply speaking, they are unable to focus on a singular task. (Sanbonmatsu et al. 2013)

Sensation seeking

Another personality trait found to be an important predictor of media multitasking behavior is *sensation seeking* (e.g. Jeong and Fishbein 2007; Sanbonmatsu et al. 2013; Chang 2017). Sensation seeking can be defined as "one's need for varied, novel, and complex sensations and experiences […]" (Jeong and Fishbein 2007, p. 368). For example, Kononova and Chiang (2015) stress the central role of sensation-seeking tendencies in predicting media multitasking behavior. Often this personality trait is inclined to higher proneness for risk taking than among low sensation seekers (Sanbonmatsu et al. 2013). High sensation seekers have been found to have a stronger need for complex experiences. Therefore, they are more likely to engage in, for example, distracting activities while watching TV, and more likely to change channels often in search of arousing contents (Jeong and Fishbein 2007; Chang 2017). High

sensation seekers may be more likely to engage in media multitasking, regardless of the risk of worsened task performance, simply to heighten the enjoyableness of the experience (Sanbonmatsu et al. 2013).

Perceived multitasking ability

As mentioned, only a small group of people are actually equipped for processing several tasks or activities simultaneously without any interference (e.g. Foehr 2006; Watson and Strayer 2010). However, one's actual ability to multitask often differ from one's perceived ability to multitask. Sanbonmatsu et al. (2013) found a negative correlation between everyday media multitasking engagement and actual media multitasking ability. This indicates that the people who frequently multitask with media are not always those who are most capable in doing so; on the contrary, the most capable multitaskers are those who most often restrict and stay away from these types of behavioral patterns and activities. Frequent multitaskers are those who are least capable of multitasking, but most overconfident in their perceived multitasking abilities. (ibid.) In other words, one's perceived ability to multitask (though not technically a personality trait) serves as an important factor in predicting media multitasking tendencies (in accordance with Sanbonmatsu et al. 2013).

While overconfidence in one's multitasking ability may lead to impaired performances and dangerous situations, e.g. while driving, another novel stream of research has found that this kind of overconfidence actually could lead to improved performances. As technology increasingly invades traditional non-technology activities, the experience of when media is actually used becomes blurred; whether an activity is considered [media] multitasking thus becomes a matter of perception. For example, Srna, Schrift and Zauberman (2018) studied the positive effects that perceived multitasking and multitasking skills can have on task performance. They found that if an activity that is perceived as media multitasking, though in reality it is defined as a singular activity, the outcome can be affected in a positive way if the person performing the activity is confident in his or her multitasking skills (ibid.).

4.4.5. Predicting media multitasking: An overview

Despite the increased interest in media multitasking research during the past few decades, predictors of media multitasking have attracted the least attention among the three main areas of study (see e.g. Duff et al. 2014). According to Benbunan-Fich et al. (2011), part of the difficulty in conceptualizing everyday media multitasking predictors, and subsequently measuring and studying this behavior, lies in the division into two separate streams with little cross-fertilization between them apparent in earlier media multitasking literature. One stream embraces research on external interruptions, which address multitasking as the result of the decision to attend to external stimuli, such as mobile notifications (e.g. Bailey and Iqbal 2008). The other stream focuses on discretionary task interleaving or self-initiated interruptions, i.e. media multitasking as the result of an internal cognitive decision to switch tasks

without prompting by any external stimuli (e.g. Payne, Duggan, and Neth 2007; Dabbish, Mark, and González 2011; Adler and Benbunan-Fich 2013).

The first stream of research embraces media factors as defined by, for example, Jeong and Fishbein (2007), Voorveld et al. (2014) and Kononova and Chiang (2015). These are identified on a larger societal or market level, i.e. overall access to technology, network and mediated content on the market, and on an individual level, i.e. owned or frequently used media devices, content and services. The underlying assumption is that a greater availability of media devices and content, primarily on the individual level, increases the propensity to engage in media multitasking behavior (Jeong and Fishbein 2007; Kononova and Chiang 2015). Similarly, for example, Adler and Benbunan-Fich (2013), Carrier et al. (2015) and Robinson (2017) suggest that the availability and presence of convenient media, content and solutions (on the individual level) increases the probability of everyday media multitasking. Kononova (2013) and Voorveld et al. (2014) also found structural level market factors such as freedom of press and sociocultural trends to be predictors of media multitasking across different national cultures.

Increased availability and prevalence of media devices, content and services in everyday life most likely leads to subsequent increases in digital notifications and other technology-related external stimuli. Engaging in media multitasking as a response to such cues is referred to as technology-induced interruptions by, for example, Carrier et al. (2015). They predicted that this phenomenon will continue to grow in line with increasingly personalized media content and developed notifications systems. Today, not even five years later, mobile media, digital content, integrated recommendation and push notification systems as well as artificial intelligence (AI) solutions have already become a natural part of our everyday lives (e.g. Lau 2019), and so has technology-induced interruptions.

While these media factors, here referred to as *technology factors*, seem quite obvious and natural predictors of everyday media multitasking on the societal as well as individual level, this type of externally induced media multitasking behavior has gained limited interest in contemporary research on predictors. One reason could be the heavy focus on cognitive experiments and laboratory studies in prior research on media multitasking predictors where little or no attention is paid to the circumstances or availability of media in an everyday setting. Another reason could be that media factors are seen as a precondition for media multitasking and not really as a factor predicting or affecting proneness to media multitasking, and therefore, *audience factors* become more interesting. Table 5 (p. 86) summarizes some key technology factors (external stimuli) as well as audience factors (internal triggers and motivations) that have been identified as predictors for media multitasking in prior research on media multitasking predictors.

Table 5. Overview of media multitasking predictors

	Societal	**Individual**
Technology factors	* Access to technology, networks and mediated content on the market * Societal and sociocultural trends	* Media ownership * Availability and presence of media devices, content and services in everyday life * Mobile notifications
Audience factors	* Demographic and sociodemographic factors	* Need recognition, gratification sought, and gratification obtained Cognitive needs (information, knowledge) Affective needs (emotions, pleasure) Personal integrative (status, credibility) Social integrative (connection, availability) Tension release needs (entertainment, escape, diversion) * Personality traits Polychronicity Sensation-seeking tendencies Impulsivity * Anticipated and perceived benefits Control and comfort Efficiency Assimilation * Habitual and addictive behavior Anticipated and experienced reward Uncontrollable behavior

The second stream of research focuses on audience factors, especially on the individual level, and has dominated the entire research area of media multitasking predictors. Within this stream of research, demographic and sociodemographic factors as well as a vast number of personal and psychological factors have been addressed and studied. Demographic and sociodemographic factors have been the focal point in many media multitasking studies (e.g. Kononova 2013; Voorveld et al. 2014; Duff et al. 2014; Kononova and Chiang 2015; Segijn et al. 2017). However, overall, very little consistent empirical evidence has been found that indicates such factors to be significant in predicting everyday media multitasking tendencies.

The UGT approach has been one of the most influential perspectives within this second stream of research, highlighting the cognitive process of need recognition and actively seeking gratification for the recognized needs as a predictor of media multitasking. Media multitasking in general, and some specific media combinations in particular, have been found to gratify needs for e.g. entertainment, staying updated,

acquiring new information and knowledge, being connected and available, avoiding boredom, etc. (see e.g. Wang and Tchernev 2012; Voorveld and van der Goot 2013; Ahad and Anshari 2017; Robinson 2017). This approach has been criticized for its inflexible underlying assumptions of goal directed media use and deliberate consumption decisions and its origins in a completely different media landscape than what we experience today (e.g. West and Turner 2014). Still, influences from the UGT perspective can be found in most contemporary theories and models on media multitasking predictors. The approach has been developed, adjusted and combined with a multitude of other theories and perspectives in recent years (see e.g. Wang and Tchernev 2012; Zhang and Zhang 2012; Chang 2017).

Another impactful area of influence on contemporary research concerning media multitasking predictors is the cognitive perspective, which suggests that certain individual differences and personality traits indicate a greater proneness to multitask with media. Numerous personality traits have been studied and associated as predictive of media multitasking behavior, for example, creativity, imagination and need for simplicity (e.g. Duff et al. 2014). However, a few key personality traits have frequently and consistently been linked to a higher propensity to engage in [media] multitasking; these are polychronicity, sensation-seeking tendencies and impulsiveness (see e.g. Jeong and Fishbein 2007; Sanbonmatsu et al. 2013; Kononova and Chiang 2015; Kirchberg, Roe, and Van Eerde 2015; Robinson 2017). These are characterized by, for example, a sense of restlessness and precipitously feeling bored (especially when doing only one thing at a time), a weakened capacity to block out distractions and an increased likeliness to engage in risky behavior (e.g. Sanbonmatsu et al. 2013; Kirchberg, Roe, and Van Eerde 2015). While personality traits such as these certainly may increase the likeliness of engaging in everyday media multitasking, Kirchberg et al. (2015), acknowledge that personality traits, such as polychronicity, are assumed to be stable over time, whereas media multitasking opportunities and circumstances vary over time. Factors associated with personality traits are therefore not enough; other factors also need to be considered when predicting everyday media multitasking tendencies.

One perspective that has been found to significantly motivate media multitasking includes anticipated and perceived benefits (see e.g. Lim and Shim 2016). Again, while numerous potential benefits have been acknowledged, only a few key benefits are highlighted here: perceived control, comfort, efficiency and assimilation (in accordance with e.g. Hwang, Kim, and Jeong 2014; Carrier et al. 2015; Lim and Shim 2016). While these are treated as a separate category or perspective here, they are often interlinked and combined with the above-mentioned perspectives in prior literature in terms of recognized needs or as part of certain personality traits (see e.g. Sanbonmatsu et al. 2013; Robinson 2017). Furthermore, the focal point has been primarily placed on studying perceived benefits (i.e. experienced positive effects), whereas, for example, Hansen (2019a) stresses the importance of also considering anticipated benefits. The anticipation of efficiency may be a greater indication of engaging in media multitasking than actual experienced efficiency (ibid.).

The above-mentioned anticipated and perceived benefits are often associated with a sense of comfort, familiarity and confidence in one's multitasking ability, especially among diginatives and younger generations. This apparent ease can serve as an important predictor for everyday media multitasking (Robinson 2017). However, in general, diginatives have been found to be overconfident in their multitasking abilities (e.g. Glenn 2010; Wellner 2011), indicating that they frequently engage in such behavior even though it may lead to negative consequences. Junco and Cotten (2011) found that many students are not aware of the potentially harmful consequences of frequent media multitasking, which could also serve as a predictor for such behavior. However, they also found that even though students are aware of negative effects, they engage in media multitasking anyway (ibid.). One explanation could be that the anticipated and perceived benefits simply outweigh any negative consequences. Another explanation could lie in the habitual and addictive nature of everyday media [multitasking] behavior (e.g. Kononova and Chiang 2015).

The anticipated or experienced benefits of everyday media multitasking can be viewed as kind of a cognitive reward. Frequently engaging in behavior that triggers or implies such a reward is a natural way of conduct. For example, Kononova and Yuan (2017) found habit to be one of the strongest motivations for media multitasking. However, habitual and addictive behavioral patterns driven by a constant pursuit of cognitive rewards can easily become problematic and move beyond control of the media user (e.g. Kononova and Chiang 2015; Robinson 2017; Hansen 2019a). Even though habitual and/or addictive everyday media multitasking has gained scarce interest among contemporary researchers, this seems to be an important area to study further. This assumption is based on 1) the increased addictive tendencies among young media users (see e.g. Duke and Montag 2017b; Dhir et al. 2018; Cheever, Peviani, and Rosen 2018), and 2) the indication of uncontrolled and undeliberate everyday media multitasking behavior. This undeliberate dimension moves beyond the traditional perspectives of media multitasking predictors as discussed in this section, which essentially builds upon the notion of a deliberate underlying choice or decision to engage in media multitasking.

4.5. New perspectives on media multitasking

The models and theoretical perspectives presented in this chapter, related to the three main areas of study (media multitasking patterns, consequences and predictors), have greatly expanded our knowledge and understanding of particularly the cognitive aspect of media multitasking. These are useful in predicting and explaining media multitasking decisions made in a controlled setting or under controlled circumstances. However, their weakness also lies within this heavy focus on individual cognitive factors as predictors of concurrent task performance. Everyday media multitasking is more complex than that, involving a high degree of prioritization and flexibility, as well as numerous external stimuli and potential tasks that may affect the decision whether to multitask or not (e.g. Sanbonmatsu et al. 2013; Ralph et al. 2014;

Carrier et al. 2015). The traditional cognitive psychology approach is inadequate when aiming to understand media multitasking in the complex everyday setting. Hence, the area of media multitasking predictors is still an emerging field of study and prior conceptualization and theorizing efforts have been dispersed (Robinson 2017).

Prior studies on everyday media multitasking predictors have been divided into two main streams of research: one stream dealing with external stimuli and technology-induced media multitasking, and the other one focusing on intrinsic motivation and self-initiated media multitasking. Frequent task switching and multitasking activities, regardless of whether they are technology-induced or self-initiated, divide our attention and lead to distractions and fragmented behavioral patterns in our everyday lives (e.g. Dabbish, Mark, and González 2011; Adler and Benbunan-Fich 2013; Carrier et al. 2015; Katidioti et al. 2016). This suggests that the traditional division between external and internal triggers, impulses and motivations may be irrelevant in the everyday context. Irrespective of what triggers the disruptive impulse, everyday media multitasking is the result of (conscious or unconscious) time allocation decisions made by the individual to either give in to and act on the impulse or not: "[m]ultitasking can be viewed as the result of time allocation decisions that individuals make when they are faced with multiple tasks" (Benbunan-Fich, Adler, and Mavlanova 2011, p. 2).

This underlying decision process may be affected in different ways by different situations, circumstances, and present stimuli. For example, Zhang and Zhang (2012) found that situational factors and variations in the physical, social, and technological environment affect the decision to engage in media multitasking. Similarly, Sanbonmatsu et al. (2013) suggest that contextual factors such as physical location and presence of company are important stimuli in the decision process. While similar suggestions are made in several contemporary studies (e.g. Zhang, Jeong, and Fishbein 2010; Kirchberg, Roe, and Van Eerde 2015; Kononova and Yuan 2017; Ralph et al. 2019), situational factors are generally overlooked in prior cognitive research on media multitasking predictors. Still, it is quite obvious that any individual's inclination to engage in media multitasking can vary greatly from time to time due to minor changes in the environment. For example, while home alone the propensity to media multitask may be higher than if somebody else is at home or somebody is visiting. Or when driving in bad weather, the propensity to engage in simultaneous media use may be lower than when driving in good weather. How can we address these uncontrollable situational factors? New perspectives are needed for explaining or predicting media multitasking in the complex everyday context.

Benbunan-Fich et al. (2011) suggest that a more complete conceptualization of everyday media multitasking needs to look beyond the purely cognitive definition and the division into external or internal triggers. This would imply a shift in focus from isolating individual cognitive processes through controlled experimentation and survey methods, towards understanding the wider context in which media multitasking takes place (in accordance with e.g. Kuutti 1996). Such a shift in focus would allow for developing new measures to capture everyday multitasking activities,

which in turn facilitates studying predictors of such behavior (Benbunan-Fich, Adler, and Mavlanova 2011). However, this requires a theoretical perspective fundamentally different from the traditional ones within this field of study.

Benbunan-Fich et al. (2011) introduce Activity Theory (AT) as a possible approach for expanding the theoretical scope within media multitasking research. Rather than a predictive theory, AT represents a descriptive meta-theory or framework, where entire activity systems are considered and explored, beyond just one actor or user (e.g. Nardi 1996). This approach has its roots in the 1920s' Soviet Union and is inspired by the works of, for example, Soviet psychologists Lev Vygotsky (1896-1934) and Alexei Leont'ev (1903-1979). There are two main perspectives within AT: 1) the Scandinavian perspective (e.g. Kuutti 1996; Kaptelinin and Nardi 2006) and 2) the systemic-structural approach (e.g. Bedny, Seglin, and Meister 2000; Bedny and Harris 2005; Bedny, Gregory and Karwowski 2006). The main difference is that the Scandinavian approach emphasizes an activity as a unit of mediated subject-object interaction, whereas the systemic approach is focused more on conscious goals as drivers of an activity (e.g. Benbunan-Fich, Adler, and Mavlanova 2011). AT is widely used within areas such as Information Technology (IT), Information Systems (IS) and Human-Computer Interaction (HCI) to e.g. develop efficient technological ecosystems or services, adapted to the actual behaviors and needs of the users. AT provides a deeper understanding for the user and his/her activities involving technological tools, which is needed to develop user-friendly systems (ibid.).

While Activity Theory is not a common approach within the field of media multitasking, the literature review conducted as part of this study, resulted in the insight that the Scandinavian AT approach, especially, offers an interesting potential framework for combining individual and technological factors with the situational factors (contextual factors). The situational aspect is absent from most theoretical perspectives presented in this chapter. Furthermore, this AT approach shifts the focus from cognitive processing and cognitive limitations to the actual physical everyday media multitasking activity and the underlying time allocation decision and prioritizing process. Therefore, Activity Theory serves as a foundation for the new conceptual framework developed, presented and discussed in chapter 7.

5. MEDIA BEHAVIOR 2013–2019 – EMERGING TRENDS

This chapter provides an overview of the four key trends that emerged from the empirical data analysis process. First, key empirical findings related to each trend are presented in terms of *identified patterns* and *emerging trends* (i.e. changes over time recognized in the empirical data) and discussed in light of *key theoretical concepts* (brief conceptual overviews). Second, the relation between the key concepts and emerging trends is discussed, highlighting the relation between the core concept and the other concepts and trends.

5.1. Observation: Is addiction the new normal?

In October 2017, a series of focus group interviews on the topic of everyday media consumption among young adults was carried out at Åbo Akademi University (ÅAU). I was moderating two focus group interviews, and the participants were all third-year students at the ÅAU School of Business and Economics. At the beginning of the interview, all participants were asked to take out their phone and put it on the table in case they needed to check something during the course of the interview. They were also asked to mute their phone and leave it be if they didn't need it for checking anything particular. Two things happened in one of these interviews that really made me reflect upon the role that smartphones have come to play in young university students' everyday life.

First, one of the participants did not take out any phone. The other participants quickly noticed this and asked him why he didn't put his phone on the table. His answer, that he deliberately had left his phone at home as he had realized he didn't really need it in school, caused nothing short of shock and confusion among the other participants. What if someone tried to contact him? What if he needed to contact someone? What if he missed something important? The "what if"-questions were many. And to the disbelief of the others, he calmly noted that very few things were critical to the degree that they couldn't wait until he got home (about two hours later). The interview started, but the other participants had a hard time completely letting go of this observed "abnormality". On several occasions they referred to this guy as "you who do not have your phone with you" rather than using his name (which they all knew).

Second, many of the other participants (those who had put their phone on the table) had a really hard time focusing on the interview. Their contributions to the general discussions were short and they spoke only when a question was aimed directly towards them. Most of the time, their attention was on the phone, regardless of the instructions to leave the phone alone unless you needed to check something for the sake of the interview. They did not touch their phones (at least not at first) but glanced at them repeatedly several times every single minute to check if something had happened. They did not seem bothered by this behavior at all, but the guy who didn't have his phone quickly grew irritated. And so did I. This constant checking, even without touching the phone, severely distracted the participants from the main task at hand.

These observations made me wonder. Are these young adults really dependent on their smartphones to the degree that leaving it behind or letting it rest while engaging in other activities has become unthinkable and abnormal? Has smartphone addiction and FOMO become the new normal? What is normal smartphone behavior these days, and what is not? When did it become socially accepted to clearly ignore the main task at hand in this kind of situation and focus on the smartphone instead?

5.2. Data structure overview

As shown by prior studies, media multitasking leads to an array of negative short-term, as well as long-term, consequences. According to, for example, Kirschner and Karpinski (2010) and Srna et al. (2018), media multitasking in the sense of concurrent processing of two or more tasks more advanced than walking and talking is not even possible; at least not without some degree of disruption. Still, the daily loggings of media activities in the empirical media diary study certainly illustrate excessive and frequent media multitasking activities among the vast majority of the participating diginative informants. While initial attempts were made to categorize and code the daily media loggings, this part of the data analysis was later excluded from this study and the dissertation. Still, similar patterns could also be recognized in the open coding of the reflections in the diaries. These patterns resonate with numerous prior studies within the field that suggest that diginatives are in fact avid media multitaskers. Similar to the observation described above, it seems that constant multitasking and compulsive checking behavior has become the new normal among these young adults.

Throughout the analysis process, which spanned over several years, many interesting patterns and issues emerged. According to Gioia et al. (2013), developing a data structure overview is a pivotal step in the research process as it allows for a visual illustration of the empirical data and provides "a graphic representation of how we progressed from raw data to terms and themes in conducting the analyses" (p. 20). The data overview structure presented in Figure 3 (see p. 93) is rooted in the framework presented by Corley and Gioia (2004) and Gioia et al. (2013). However, the model has been adapted to better fit the longitudinal and iterative nature of this media diary study.

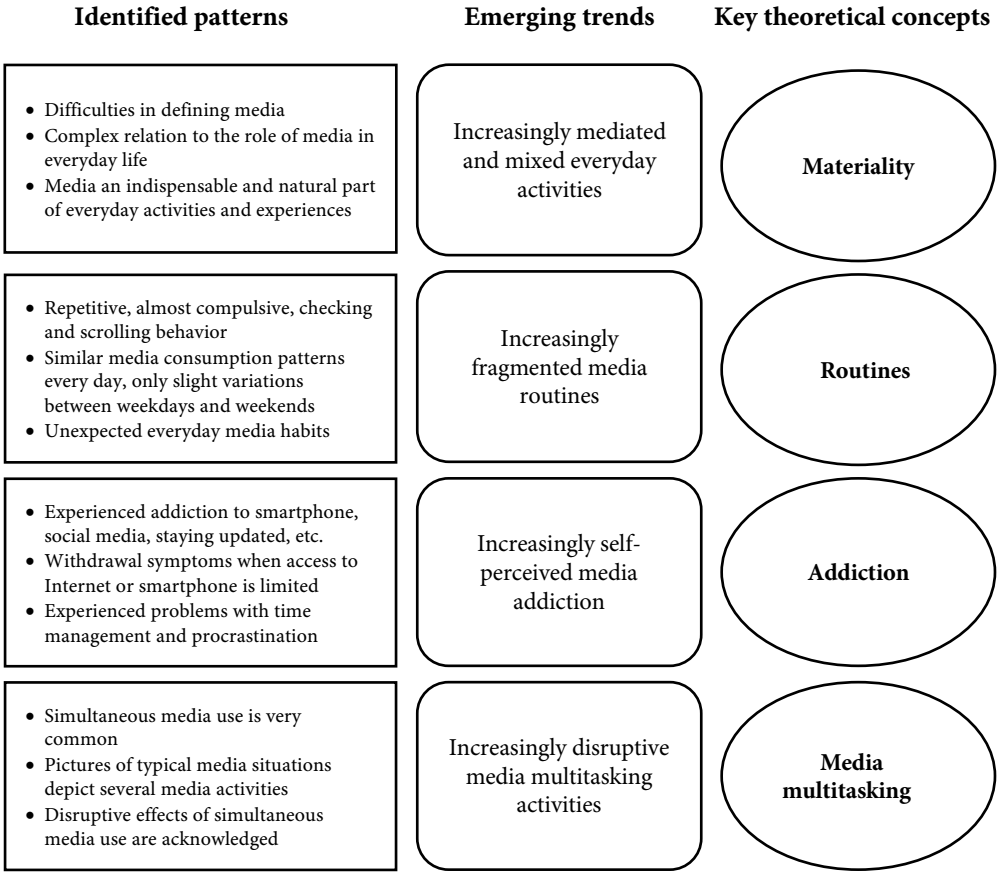


Figure 3. Initial data structure overview
(adapted from the data structure model presented in Corley and Gioia 2004; Gioia et al. 2013).

The following central alterations have been made to the original model:

- The term *1st-order concepts* is replaced by ***identified patterns***. This refers to recognized general patterns in how media behavior is perceived and expressed by the informants in their reflections.
- The category of ***emerging trends*** is added into the picture to illustrate central changes in the identified patterns over the course of the longitudinal time frame of the study. The recognized emerging trends are

not expressed in quantitative terms[29], nor in terms of direct comparisons between the different rounds of collected diaries due to the iterative nature of the study. This category is not part of the original model as presented by Gioia et al. (2013).

- The term *2nd-order themes* is replaced by the term ***key theoretical concepts***. These are the key concepts that help us explore and understand the core of the identified patterns and the emerging trends, also serving as a central part of the conceptual framework developed and discussed in chapter 7.

This initial data structure overview embraces four key theoretical concepts and illustrates the emergence of these through identified patterns and emerging trends. According to the Grounded Theory approach, sooner or later in the coding process, a *core concept* (also core variable or core category) will emerge. The core concept holds a specifically strong explanatory power, and most other identified concepts are somehow connected to it (Glaser and Strauss 1967; Glaser 1978; Hämäläinen 2014). If more than one core concept emerges, the researcher decides which one to focus on, leaving the exploration of the other concepts to future follow-up studies (Glaser 1978; Hämäläinen 2014). In this study, the concept of *media multitasking* was selected as the core concept, supported by the concurrent increase of research within the field of media multitasking.

5.3. Materiality

Every time a new materiality appears, it changes social, industrial and cultural relationships (Dagognet 1985).

One of the prominent trends recognized in the empirical data is the changing relation to the definition and role of technology and media among the informants. This trend highlights the evolving role of mobile media in the informants' everyday lives and indicates increasingly mediated and *mixed everyday experiences* and activities.

5.3.1. (Re)defining media

As already acknowledged, defining the concept of media is no easy task, but as part of the media diary, the informants were asked to define what they perceive as media.

29 Only a few examples of how the sheer number of reflections have grown or altered are presented here. More elaborate quantitative analyses of the empirical media diary data will be the focal point of future follow-up studies.

Based on that definition, they were to decide what media activities to include in their personal diary. Throughout the years of the study, it has proven equally challenging for the informants to define what media is and what it is not, and many have included thoughts on this in their reflections:

> For me it's hard to describe what media actually is. Do you consume media when you, for example, watch a movie on TV? Or when you listen to music on an offline-playlist? This made it difficult to know what to include in the diary. Also, I use media (mostly social media) so unbelievably often, but only for short moments, which makes it even harder. (Adele, 24, 2017)

> The word media covers such a wide spectrum. Media can be everything from radio, TV, newspapers and communication media like blogs, Facebook, Twitter and other social media. The principal aim for media is to share information and entertainment. However, modern media has given a voice to everybody, media is no longer one-way communication, but anybody can write a blog post or comment on a post. (Barbara, 21, 2018)

In these definitions, a distinction is often made between what is generally perceived as media, and what media the informants actually use themselves. While traditional media, for example, print media (defined primarily as newspapers, and sometimes as magazines) is often mentioned in the diaries, the overwhelming majority of media used by the informants is digital and mobile. Most often the distinction between digital and non-digital media is described in terms of *traditional*, *old* or *old-fashioned* versus *digital*, *modern* or *new*. Some also highlight this distinction by describing *new media* as media that young people use, and *old media* as media for old people, highlighting a presumed generational gap in media consumption:

> Times have changed and older generations are no longer as used to media consumption as my generation. I use new media. Still, I guess most households still have at least a radio if nothing else. (Daniela, 22, 2017)

> Since all information that was available only in old media before is available in new media now, there's no need for me to pay for the older peoples' distribution channels. (Ebba, 20, 2019)

In the years when the diary task was an integrated part of course projects which were conducted in collaboration with different media organizations (e.g. KSF Media and Svenska Yle), reflections on traditional media were more prominent. Still, media was most often used in digital format. In 2018 and 2019, the diaries scarcely include remarks on anything else than digital media. The notion of traditional media seems almost forgotten, and media is defined merely as channels or content related to some sort of electronic device or screen:

> As media, I define social media (for example, Instagram, Facebook and Snapchat), applications that can be used for keeping in touch with friends, newspapers, music (radio, Spotify, mp3) and movies and series. In other words, everything that can be found on the mobile, computer or the TV. (Filippa, 21, 2018)

> Digitalization has enabled easier access to media, all media is now in your mobile. (Minna, 19, 2018)

> I believe media is mostly digital. This could be because this is the only way I consume media. (Gabriella, 21, 2019)

Social media has remained a conundrum throughout the entire study, affecting the definitions, reflections and causing confusion in many different ways. While some describe social media as the most natural and obvious form of modern media and as the mass-media of our time, others have chosen not to include social media in their diaries at all since it is not perceived as "real" media for different reasons:

> Media to me is channels that reach many non-specified people. This means that, for example, Spotify, books, social media, newspapers and even web games are media, while Whatsapp and Skype are not, since you know specifically who you reach there. (Gabriel, 18, 2016)

> I don't see Whatsapp as media even though I use it frequently throughout the day for communicating with my friends. My diary would look much different if this was included. (Ida, 19, 2016)

> For me, media are all sorts of channels offering news, entertainment or updates from interesting people. Netflix is not media. However, YouTube I define as media since it's real people that produce clips, and you can contact other users. (Hannes, 19, 2017)

> I have chosen not to include HBO, Spotify and Netflix, since I feel that a certain degree of communication of some sort is needed to classify something as social media. Movies on TV, on the other hand, I count as media as I watch commercial TV. The results in this diary would be drastically different if I also considered Spotify and Netflix since I use these almost constantly. I always listen to Spotify while doing homework, cleaning and while exercising. Netflix, I watch at least every other day. (Janina, 21, 2018)

In these reflections, social media use is described as fragmented, in terms of quick checks that are frequently repeated throughout the day. Social media is also often used simultaneously with other media or while engaging in various non-media activities.

Some informants have chosen not to include this type of media use in their diaries simply because it would be too much work:

> The use of iPhones games, Facebook and other media on the phone is made so easy, it was really difficult remembering how much I actually used the phone. Therefore, some media consumption might not be recorded in this diary. (Ian, 21, 2013)

> […] the same thing goes for Facebook. I have not included short Facebook-checks in my diary since I think that would be too much work to include. (Eddie, 20, 2014)

> I check Whatsapp basically every five minutes to see if I have gotten any new messages, but I don't count this as media use. I also used Snapchat a few times while I was drunk during the weekend. I don't think that is really media use either. (Felix, 20, 2015)

> I can, for example, take a break from studying to read Jodel for 2 minutes every now and then. I chose not to consider this as media as it would have been too much work to fill in everything like that in the diary. (Anna, 24, 2017)

As seen, the varying definitions of media affect what is included in the diaries and what is left out, which in turn affects the scope of the entire study. However, due to the large number of diaries and reflections included, the variations remain quite irrelevant in the end. In general, all the identified patterns and emerging trends presented in this chapter have been clearly recognizable among a vast majority of the diaries, regardless of differences in the media definitions.

The way media is described and defined mirrors a complex relation to media and its role in the informants' everyday life. Several informants highlight the function and role of media in their reflections, rather than the actual devices or media content. While media is primarily experienced as something *positive* and *useful* which facilitates everyday activities, such as keeping in touch with family and friends and staying up to date with news and events, media is simultaneously described in negative terms as *useless*, *distracting* or even *detrimental*:

> If media is defined as distribution channels for information, you can divide this into "healthy media" and "unhealthy media". Mostly, media is healthy, but used in the wrong way it easily becomes problematic. Modern media, which is increasingly digital, is not always good if you use it frequently. You become antisocial and addicted to the different apps on your phone, and the screen is not good for your eyes. (Dan, 20, 2017)

> I see two sides of media use, one useful and one pointless. To the useful part belongs things that make you feel better in the long run, not only right now. For example, you get to know new people in social media, you create networks that can help you

> in the future in one way or another, you learn new things […]. Pointless media use are things that you won't even remember the next day or that negatively affect your mental well-being. […] It's hard to separate these from each other as all media has elements of both sides. (Conny, 21, 2019)

The reflections concerning the role of media in everyday life have become more expressive in terms of emotions in later years. While this partly could be a consequence of the altered scope of the different course projects and the iterated diary instructions, it also mirrors the concurrent evolvement of digitalization in society at large and the developed discourse pertaining to digitalization in popular media:

> Media is everywhere. Some days I don't know where media starts and where it ends. […] I believe the aim of media is to give information, entertain, develop and make our society fairer and more open. Before the internet and social media, we had considerably less information about the earth and the world. Now, all knowledge is only a click away. I think this is incredibly scary and fascinating at the same time. (Nora, 24, 2017)

> For me, at worst, media is a distraction, at best a useful tool in my studies and a ray of sunshine in my everyday life. Which one it is varies from day to day. (Hanna, 21, 2019)

While the definitions have changed and the relation to media has become more complicated, media has manifested itself at the core of the informants' everyday lives. The study shows that mobile devices and digital services have become an indispensable part of almost everything that the informants do:

> Media affects every part of our everyday life. […] Media as a concept and media content have become such an ordinary thing that we can't avoid it. Media is always present, whether we are aware of it or not. (Maria, 22, 2017)

The smartphone, in particular, has manifested its place as a natural part of the informants' everyday lives. The smartphone is most typically the first thing the informants see and check in the morning. It is there during breakfast, while going to university, during lectures, while having lunch, on the way home, while exercising at the gym, while working on school assignments, and while watching movies or series. The fact that media is present at all times, and in all kinds of situations, makes it even harder to define where media begins and where it ends. It also affects the behavior and the experiences of the informants in different contexts.

5.3.2. Increasingly mediated experiences

As shown, the nature of the media definitions in the diaries has evolved over time from including more traditional media (e.g. printed newspapers, radio and broadcast television) to encompassing primarily mobile and digital media (e.g. online news feeds, podcasts and different streaming services). The indication is quite clear in 2018 and 2019 – if it is not digital and not available via any screen, it is nothing that the informants regularly use or engage in. In later years, informants also express a clear unwillingness to pay for traditional media (including online newspaper subscriptions) as they feel everything they need in terms of news, information or entertainment can be found elsewhere.

The way the informants relate to media and its role in their everyday life has also changed. Media, primarily in terms of mobile devices such as smartphones and laptops, has become an increasingly important and natural part of the informants' activities throughout the day. At the beginning of the study in 2013, some informants were still pondering whether or not a smartphone is actually needed:

> … the "smartphone bug" has somewhat decreased for me. I'm pretty sure I don't need one. (David, 20, 2013)

> Not owning a smartphone or a tablet is a deliberate decision, I don't feel I need such devices. (Susanna, 21, 2013)

The situation in 2018–2019 is dramatically different, and not owning a smartphone seems almost unthinkable. Also, the device itself is no longer referred to as a smartphone, rather just as a mobile or a phone (taking for granted that all mobile phones are in fact smartphones):

> I constantly have my phone in my hand and check Facebook or LinkedIn. There is absolutely nothing useful to see in either of these, but still I stare at them all the time. All my micro time evolves around having my phone in my hand and staring at social media […] I wake up and check my phone. Then I make breakfast and check my phone. Then I go to lectures and check my phone […] The only time I don't check my phone or social media is at the gym where I leave it in the locker. […] I guess I should try to do that more often. (Jacob, 25, 2019)

> What I noticed this week is that I almost constantly check my phone. I have to put it in a box or in another room in order to not check it regularly. […] I also noticed that when I had put it away, I felt some kind of withdrawal symptoms. I strongly suspect I have become more or less addicted to my phone. (Sven, 24, 2019)

During the time of the study, digital services and mobile devices, primarily smartphones, have invaded the lives and activities of the informants. The years 2017–

2019 were marked by the fact that media is everywhere; it has become difficult to define where media actually begins and where it ends:

> It's difficult to define what media is. Media is so much, even too much in today's world. (Lisa, 20, 2019)

> I don't think that we could live without media today. But I guess it's reasonable since we live in a world that has never developed at such a pace before. (Valter, 23, 2019)

In line with mobile devices and media content becoming an indispensable part of basically everything that the informants do, the lines between mediated and real experiences (also lived experiences, see e.g. Thompson 1995) are becoming increasingly blurred. Where does media start and where does it end? When are we using media and when are we not? How are we and our everyday lives really affected by media? The identified confusion concerning the definition of the very concept and the role of media among the informants is mirrored in these questions. Media is no longer what it used to be, and the way we relate to it and make sense of it is changing. Today, modern media enable novel experiences that are no longer linked to the sharing of a common location, time frame or rationale (see e.g. Saker and Frith 2019). At the center of this kind of enhanced experience is the medium, the technology that enables it all. Inspired by this notion, the identified patterns and emerging trend of a changing relationship with media and increasingly mediated experiences can be further explored and understood by introducing the theoretical concept of *materiality*.

5.3.3. Materiality and mixed experiences

Materiality within the social sciences, and in disciplines such as communication and technology studies, primarily refers to the role and impact of material or physical artefacts in various activities or interactions (see e.g. Lievrouw 2014). According to Smart, Heersmink and Clowes (2017) and Clowes (2019), we are experiencing a new artefactual culture where we constantly wear or carry with us mobile devices and applications that affect the way we think, act and socialize. The emergence of this artefactual culture is clearly mirrored in the media diaries, which suggests that the time period of the empirical study (2013–2019) has seen fundamental changes in diginatives' media behavior as a consequence of the concurrent rapid technological development and digitalization. The role of media is changing in our everyday lives and the concept of materiality is evolving in this digital age (e.g. Browaeys 2019). However, the concept of materiality in relation to media use and media behavior has been the subject of inquiry for several decades.

Central work within social scientific studies on materiality dates back to the 1950s and 1960s and, for example, Harold Innis (1951) and Marshall McLuhan (1964) who developed the foundations for the Toronto School perspective on materiality or the

Medium Theory (e.g. Lievrouw 2014). For example, McLuhan (1964; see also McLuhan and Fiore 1967) stated that "the medium is the message", emphasizing the role of media and its capability to tap into and transform human senses and interplay (Fuchsberger, Murer, and Tscheligi 2013). A similar perspective, highlighting the active role of physical artifacts in human activities, interactions and networks, is the sociological Actor Network Theory (ANT) (see e.g. Latour 2005). ANT describes the interplay between human and non-human actors, such as physical artefacts, technology or basically anything else (e.g. Fuchsberger, Murer, and Tscheligi 2013). Lievrouw (2014, pp. 29-30) acknowledges that "[…] the idea that material artifacts and objects can be agents within networks of relations among humans and knowledge, is perhaps the most controversial aspect of ANT, and most firmly places the materiality of things in the center of the theory." The concept of materiality can be defined as an umbrella term for these types of theoretical discourses, highlighting the role and impact of physical materials and artefacts on humans, actions, interactions and relations in different disciplines (Fuchsberger, Murer, and Tscheligi 2013).

According to, for example, Natale (2016) and Manke and Schwarzenegger (2019), the emergence of new media cultures affects how people make sense of media in terms of: 1) rhetoric, 2) everyday experiences, and 3) emotions. This study illustrates an emerging trend of altered rhetoric related to the very concept of media. The reflective narratives in the media diaries also embrace expressions of strong emotions linked to everyday media (over)use. However, most clearly, the new artefactual culture and the concept of materiality is manifested in a growing body of recollections on increasingly mediated everyday activities and experiences.

Thompson (1995), makes a distinction between *lived* experiences, i.e. experiences of ordinary events that occur continuously in our everyday lives, and *mediated* experiences, i.e. experiences that can take place in any place and time, embracing more freedom of choice in what to attend to/notice and what to "shut out". The study shows that mediated experiences have become increasingly routinized and that mobile media has developed into an essential and natural part of what traditionally could be considered lived experiences (as defined by e.g. Thompson 1995). The distinction between lived and mediated experiences thus becomes distorted and somewhat irrelevant; the concept of *mixed experiences* is introduced to describe experiences where the lived and the mediated overlap and intertwine.

Mixed experiences embrace a social dimension which permeates the lived as well as the mediated dimension. Modern technology and numerous social media platforms enable unprecedented opportunities to interact and socialize with people online. However, increasingly mixed experiences and more virtual social interactions have led to decreased skills related to empathy, emotional intelligence and emotion recognition (e.g. Waytz and Gray 2018). The social human being still needs face-to-face interactions and social contact with other people and to maintain such essential social skills (e.g. Keles, McCrae, and Grealish 2019). These skills are needed in everyday social life in general but will also become more crucial in managing the increasingly blurred lines between technology and face-to-face interactions in mixed

experiences (ibid.). This social dimension is also prominent in the empirical study as, especially in later years, many informants reflect upon the role of media in social situations in their diaries. Sometimes media helps to enhance or facilitate the social experience, whereas other times it is perceived as a distracting element. However, regardless of its role or perceived effect, it is clear that media today, in one way or another, is always present in almost any kind of social situation.

Along with the increased presence of new media, eventually, subsequent changing behavioral, societal and sociocultural patterns become normalized and considered a natural element of one's everyday life (Deuze 2012; Menke and Schwarzenegger 2019). The reflections in the media diaries illustrate a growing acceptance of the new artefactual culture and increasingly mixed experiences. Concurrently, many informants express an outspoken desire to be more present in social situations. We may not be entirely there yet, but it seems we are facing a completely new media ideology in the near future (Menke and Schwarzenegger 2019), where new strategies and tools are needed to cope with the constant stream of mixed experiences, especially, as these become routinized and settled features of our everyday lives.

5.4. Routines

> *The truth is that while any of us could spend our leisure time perusing an endless variety of material online, we tend to go back to the same places repeatedly and instinctively. (Markham 2017, p. 10)*

A few decades ago, people organized their everyday lives around certain reoccurring mediated experiences, such as reading the morning paper or watching the evening news on TV (Thompson 1995). The new mobile culture is believed to have disrupted such established everyday media consumption patterns; the issue of routines in diginatives' media use, especially, has been questioned (e.g. Ghersetti and Westlund 2018). However, this next key emerging trend identifies consistently repetitive patterns of media behavior among the informants that certainly can be classified as habits or routines. Nevertheless, the patterns are becoming more and more fragmented and most often embrace several different media and media-related activities during the course of only a short period of time.

5.4.1. Constant checking and scrolling

The empirical study shows that a large portion of most of the informants' days involve repetitive activities, such as "quick checking of" or "scrolling through", especially, different social media sites and news forums. This checking behavior starts immediately when they wake up in the morning, continues frequently throughout the day, and is often the last thing they do before falling asleep at night. The same pattern is repeated every day, and most often the visited platforms, sites and forums are the same ones every time:

> I would say my media use is very repetitive, I always use the same media at the same time every day. This is probably because I have used internet for such a long time that I have formed habits that I very seldom break. (Jon, 22, 2017)

> As for my media consumption, it looks the same day in and day out. I end up with a lot of screen time. There is not one single day that I do not check my Youtube feed or news sites regularly. (Kaj, 22, 2018)

> I found a pattern [in my diary] that I repeat every day. I always start and finish my day by sending snapchats to my friends and my boyfriend, and by reading news on the same sites. (Karin, 19, 2019)

Most checking routines are connected to certain situations or places. Morning routines at home involving media are very common. Evening routines at home are also common, and certain media related routines are also performed, for example, in class, while having lunch, while waiting for something or someone, while traveling by car or bus, etc.:

> I always engage in similar routines at home in the morning. It doesn't matter when I wake up, I always check my phone for 1–2 hours before I get up. I do the same before falling asleep at night too. Also, I always eat my evening snack by my computer. (Lars, 22, 2015)

> The first thing I do in the morning and the last thing I do at night is scroll through my regular apps and sites on my mobile. I also realized a pattern when I'm in class. As soon as the lecture gets even slightly boring, I take out my phone and start checking social media. (Laura, 20, 2017)

> Much of my media consumption is about routines. Every morning I do the same thing, I check my social media and read the news. Usually, I also watch Netflix while doing this since I live alone and dislike silence. […] I also have similar routines in the evening, for example, before going to bed I check my social media. Routines during the days vary depending on what I do during the day. But now that I think about it, I often repeat the same things at the same places, for example, I always read Kauppalehti in my couch, I always read HBL at my kitchen table, I always listen to the radio in my car […]. (Madeleine, 19, 2019)

> There is absolutely a certain pattern in my media use. For example, I always use media right when I wake up and before I go to sleep. All my micro time is spent scrolling through social media. Also, bus trips, queuing and waiting in general becomes less boring when you can use media and talk to your friends, for example, via Snapchat at the same time. (Nadja, 19, 2019)

Even though the informants experience and describe their media consumption as habitual and repetitive, it is certainly very fragmented, often embracing many rapid shifts between different media contents, platforms, devices and activities. They check and visit a large number of apps and sites regularly, but most often for a very short period of time and while doing something else simultaneously (eating, attending a lecture, exercising, walking, driving, etc.). Reasons given for this fragmented behavior is often a wish to get many things done in a short period of time or getting news or updates from as many sources as possible:

> … this means I visit about 50 different sites every day (many of them several times) but I only spend less than one minute on average on each site. (Magnus, 22, 2017)

> It was really difficult to log all my media consumption in this diary as I realized my media use is often very fragmented. Take, for example, Snapchat. You check a snap and answer it, and it takes about 40 seconds. Then you do something else for two minutes. Then you go back to Snapchat for another 55 seconds… (Olga, 19, 2019)

The media diary task served as a real eye-opener for many informants who were not aware of how consistent their everyday media consumption really is. Many informants expressed genuine surprise related to their reflections and insights on their own media use and everyday routines:

> I was surprised to see how my media consumption entails the same things repeated every single day at almost exactly the same time. (Patrik, 20, 2017)

> … I was almost shocked when I saw how much media I really use. I mean I constantly use media. And when you do an exercise like this and see how much media you regularly use in different everyday situations every day… The same pattern every day. It's very surprising to see it written down in front of you. (Nico, 22, 2018)

> The biggest surprise for me was to see how one-sided and limited my media use really is. I always use the same media, mostly my phone, laptop and social media. I guess it would be a good idea to widen my perspectives and read a newspaper or listen to the radio every now and then. But it's easier said than done. Honestly, I don't think my media consumption routines will change much in the future. (Ole, 21, 2019)

Many informants also express surprise and amazement related to the quite limited variations in their media use between weekdays and weekends. Similar patterns are repeated almost every day, no matter if it is Monday, Thursday or Sunday. Especially in the mornings, the routines are very similar every day:

> I thought I watched more TV on the weekends, but while doing this diary I realized that weekends are very similar to weekdays and that I watch a lot of TV every day. (Pamela, 20, 2013)

> From my diary, I can see that I have my routines and that my media use is the same every weekday. I also realize the weekends are almost the same too. I guess my media use has become such a natural part of my everyday life that it looks almost exactly the same every day, unless something really special happens. (Rafael, 24, 2017)

> My diary shows exact routines for my media use, and that's how I like it. I have some routines that I follow every day. It feels safe somehow to know that especially my mornings all look the same. (Sam, 20, 2019)

Evening routines are more often subject to disruption due to different hobbies, activities or variations in the amount of schoolwork to be completed. However, in general, evening routines are also quite similar every day, but the time for when they are performed may vary due to various events and activities. What really does affect and alter the everyday routines, though, are engagement in more seldom recurring situations and events, such as visiting parents, friends or partners, traveling somewhere, attending parties or other special occasions:

> When I visited my parents on the weekend, I realized I didn't have the same discipline there as I have at home. At home, I check social media maybe once an hour. While visiting my parents, I did it much more often. (Rebecka, 20, 2017)

> This weekend, my media consumption was not what it usually is. That's because I was with my girlfriend all weekend. Other factors that affect my regular media use are parties and different events. (Ted, 23, 2018)

> As you can see from my diary, I was in Tahko skiing with my friends this week. […] This trip affected my media consumption. In a very positive way, I think. While on the trip, I used my phone less than what I usually do when I'm at home. (Niklas, 19, 2019)

Social situations, in particular, tend to have an impact on everyday media routines. Most often social situations are perceived to have a *positive impact* on the informants' media use i.e. they use less media in other people's company than they normally do. For example, many informants are first year university students and have recently moved away from home. This has transformed their media routines, especially, in the cases where they are now living on their own. They describe significant differences in media use when home alone, compared to when they engage in social situations:

> I know that when I spend time with my family, my friends and at the gym (where I only listen to music), I avoid my phone since I prefer being social, meeting and talking to people face to face. (Ylva, 20, 2017)

> Some days my media use is very different from normal days, it depends on how much leisure time I have and whether I'm alone or with friends. […] When I spend time with my friends, I use media less than otherwise. For example, this weekend I spent the night at my friend's place. While I did use media (we watched a TV show and I checked social media), I used my phone considerably less than I usually do. (Sabina, 20, 2018)

> I notice that when I'm alone I use media much more and tend to stare at my phone all the time. […] However, when I'm with my family and my friends it seems much easier to leave the phone and "close off" the digital world. To move away from home was a big deal for me, and it has definitely affected my media routines. I think I need to reconsider these new routines. (Vanessa, 20, 2016)

However, while social situations often seem to decrease the informants' media use, some informants describe certain social situations and/or certain people as triggers for more extensive media use than normal. For example, situations that are perceived as boring or uncomfortable have this effect. Keeping in touch with partners, friends and family that live far away have a similar effect. Also, situations where other people use media often triggers the impulse to take out one's own phone or laptop:

> I'm not a social person, and I'm well aware of it. This is why I very often take out my phone in social situations where I feel uncomfortable. […] It's easier to talk to friends and people in chatrooms than face to face. (Diana, 20, 2017)

> My boyfriend moved to another city to study and now I'm in a long-distance relationship. We keep in touch mostly via digital channels and that's why my routines now involve much more media than before. It's necessary though because of the recent living arrangements. (Åsa, 24, 2016)

> I prefer spending time with other people whenever it's possible, or doing smarter things than just checking Instagram, etc. But it's really hard to change one's own habits, especially when everybody else always has their phone in their hand. (Barbro, 20, 2019)

While certain situations and people affect the informants' everyday media routines, in the long run some "bad habits" seem particularly hard to break. This becomes problematic when, for example, informants describe their frequent social media checking behavior as compulsive and something that is out of their hands/control:

> Ok, so this week I have spent a total of 45 hours on my mobile. This means I have spent almost 48 hours only on frequently, almost compulsively, checking apps like Snapchat, Instagram, WhatsApp and Facebook. […] The biggest let-down is the insight that all this time could have been spent on something more useful than checking or scrolling through social media. (Helen, 19, 2019)

> It became impossible to write down every time I used Instagram or Twitter since I often do it unconsciously. It's impossible to keep track of how much time is spent in media. […] All these small check-ups all the time is what's most worrisome in my media consumption. I feel a need to check and stay updated, even though, deep down, I realize that nothing much has happened since I last checked. (Amanda, 20, 2015)

Again, the quote above highlights the issue of how fragmented media routines have affected the scope of the entire study. Some media consumption patterns have been left out completely from the diaries and have been disregarded in the reflections due to their fragmented and highly repetitive nature. According to the informants, it becomes difficult, if not even *impossible*, to track and record every little media-related check or activity.[30] However, as the aim of this study is not to track the informant's actual media use, any possible effects on the outcome becomes quite marginal. The point here is not to illustrate actual media routines or behavioral patterns; rather, it is to explore how these are described and reflected upon and whether changes over the years in the descriptions and reflections can be detected.

5.4.2. Increasingly fragmented media routines

In contrast to the general belief that diginatives and youngsters do not have any media routines, or at least not similar routines as older generation (see e.g. Pacheco et al. 2017), the informants in this study describe incredibly consistent media consumption patterns. Similar and regular routines have been described and reflected upon in the diaries consistently throughout the years. There are no tendencies detected that would imply that there would be more, or less, routine-like media behavior developed over the time period of the study. However, in later years, as the mobile phone (smartphone) has become an increasingly prominent part of almost any everyday

30 Combining the media diary with some sort of tracking application or function has been discussed several times throughout the research process to enable a more accurate tracking of the informants' actual mobile or laptop use. However, this was never realized as it was perceived as a deviation from the main aim of the study.

activity and routine, more opportunities for "checking" and "scrolling" emerge. Consequently, the informants' media routines have become more and more fragmented, embracing an increasing number of media sources, contents and activities that are often engaged in simultaneously.

Parallel to the trend of increasingly fragmented media behavioral patterns, the reflections in the diaries on this matter have grown in sheer number. While fragmented behavioral patterns seem completely normal to most informants, especially in 2017–2019, increasingly fragmented media consumption is linked to negative experiences of increased restlessness, impulsiveness and overall difficulties in maintaining concentration for longer periods of time:

> I'm often bored. And I want to have something to do all the time! Whenever I'm alone I always have at least one chat going. Of course, I would prefer the company of real people, but if that's not possible I turn to media. (Wilmer, 22, 2015)

> I have become so restless, because I have grown used to always having something to watch or do. Movies can feel like an eternity nowadays, because I'm used to 1–3-minute videos on Facebook or Instagram. […] This is something I don't like. It's terrible that I have grown restless to the point that a movie of 1 hour and 40 minutes seems unnecessarily long. It's the same with lectures too. I easily get bored and take out my phone. (Tea, 19, 2017)

> This week I have noticed certain media habits that I have never noticed before. For example, I have noticed how easily I get restless and impulsively take out my phone to check and scroll through social media. This happens all the time. Out of pure habit, I take out my phone whenever I feel bored or need to wait for something. (Ulrika, 19, 2018)

> Every time you are even a little bit bored, you take you your phone to scroll through Instagram. You can't just stand there waiting for the bus with nothing to do. I think this is very common among young people, as well as among adults, as everything is always close by, thanks to smartphones. Even though it's very common, I find it quite alarming. I'm never bored anymore. (Ville, 20, 2019)

A general feature identified among the informants in this study, especially in later years, is that they are never really bored. Every time something feels even slightly boring, impulsively they turn to their smartphone. Since the smartphone is always close by, this impulse is repeated frequently, and often this impulsive checking pattern turns into a habit. The surprise that the majority of the informants express related to their consistent everyday media habits and routines illustrates a general unawareness of their own media behavior. This unconscious dimension of the everyday media routines poses a real challenge when studying such behavioral patterns and their predictors. The increasingly fragmented nature of the everyday routines does not help

much, neither does the fact that frequently recurring fragmented media routines are often experienced and described as disruptive and as "bad habits" by the informants. To shed some more light on this emerging trend, the concepts of *habits* and *routines* are discussed next.

5.4.3. Habits, routines or rituals?

"A magazine is an iPad that does not work" is the name of a YouTube video featuring a toddler trying to get a printed magazine to "work" using the same hand movements as when navigating an iPad.[31] This kind of behavior would have seemed very odd a mere two decades ago, and it will probably seem just as odd twenty years from now. However, this is an example of how digital media affects our everyday skills and practices; we keep adapting, learning and developing new skills and practices for managing the concurrent media landscape. For most people, developing new media habits seldom requires much work or reflection, quite swiftly adjusted behavioral patterns turn into the most natural thing (e.g. Markham 2017). But what is it really that turns "odd" hand gestures or other media-related behavioral patterns into everyday routines?

According to, for example, Duhigg (2012), Couldry (2004; 2005) and Markham (2017) the concepts of *habit* and *practice* are key in understanding the formation of everyday media routines. Inspired by the development of *Practice Theory* in sociology, a new paradigm emerged within media studies, highlighting the importance of regarding media as practice, and focusing on the everyday routines of media consumption (see e.g. Steele and Brown 1995; Steele 1999; Couldry 2004). This perspective suggests that media should not be seen exclusively in terms of content, channels or production economy. Instead, focus should lie on what people do with media; making it, consuming it, ignoring it, sharing it, etc. (Couldry 2004; Markham 2017). *The media practice model*, which was introduced and developed by Steele and Brown (1995), emphasizes the constant interaction between adolescent consumers and media and its central role in "the continuous cultural production and reproduction that characterizes everyday life" (p. 553). This framework was developed to gain a better understanding about why adolescents choose one media source over another and to identify factors that affect this decision. Markham (2017) further emphasizes the importance of understanding not only what media people choose to consume, but their underlying motives, i.e. why they choose that particular media. Habits have been found to play an important role in this often unconsciously

31 The video is available at https://www.youtube.com/watch?v=aXV-yaFmQNk (last accessed 14th October 2019)

performed decision process (e.g. Couldry 2003; Couldry 2004; Couldry 2005; Wang et al. 2015; Markham 2017).

Markham (2017) notes that "habits matter, in part because they are so hard to break" (p. 10). According to Duhigg (2012) habits are hard to break due to the cognitive *habit loop* which involves: 1) cues (that trigger our brains to go into automatic mode and to know which habits to use), 2) routines (which can be physical, mental or emotional), and 3) rewards (that establish that similar behavior will follow similar cues in the future). This cue-routine-reward-loop becomes more and more automated over time and the cue and reward become intertwined; consequently, a powerful sense of anticipation or craving can emerge, and a habit is formed (ibid.). "Cravings are what drives habits," and this is what makes habits so hard to break (Duhigg 2012, p. 59). In order to break a bad habit or create new ones, we need to understand how to curb our cravings. This can be difficult, especially since difficulties in breaking habits also have been related to, for example, deficiencies in self-discipline (Wang et al. 2015).

While Duhigg (2012) uses the term routine to describe the practice or activity performed in response to a certain cue, other researchers define routines as formalized practices or repeated patterns that have become part of everyday life (see e.g. Couldry 2003; Wang et al. 2015). Couldry (2003; 2005) even suggests that everyday media routines often entail deeper meaningful patterns and transcendent values that resemble the characteristics of *rituals*. While the concept of media rituals may seem a bit exaggerated, the media consumption patterns described and reflected upon in this study are defined as routines due to their, however fragmented, repetitive nature and established role in the informants' everyday lives.

While some informants acknowledge a deliberate decision behind their fragmented media routines, most media-related routines are described as unconsciously performed activities. The informants' expressed surprise and unawareness related to their own media behavior further highlight the impulsive and habitual nature of their everyday media routines. This suggests that engaging in media is not always a deliberate decision but an unconsciously performed activity triggered by a certain cue or the anticipation of a reward. In order to break what is perceived and described as "bad habits" or create new and sound media routines, a better understanding of different elements (cues, activities and rewards) affecting everyday habits and routines is needed. However, habits are often contextually and socially embedded (Couldry 2004; Duhigg 2012; Wang et al. 2015), which makes it harder to identify and recognize specific cues. Furthermore, the addictive nature of habits needs to be addressed.

5.5. Addiction

There is a fine line between habitual and addictive behavioral patterns; how do you know if you have developed a bad habit or an addiction? For example, Metcalfe and

Mischel (1999) and van Deursen et al. (2015) suggest that habits can considered automatic behavioral routines without a total loss of self-control, whereas addiction is characterized by loss of self-control. In addition to loss of control, addictive media behavior is often defined according to classic addiction symptomology such as growing tolerance and withdrawal symptoms (see e.g. Lanaj, Johnson, and Barnes 2014; Lin et al. 2015; Duke and Montag 2017). This study does not embrace any actual diagnosing of media addiction; what is expressed as addictive behavior in the diaries may not correlate with any clinical definition of media addiction. Still, one of the most prominent trends emerging in the empirical data analysis is a growing amount of expressed addictive tendencies related to media among the informants. The concept of *self-perceived media addiction* is introduced to explore this emerging trend further.

The main difference between the emerging trend of addiction and the previous one (routines) is that this category highlights compulsive behavioral patterns, withdrawal symptoms and other consequences that are experienced and described as particularly problematic by the informants themselves. While reflections that indicate problematic self-perceived media addiction can be found in several diaries throughout the years. The past few years, in particular, have witnessed a radical increase in the number of such reflections.

5.5.1. Reflections on addictive behavior

Throughout the entire study, many informants quite openly reflect upon what can be described as addictive tendencies in their media diaries. They admit to being addicted to, for example, social media, staying in touch with friends, constantly knowing what is happening, and constantly being connected and available. As already discussed in the previous section, many describe addictive tendencies related especially to their smartphone and fragmented media behavior:

> I know I'm addicted to my smartphone and to staying in touch with my friends all the time and knowing what's going on. I became "addicted" to staying in touch, checking Facebook and Instagram immediately after getting my smartphone, since it is so easy to just click and see what's happening or send messages, etc. I would never be this addicted should I have a normal phone without Internet, etc. Still, after having had a smartphone for a while I would never ever replace it with a traditional phone ever again. (Felicia, 19, 2013)

> It is safe to say that I'm addicted to my phone and social media. I automatically check them several times per hour even though I know nothing new has happened. Especially when I feel stressed or anxious, I check Instagram, and this calms me down. You could say that my phone has become my "security blanket". (Carina, 20, 2019)

While media addiction has been described and reflected upon throughout the years, the nature of the reflections on media addiction has changed over the years. In the earlier years of the study (2013–2014), the reflections were quite "harmless" and not that elaborate; mostly simple observations of the fact that one has become addicted to media. Only a few informants expressed concern for potentially negative effects on, for example, their health and time management ability:

> I'm not that surprised to see how much I use media. I already knew I'm as good as addicted and that media is an important part of my everyday life. (Anne, 19, 2013)

> I frequently work with everything from my laptop, my computer, my phone and my iPad. I guess I have become digitally addicted. (Alexander, 20, 2014)

> I know I abuse it [social media] and Facebook has become something of an addiction. You are always reachable, which can be very bad for your mental health and, also, you spend a lot of time engaging in these without even thinking about it." (Pamela, 21, 2013)

In 2015–2016, the nature of the reflections started to change, becoming more elaborate and showcasing increased frustration, concern as well as awareness of potential negative consequences that media overuse and addiction can lead to:

> The diary made me realize I use my smartphone 27 hours a week for other purposes than calling people. Think about it, I could earn an entire study point by using that time for better purposes. […] I really need to find ways of not using my phone, maybe leave it at home someday. Because, whenever I use it, I seem to lose track of time, regardless of what else I'm doing at the same time. (Adrian, 20, 2015)

> I experience that media takes up too large a space in my everyday life. It is expected that you are available, connected and up to date with recent events in society all the time, but you forget to give your brain a break every now and then. This constant overload disturbs my concentration. It is troubling to see how much time I spend on my phone or my computer every single day. (Mathias, 23, 2015)

In 2017 and after, the reflections on addictive media behavior have become even more elaborate, often including expressions of strong emotions in relation to alarming withdrawal symptoms when the phone is not near, or Internet access is limited. Also, excessive and addictive media use increasingly seems to lead to problems with time management, procrastination, sleeping and focusing on study related tasks:

> One reason why digital media is easily experienced as addictive is the fact that it's easy to lose track of time when intensely engaged in something interesting on the

> screen(s). This, in turn, affects other parts of everyday life. Is it really reasonable to use your phone while studying? I notice I do this a lot and it's a pitfall that can take up a lot of time that could be better spent on for example, focusing on studies or exercising. (Zacharias, 22, 2017)

> I use media every minute of the day. I chat, I snap, I read news, I look for apartments, I look for inspiration, I look for jobs […] etc. It worries me that I don't know what to do if I don't do all of this. What scares me even more is that this is only the tip of the iceberg concerning technology and we are already this addicted. What will the world look like in just 2 years? […] I can admit I'm completely addicted to my phone. Still, it was with shame I filled in the diary. I wish I would do something better with my time! (Ulla, 24, 2018)

> What I noticed this week is that I'm completely addicted to my phone. I have to put it in a box or leave it in another room to get away from it. I have also noticed I sort of experience withdrawal symptoms when it's not near me. […] I have lately experienced problems with sleeping. This diary made me realize that maybe my addiction has something to do with that. (Theo, 26, 2019)

For some informants, the media diary task served as a real eye-opener, while others had already reflected on their (excessive) media use and potential (negative) effects in other contexts. A general unawareness of one's own media use and addictive tendencies could still be recognized in the reflections. Also, some content or activities may have been left out from the diaries due to shame or embarrassment that reporting or admitting to such addictive behavior may entail. For example, two diaries include reflections on being addicted to pornographic content, whereas, that kind of content is not mentioned at all in the other 99,8 % of the diaries.

5.5.2. Media addiction on the rise

The trend of increasing media addiction is one of the most prominent trends recognizable in the diaries and reflections on addictive behavior have drastically increased in number over the years. Table 6 (p. 114) offers an overview of the total number of diaries collected each year (that are included in the study), as well as the number and percentage of diaries that includes reflections that indicate self-perceived media addiction.

Table 6. Reflections on media addiction 2013–2019

	2013	2014	2015	2016	2017	2018	2019	TOTAL
Total number of diaries	157	98	121	101	118	92	91	778
Number of diaries including reflections on media addiction	10 (6%)	5 (5%)	8 (7%)	16 (16%)	26 (22%)	21 (23%)	25 (27%)	111 (14%)

Starting from a mere 5–6% in 2013–2014, reaching over 20% by 2017 and exceeding 25% in 2019, a clear trend can be recognized. In 2019, more than one fourth of the informants describe their media behavior in terms of some sort of media addiction and disconcerting consequences. An interesting observation is that between 2015 and 2017, there is a considerable "jump" from 7% to 16% (in 2016) to 22%. A possible explanation could be linked to the growth of increasingly integrated and intelligent algorithms, notification systems and functions in social media around that very time, designed specifically to get people "hooked" and engaged for a long time (e.g. Alter 2017; Morgan 2017; Hansen 2019a).

Along with the increasing number of descriptions of and reflections on media addiction, the nature of the reflections have also dramatically changed (as described in the previous section). It seems that media addiction has become "the new normal" and that this is a generally accepted, if not even expected, behavioral pattern, especially among these young adults:

> I know my media consumption is ridiculously excessive. Still, it frightens me that everybody thinks this is "normal", and that everybody accepts our addiction. Being addicted to social media is no longer weird; what's weird is if you haven't checked Instagram or Snapchat in a few hours. Then you feel you should almost offer an explanation for this rude behavior. (Vera, 19, 2017)

> I feel physically sick when I see my media consumption before me. I guess it's the same for everybody else, though. We truly live in an era when you are expected to be addicted to media and always available. But I can't help to think, is this really how I want to spend my life? (Tyra, 20, 2019)

Just like breaking a bad habit, breaking what is perceived as an addiction can be very difficult. Many informants express a wish to break their addictive patterns and cut down on what they perceive as unnecessary, time-stealing and even downright harmful media use. However, they generally do not know how to actually do it:

> The media diary was not surprising. I know I'm addicted to my phone. This is not good. It disrupts my concentration and makes it harder living in the now. It's hard to focus on what the other is saying in a conversation. I would really like to stop all this. I just don't know how or if it can be done. (Susanne, 24, 2017)

> I have tried to eat without media, and I didn't succeed, which really is a shame. When I'm with company I can forget about my addiction for a while, but if that person is also addicted it doesn't help me much. My boyfriend has now started taking away my phone when I pick it up while we're doing something together. […] You don't realize it before seeing it on paper like this, but this is really scary. I hope I can find a way to improve my behavior. I do not want to live like this. (Rita, 20, 2017)

> Since iPhone started with its Screen time-function I have - almost involuntarily – started to follow up on how much I use my phone every day. I check my phone about 6,5 hours during my waken hours. In addition to this, I use my computer regularly for Youtube and Netflix. […] In total, I have spent 45 hours on my phone this week. Which is more than two entire days and nights. […] This is exactly why I was reluctant to do this task in the first place. However, now that it's done, it's almost a relief. Now I just need to find ways of managing my media use. (Olivia, 19, 2019)

These empirical findings and identified patterns mirror a concurrent upswing of similar results and an increased awareness of the "downside" of (mobile and social) media, which is depicted in a vast number of recent reports and articles. Concern is raised related to the negative consequences on an individual level as well as larger societal levels of this steadily increasing trend of media addiction, especially among young people. At the same time, there is an ongoing discussion on whether such a thing as *media addiction* even exists.

5.5.3. Self-perceived media addiction

The phenomenon of media addiction has been extensively discussed in both popular and scholarly contexts in the past decades (see e.g. LaRose, Lin, and Eastin 2003; Duke and Montag 2017; Rotondi, Stanca, and Tomasuolo 2017; Kim, Kim, and Cho 2017). Particularly since the advent of the smartphone in 2007, media addiction gained an increased interest among numerous researchers across several fields (e.g. Miller 2012; Duke and Montag 2017). The rapid development of smartphones and other mobile technology in the past decade has had a dramatic impact on sociocultural behavior and norms concerning everyday media use (Cheever, Peviani, and Rosen 2018). Larger screens, longer battery life, improved mobility and easier access to all types of mobile devices have led to a rapidly mounting dependence on technology (ibid.). However, the validity of a condition such as media addiction has been thoroughly

debated (e.g. Widyanto and Griffiths 2006; De-Sola Gutiérrez, Rodríguez de Fonseca, and Rubio 2016; Duke and Montag 2017).

Traditionally, the concept of addiction has been defined in very limited terms, primarily related to addiction to substances such as drugs or alcohol that foster physical dependence (Holden 2001). The past few decades have seen an upswing in research especially on behavioral addictions and addictive behaviors within areas such as gambling, Internet use and video gaming (Holden 2001; Leeman and Potenza 2012; Yau and Potenza 2015). Research on media addiction is a fairly novel research area, originating from research on Internet addiction initiated in the 1990s. Studies have shown that the habit-forming nature of smartphone (and other mobile media) use can lead to problematic effects such as addictive behaviors similar to that of gambling addiction (e.g. Oulasvirta et al. 2012; Duke and Montag 2017). Addictive behavior can easily become problematic and interfere with everyday life activities and relationships as well as school or work obligations (Young 1998; Rosen 2012; Kwon et al. 2013; Lanaj, Johnson, and Barnes 2014; Lin et al. 2015; Duke and Montag 2017).

However, contradictory to the general beliefs, people do not become addicted to the devices, the platforms or the media activities. It is the rewarding effects or the anticipation of rewarding effects, providing a "high" (i.e. increased levels of dopamine) that triggers the addictive behavior (e.g. Rosen 2012; Hansen 2019a). As far as the brain is concerned, a reward is a reward, regardless of whether it is caused by a chemical substance or an intense experience (Holden 2001). Therefore, whatever substance, activity or experience that triggers a "high" amplifies the risk of becoming trapped in an addiction (ibid.).

Furthermore, while extensive [mobile] media use is often associated with media addiction, this is actually not a defining feature. Media overuse may be a sign of media addiction, but withdrawal symptoms such as growing tolerance, loss of control (e.g. distortion of time spent on media), and interpersonal or health problems are more relevant in identifying addictive media behavior (e.g. Rosen 2012). According to Krych (1988), addictions externalize themselves in compulsive behavior and are characterized by repetitive loss of predictable control, which may often lead to severe consequences not only for oneself but also for family, friends, etc. Addicts are simply not able to stop their search for "highs", despite any physical or psychological harm that may follow. Typically, tolerance increases as the body adapts to something, which means that new ways of reaching the same highs are constantly pursued. Over time, the pursuit of "highs" may take over one's entire life and dominate every activity. (ibid.) Severe physical and physiological conditions may follow, for example mental health conditions such as depression, anxiety, social impairment and sleeping problems (e.g. Rosen 2012; Duke and Montag 2017; Soni, Upadhyay, and Jain 2017). In addition to classic addiction symptomology, a few specific symptoms related to media addiction have also been identified, for example, Technostress (see e.g. Chiappetta 2017) , FOMO (fear of missing out), (see e.g. Wolniewicz et al. 2018) and Nomophobia (distress and fear of not being able to use one's phone) (see e.g. Tams, Legoux, and Léger 2018).

Here, self-perceived media addiction is used to explore the emerging trend of increasingly expressed addictive tendencies among the informants. This concept embraces addiction that has not been clinically diagnosed, but compulsive behavioral patterns that are experienced and described as addictive and problematic by the informants themselves. While self-reported experiences and narratives on addiction have been studied previously within areas such as drug addiction (e.g. Hammer et al. 2012), addiction studies with a self-report focus remain quite scarce in many other contexts. Still, for example Duffy et al. (2016) and Meadows et al. (2017) highlight the importance of considering self-reported addictive behavior as a way of identifying individuals in need of assistance before problematic behavior "gets out of hand". Studying self-perceived pornography addiction, Duffy et al. (2016) suggest that factors such as excessive use and experience of negative consequences are often utilized to operationalize self-perceived addiction. In the case of self-perceived food addicts, Meadows et al. (2017) found that similar problematic behavioral patterns and negative effects were experienced among self-perceived food addicts and among food addicts with a clinical diagnosis. While the symptoms were more severe among those with a diagnosed food addiction, the results were also alarming among self-perceived addicts in comparison with "non-addicts" (ibid.).

While the term self-perceived addiction is scarcely used in media addiction studies, this underlying logic is widely applied, using an array of different scales and questionnaires to identify and determine [self-perceived] media addiction among participants (see e.g. Duke and Montag 2017). Still, the measures for identifying self-perceived media addiction remain inadequate and disperse. Inspired by, for example, Duffy at al. (2016) and Meadows et al. (2017), self-perceived media addiction in the present study is characterized by a) perceived overuse of media, and b) experienced negative consequences similar to those of [clinically diagnosed] addiction, such as withdrawal symptoms, interpersonal and/or health issues and time management problems.

What is important to remember is that even though addictive behavior in the diaries is often expressed in terms of *smartphone addiction* or *social media addiction*, what actually triggers addiction is the "high" that using the smartphone or checking social media provides (Rosen 2012). In other words, the informants are not addicted to the actual device or platform, rather the reward or the anticipated reward that this provides in their everyday lives. The reward can be related to, for example, keeping in touch with family and friends, having something to do when feeling bored or restless, stimulation when in need of entertainment, etc. Even if the activity that triggers the "high" is consciously managed and altered, the search or urge for that "high" may still prevail:

> I have tried to cut down on my mobile use, and often I can leave my phone behind without any problems. But, instead, I use my computer more often. […] For example, I now have grown addicted to watching series on my laptop. (Kajsa, 21, 2019)

This quote quite clearly illustrates what can happen when the "high" is compulsively sought after even though a specific trigger, in this case the mobile phone, is taken out of the picture. This indicates a certain level of uncontrollable behavior and shows that breaking compulsively performed activities and addictive behavioral patterns can be much more difficult than one might anticipate.

5.6. Media multitasking

Another emerging trend recognized in the empirical study is the trend of increasing media multitasking behavior among the informants. While frequent descriptions of media multitasking activities have been prominent in the reflections throughout the entire study, a decision to focus on *media multitasking* as the core concept was made in 2016, after four rounds of data collection and analysis. This decision was affected by two aspects: 1) this was the most prominent of the recognized emerging trends, and 2) there was a concurrent trend of rapidly mounting research within this specific area. Due to the status of core concept[32], a literature review on this particular concept is presented separately in chapter 4. This section explores how the informants describe and illustrate everyday media multitasking activities in their diaries, and how their reflections on media multitasking have changed and developed over time.

5.6.1. Reflections on media multitasking

The vast number of diaries collected for this study encompass widespread mentioning of and referrals to different types of concurrent media use. Even though the daily loggings of media use in the diaries are not included in this study, media multitasking is a clearly visible trend also in the reflections. However, the word itself (*multitasking*, *multitask* or *multitasker*) is mentioned as such only by a mere 18 informants throughout the years; most of these entail mere statements that simply confirm multitasking behavior, without much more thought or reflection:

> Apparently, I'm also good at multitasking, like watching TV, checking Facebook and working on an essay at the same time. (Sara, 20, 2013)

32 To highlight the status of media multitasking as the core concept in comparison with the other identified emerging trends and theoretical concepts (in accordance with Gioia et al. 2013), this concept is marked in the developed data structure overview (see Figure 4, p. 126) and in the final data structure overview (see Figure 5, p. 149) with a different colored "circle".

> … I watched a few episodes of HIMYM on Netflix on my tablet and at the same time I chatted on Facebook on my mobile phone. I also checked the headlines on the Iltasanomat mobile page every now and then. I guess this is multitasking in all its glory! (Tim, 24, 2014)

> It's so easy to take out the mobile and start "swiping" to pass the time. I also noticed it's easy to use several media simultaneously. Especially when you watch series or other TV programs, you often surf social media. I don't know why. Maybe we are just used to this as multitasking is a common phenomenon in today's society. (Ben, 22, 2017)

> In this study, I noticed I use many different media concurrently. For example, I have the TV on as well as the computer, where I check YouTube and maybe chat in WhatsApp or SnapChat with my friends. Still, this was no surprise to me as I often engage in multitasking. (Ann, 21, 2018)

Regardless of the fact that the term multitasking is scarcely used, concurrent media use is frequently described in a wide array of different ways in the reflections. The most common way is to describe one media activity which is performed *at the same time* or *while* (in Swedish *samtidigt* or *medan*) another media or non-media related activity. Almost all the diaries include these types of descriptions of multitasking, along with reflections on whether this came as a surprise or not, whether it is good or bad, how it makes the participants feel or why the participants engage in such behavior. The descriptions are similar throughout the years; however, the reflections have become richer and more elaborate in later years, including, for example, more thoughts on potential negative effects:

> … while I ate my breakfast, I surfed the web on my laptop and checked Facebook and Instagram on my phone. The TV was also on in the background. (Lina, 21, 2013)

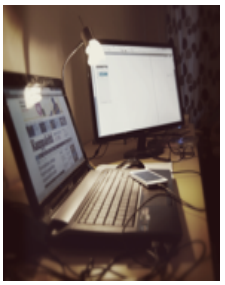
> I usually spend several hours watching TV and doing chores at home at the same time. The phone also kind of creeps up on me, and while doing these other things I often check Instagram, Facebook and Ilta Sanomat to stay updated. (Elliot, 22, 2015)

> … when I work with school tasks at home, I notice that I, too, easily take out my phone and get distracted. I have noticed that I often use several media at the same time, which is not a good thing for my ability to concentrate. (Sofia, 20, 2017)

> I quite often use several different media at the same time. Often when I watch series, YouTube or movies, I also "scroll" through Instagram, Facebook or Snapchat. It's because I'm actually more interested in checking what others are doing than watching the series or movies. (Peter, 22, 2018)

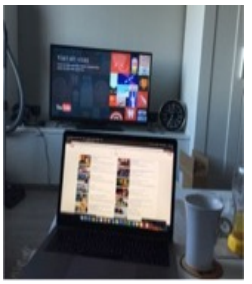
An indication of the widespread everyday media multitasking behavior among the informants, is also illustrated by the pictures included in the diaries. Throughout the years, the participants have been asked to illustrate *typical media consumption situations* in pictures, in addition to their daily loggings of media consumption and their reflections. Not all diaries include pictures as this initially was a voluntary element. However, the majority of the pictures that were included told a quite unanimous story, a story about typical media consumption situations involving more than one screen, device or activity. Since 2017, the participants were asked to describe their pictures with a few words. A few examples of pictures as well as descriptions from the diaries are included here (see Pictures 1-7, below).

Picture 1
(Benita, 19, 2013)



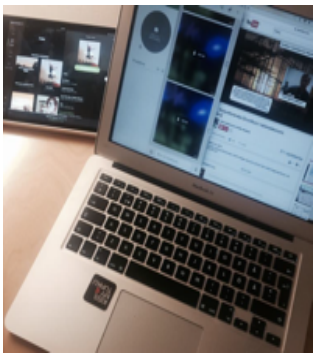
Picture 2
(Ted, 21, 2013)

Picture 3
(Andreas, 20, 2014)



Picture 4
(Freja, 22, 2016)

Picture 5
(Mona, 20, 2017)



Picture 6
(Cecilia, 19, 2017)

Picture 7
(Helena, 20, 2018)

Picture 5. This is what it looks like when I use YouTube videos for inspiration and watch a movie on TV, while I do my workout at home. (Mona, 20, 2017)

Picture 6. This is a common situation when I work with school stuff. I laughed when I realized what I was doing. I don't always have the energy to listen to lectures, and then I put on some background music. I also downloaded WhatsApp on my

computer, so now I can chat with my friends at the same time also. Convenient! Or not… (Cecilia, 19, 2017)

Picture 7. This is what it looks like when I study for an exam. Moodle is open on the computer, and I often also play background music on it. The phone is there in case I need it. I always want it close by. (Helena, 20, 2018)

In addition to what devices and content concurrently being used, the reflections often include a reference to when and where these activities take place. A large portion of media multitasking is performed at home, especially as part of everyday morning and evening routines. Media multitasking activities performed at home often include using a mobile device (primarily a mobile phone) while, for example, watching a movie or TV series (on television or laptop) or listening to music or the radio while using the computer for work or entertainment.

Second screening is quite often described when watching, for example, sports, but checking social media content or chatting with friends while watching something non-related on TV or the computer screen is more common. Sometimes media multitasking at home is performed unconsciously, sometimes in a more deliberate manner:

When I wake up, I always start the morning by checking Facebook and Instagram on my smartphone while I listen to the radio. Then I switch to Spotify on my iPod while I check e-mails and Moodle on my computer. My morning almost always looks the same. (Marika, 20, 2014)

… I also often use my mobile when I watch football or hockey on TV or Viaplay at home in the evenings. I mostly read discussion forums on the game I'm watching or other sports news, but I also scroll through social media. (Paul, 26, 2017)

When I watch Netflix at home on my computer, I often simultaneously use social media like Snapchat and Instagram on my mobile phone. This is something I also do when I should study at home, especially if I should concentrate on an online lecture. Sometimes I do this unconsciously. If I see or hear that I have got a new message, I check the phone, and often it just kind of sticks to my hand. (Viivi, 19, 2018)

Multitasking also happens at home – at best I have the TV and the computer on and my mobile in my hand. I think that sometimes I do this without thinking – for example, if I watch a movie and there is a commercial break, I find myself with my mobile in my hand scrolling through social media or forums in search for something entertaining. (Lovisa, 20, 2018)

Another place or situation where the informants often multitask with media is at university, either while working on school tasks or during lectures. During lectures, in particular, it seems the informants are fairly quick to take out their mobile phones, tablets or laptops (if not already on the table) and check social media or other types of media content if they feel bored or uninterested. The media content they engage in is seldom connected or relevant to the lecture or learning situation:

> During lectures I mostly use Moodle and mail to check things related to the lecture, but sometimes I also need to read HBL just to stay awake… (Janne, 20, 2016)

> During the lectures, I try my best to leave my phone in my bag. Usually I do not succeed. (Sara, 20, 2017)

> I always bring my computer to school and sometimes I tend to multitask; during lectures I often make notes on my computer, but at the same time, I also answer e-mails and check social media. (Pia, 20, 2018)

> At school, I often take out my phone in many different situations. For example, I always take it out when I'm waiting for someone or something, since I hate just standing there in silence without anything to do. […] during lectures it has become an almost automated move to take out the phone whenever I have no interest in listening to the lecturer. (Edwin, 20, 2019)

As the mobile phone is always within reach, the opportunities for media multitasking grows. Often, the participants also multitask "on the go", for example on their way to university and home, while traveling by car, bus or train and while exercising. Primarily they use their mobile phone in combination with, for example, TVs or other screens at the gym or while engaging in conversation with others. In addition to frequently checking social media in these situations, a popular activity is listening to music or podcasts via the phone:

> I was efficient while I traveled back to Turku by bus, I listened to radio X3M while using my phone to surf, read blogs and check Facebook. At the same time, I also tried to talk to the person next to me. (Elin, 19, 2013)

> I listen to music on my way to the gym and while working out for motivation. Sometimes I also watch TV at the gym while running, primarily as entertainment. (Mark, 21, 2016)

> Almost always when I walk somewhere, for example to school or to the gym, I listen to podcasts or Spotify. Often, I also check Facebook, Instagram and Snapchat at the same time. (Monica, 19, 2018)

Overall, the empirical study indicates that the majority of the informants engage in media multitasking basically everywhere and all the time. For example, listening to music or podcasts is something that many informants do frequently throughout the day, in many different situations; often while walking or exercising, but also while studying. This is most often perceived as something very helpful or even necessary in staying focused on a specific task for a long period of time. However, while some activities, such as listening to music or podcasts, may be perceived to have a positive effect, especially in later years, distractive effects of media multitasking have been increasingly described and reflected upon.

5.6.2. Increasingly disruptive media multitasking patterns

As a consequence of the decision to feature media multitasking as the core concept, instructions to reflect particularly on this type of behavior were added to the diary instructions in 2017 (see Appendix 2) and have been part of the instructions every year since then. Up to that point, the reflections and pictures indicated a clear trend of increasing multitasking, even though the diary instructions did not include any indications to specifically observe or reflect upon concurrent media use (see Appendix 1). However, the addition of these explicit instructions quite naturally caused a noticeable increase in the number of reflections on the matter.[33] The nature and scope of the reflections have also changed quite dramatically in later years. In the earlier years, reflections related to media multitasking were quite indifferent, featuring very few emotions or thoughts on potentially negative consequences. In comparison, the reflections in 2018–2019 include frequent recognition of and reflections on the *disruptive nature*[34] of everyday media multitasking activities. While this may be a natural consequence of the altered diary instructions, it also indicates a change in how the informants perceive and relate to their own observed media multitasking behavior.

Throughout the entire study, some informants seem to experience frequent engagement in media multitasking as a completely natural thing and they see no need to stop doing it. Some claim they are very good at it and state that they feel productive when media multitasking:

33 Due to the altered instructions, a similar overview table as the one presented for media addiction (Table 6, p. 114) has not been made on the development of reflections related to media multitasking.

34 In prior media multitasking literature, negative effects are mostly described as distractive or interruptive (see e.g. Carrier et al. 2015; van der Schuur et al. 2015; Aagaard 2019).Here, the concept of disruption/disruptive is preferred to illustrate the repetitive and habitual nature of everyday media multitasking behavior and more profoundly experienced and long-term negative consequences. See section 2.5. for a more elaborate discussion on the concept of disruption.

> I don't like it that my media use sometimes eats a lot of my time. Still, I feel incredibly blessed to live in a time where Internet can provide me with all the information I wish for. I can maintain my knowledge of what's happening in the world, I can be inspired, and I can keep in touch with people who live near and far. I hope that media will continue to remain qualitative, and that, for example, journalism won't lose its stand. […] For my part, I will certainly continue to use many media simultaneously in the same way I do now. I think I'm quite good at it and I get more things done at the same time. BUT I will try to be more conscious in doing so to keep from losing track of time as often. (Alina, 19, 2017)

> Multitasking is something I engage in frequently simply because I'm good at it. For example, I quite often go through the wonders of my phone while watching Netflix. (Tommy, 21, 2019)

However, many informants admit to easily becoming distracted by the phone, by notifications or by an internalized habit to regularly check the phone or social media for potential updates. As a consequence of repeated engagement in media multitasking, many informants also recognize long-term disruptive consequences. For example, they acknowledge that they (too) easily get caught up in their phones or social media and lose track of time. Furthermore, perceived negative effects on academic performance is frequently mentioned in the diaries:

> I have noticed that I take out my phone very often if I start to feel bored. […] I don't exactly see this as a big problem since I still get my schoolwork done, but it clearly slows me down. (Noah, 20, 2017)

> The more media I consume, the more my productivity decreases. This is partly since scrolling on social media takes a lot of time, usually more than initially planned. Also, I find social media more interesting than studying and this leads to more and more procrastination. (Liam, 19, 2018)

> Using social media all the time on our phones helps us in many ways, but for me, social media and my mobile phone are often a distraction, for example, when I try to study. I often engage in social media while studying and this decreases my productivity. (Amy, 20, 2019)

> I almost always use several media when I'm at home […]. For example, if I use my computer, I often use my phone also for sending messages and checking updates on Instagram. I also use Instagram and Snapchat whenever I watch Netflix. I have come to realize that I'm no longer capable of focusing on only one thing at a time, I always need to have more than one thing to do. This becomes a problem whenever I'm supposed to study for an exam or something else. (Lennart, 21, 2019)

> My mobile phone often distracts me, especially if I'm not that motivated to begin with. It's almost too easy to just take out the mobile. When I study, I can't see or hear my phone, otherwise I will get distracted and the time for completing school tasks takes longer and the result becomes worse. Still, I can't seem to leave my mobile at home. (Penny, 19, 2019)

In 2017–2019, there is an increasing number of reflections where concern, even fear and anxiety, is expressed related to frequently repeated disruptive media multitasking behavior (see sections 6.2.2. and 6.2.3.). While some have found strategies and tools to manage and control disruptive effects (see sections 6.2.1. and 6.2.4.), a large share of the informants seems to be getting increasingly drawn into what is described as fragmented, addictive, routinely performed and highly problematic media multitasking behavior.

5.7. An aggregated theoretical dimension: Disruptive everyday media multitasking

In accordance with these empirical findings on increasing distractive tendencies and perceived negative consequences related to everyday media multitasking, the focus of the study shifted over time towards the concept of *disruptive everyday media multitasking*. While some studies address the disruptive effects of everyday media multitasking (see e.g. Janssen et al. 2015; Deng 2020), this particular concept is scarcely used in prior literature or research on media multitasking. Here, it is added to the data structure overview as an aggregated theoretical dimension (see Figure 4, p. 126) to further explore the informants' relation to everyday media multitasking.

Disruptive media multitasking entails everyday media multitasking activities that are characterized by a perceived and expressed disruptive nature and problematic consequences. The informants do not describe this type of activity using the term disruptive (or even distractive or interruptive), rather, this aggregated theoretical dimension is introduced as a general category for further exploring predictors of perceived problematic everyday media multitasking behavioral patterns. Furthermore, this concept and category highlights the interconnection between the four key emerging trends. The trends and concepts of materiality, routines and addiction hold a strong explanatory power in relation to the core trend and concept of media multitasking (in accordance with e.g. Glaser and Strauss 1967; Glaser 1978; Hämäläinen 2014).

An underlying assumption in relation to the concept of disruptive everyday media multitasking is that non-disruptive media multitasking exists. However, this notion makes the concept of disruptive media multitasking complicated. Prior research has established that certain automated tasks can be performed simultaneously without any disruption, however, this involves automated tasks that do not require any complex cognitive processing (e.g. Kirschner and Karpinski

2010; Sana, Weston, and Cepeda 2013; Srna, Schrift, and Zauberman 2018). Media multitasking in the sense of concurrent processing of two or more tasks that are more advanced than walking and talking is not possible, as our limited cognitive processing capacity leads to cognitive overload, distracted minds, switching costs and impaired information processing (see e.g. Kirschner and Karpinski 2010; Carrier et al. 2015; Kazakova et al. 2015; Gazzaley and Rosen 2016). Most often concurrent everyday media use implies some type of disruption (in accordance with e.g. Aagaard 2019). A reassessment of the concept of media multitasking as defined earlier is thus needed to motivate the use of disruptive media multitasking in this study.

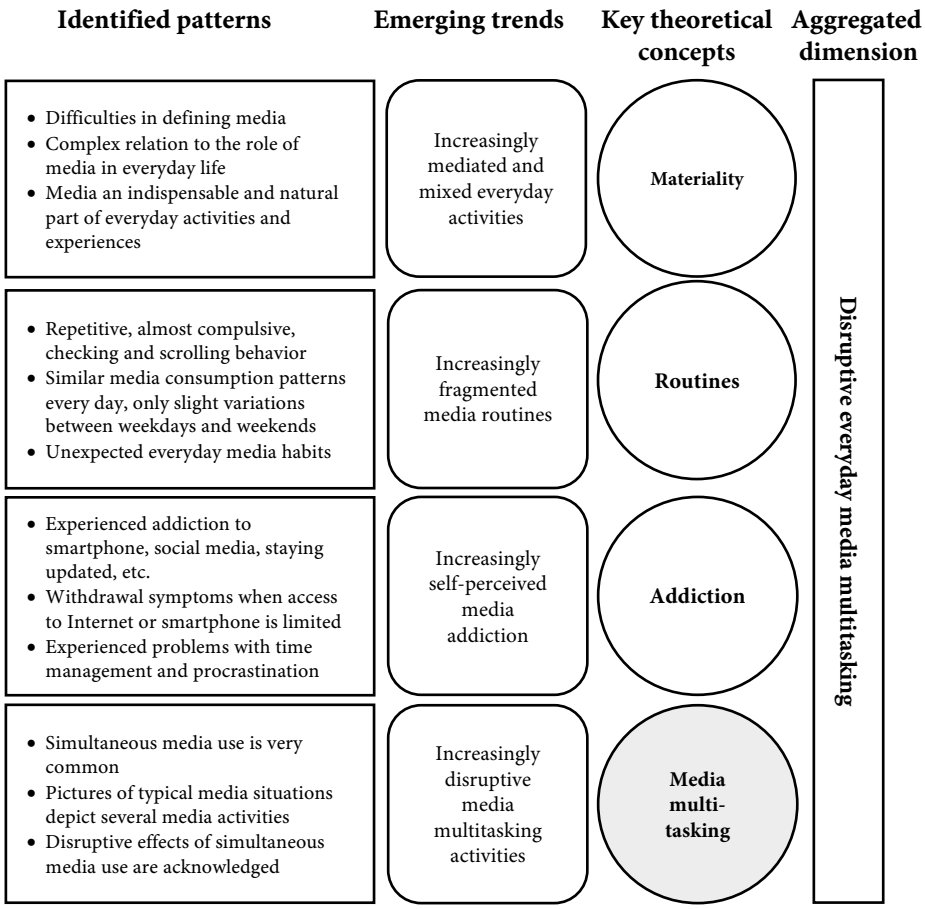


Figure 4. Developed data structure overview

The fact that some forms of media multitasking consistently lead to documented positive effects undermines the assumption that media multitasking is always disruptive. For example, listening to music or podcasts while engaging in other activities, such as exercising or studying, is a growing trend among the informants

in the empirical study. A similar trend has also been identified in prior studies (e.g. Voorveld and van der Goot 2013; Kämpfe, Sedlmeier, and Renkewitz 2011). Listening to music or podcasts would presumably require more cognitive attention than most automated tasks. Still, this is seldom perceived as distractive by the informants; rather, they see it as helpful or even necessary in staying focused for a long period of time. Several studies support the notion that listening to background music can improve focus in many different contexts, for example, while driving (e.g. Nijboer et al. 2016) or in different learning environments (e.g. Kämpfe, Sedlmeier, and Renkewitz 2011; van der Schuur et al. 2015). One explanation for the consistently perceived positive effects could be emerging skills among avid media multitaskers to create media hierarchies; filtering out and prioritizing primary tasks over background or secondary tasks (e.g. Bardhi, Rohm, and Sultan 2010; Angell et al. 2016). Another explanation could be that the music helps to tune out other potentially distracting external stimuli (ibid.). However, the explanation may also lie in the definition of the very concept of the *tasks* involved in multi*task*ing.

Depending on how a task is defined, the disruptive precondition of media multitasking can be further questioned. The term multitasking was originally a technical term for describing a computer's ability to process several tasks simultaneously (e.g. Xu and Wang 2017; Aagaard 2019). Later, cognitive psychologists have adopted the term for describing "situations in which the human mind divides attention between several tasks at once" (Aagaard 2019, p. 91). In everyday vocabulary, multitasking has become a way to describe the activity of juggling several tasks at the same time (ibid.). Drawing on Kirschner and Karpinski's (2010) statement that multitasking is only possible when performing automated tasks, we would be multitasking all the time as we are constantly "juggling" several automated tasks such as sitting, blinking, breathing, etc. simultaneously. This makes the entire concept of multitasking redundant as there is no such thing as "unitasking" to contrast the phenomenon. Thus, Aagaard (2019) suggests that automated tasks need to be excluded from the definition of multitasking (or at least they should not be defined as tasks in this context). However, if we retract automated tasks from the multitasking definition, we end up where we started with the assumption that media multitasking per default is distractive and the concept of disruptive media multitasking would become redundant (ibid.). This would make the above-mentioned example impossible (if listening to music is not classified as an automated task) and that entire field of research more or less inadequate.

Furthermore, the vast body of cognitive psychology literature and empirical research, where media multitasking is defined as task-switching, has the act of multitasking divided into primary and secondary tasks. Most studies build upon the premises that the secondary task interferes with the primary task (and that multitasking is thus distractive), as both tasks require a certain degree of attention and therefore causes cognitive overload (e.g. Aagaard 2015; Aagaard 2019). However, the problem with studies aiming to measure such cognitive overload and

distraction as a consequence of media multitasking is that they are experimentally designed to pull in opposite directions (Aagaard 2015). "What is measured is not the effect of media multitasking per se […], but of distractive media multitasking. At best, this leads to tautological results ("distraction is distracting"). At worst, it leads to ambiguity and conceptual confusion." (Aagaard 2015, p. 888).

The question remains: is there such a thing as media multitasking that is not distractive? Well, as mentioned, some forms of media multitasking (if defined as such) can help the informants stay focused in different contexts and actually have a positive effect on task performance. This study embraces the existence of this type of non-disruptive media multitasking. For example, listening to background music while studying is an example of non-disruptive media multitasking. Using media as part of other study related tasks, for example to check for additional information or concept definitions, can also be very helpful (provided the media content is relevant to the task at hand) even though it may add a few minutes to the total time it takes to complete the task.

Still, most often, media multitasking that is perceived as positive and helpful can be related to false feelings of productivity (e.g. Brasel and Gips 2011; Dabbish, Mark, and González 2011; Adler and Benbunan-Fich 2013; Aagaard 2015; May and Elder 2018), or overconfidence in one's own ability to multitask (see e.g. Sanbonmatsu et al. 2013). Undoubtedly, most media multitasking activities that diginatives (and others) engage in is of a disruptive nature. To gain a better understanding of this phenomenon, particularly its predictors, we need to move beyond the mental processing of two (or more) concurrent tasks and consider the entire decision and prioritization process involved (e.g. Benbunan-Fich, Adler, and Mavlanova 2011; Robinson 2017). Prior cognitive laboratory studies have struggled in addressing this process (Aagaard 2015). Instead of studying whether media multitasking is distractive or not, or what distractive effects distractive media multitasking may lead to, we need to focus on more relevant questions, such as "when it happens, how it is experienced, and why it occurs so frequently" (Aagaard 2019, p. 96). The four key emerging trends identified in this study are essential in exploring these questions further.

The precondition in most everyday media multitasking studies is that the activity of media multitasking is the result of a deliberate underlying time allocation decision (Benbunan-Fich, Adler, and Mavlanova 2011), and correlates with the prevalence of certain media and audience factors, personality traits and cognitive control abilities (or lack thereof) (Jeong and Fishbein 2007; Benbunan-Fich, Adler, and Mavlanova 2011; Sanbonmatsu et al. 2013; Kononova and Chiang 2015). However, the empirical findings presented in this chapter indicate that the decision process also involves an unconscious dimension, i.e. the informants often describe disruptive media multitasking activities as unconsciously performed impulses or reactions to some form of external or internal stimuli. The emerging trends presented here indicate that factors such as increasingly mixed experiences and

fragmented media routines, as well as habitual and addictive behavioral patterns can and should be viewed as predictors of media multitasking.

For example, the fact that mobile media is always present in the informants' everyday lives increases the opportunities for media multitasking in basically any situation imaginable. The mere presence of the smartphone is enough to trigger media multitasking activities, and as mentioned many times before, the smartphone is always present. As more and more everyday activities get mixed and entangled with media of some sort, the trend to increase media multitasking behavior is a quite natural consequence. Also, as fragmented media [multitasking] activities have become more and more routinized, such behavioral patterns have turned into an ordinary and almost expected part of the informants' everyday lives.

Many informants perceive their excessive media use and frequent media multitasking as annoying, frustrating, time-consuming and even detrimental at times. Compulsively and frequently checking the phone or social media is often perceived as interfering with many everyday activities, leading up to, for example, increased impatience, restlessness and impulsiveness, time management problems, sleeping and health-related problems and negative effects on performance in study-related tasks. In the later years of the study, especially, the reflections embrace more and more thoughts on media behavior that is perceived as bad, compulsive and addictive. Many of the informants express a wish to break their bad media habits and their perceived media addictions. However, breaking a habit or addiction is not that easy, and most informants do not seem to have appropriate strategies or tools for doing it. Furthermore, the unconscious dimension, manifested in a general unawareness of one's own media behavior, makes breaking disruptive behavioral patterns even harder.

6. EXPLORING DISRUPTIVE MEDIA MULTITASKING

This chapter builds upon the empirical findings presented in the previous chapter and aims to further explore the informants' relation towards disruptive media multitasking behavior and how this has developed over the time period of the study. By focusing on the exploration of questions like "how is media multitasking experienced?" and "why does media multitasking occur so frequently?" (inspired by the works of e.g. Aagaard 2019), we are provided with new perspectives on the trend of increasing disruptive everyday media multitasking among diginatives that prior cognitive research has overlooked.

First, four different categories (referred to as *profiles*) are presented as a means of distinguishing between different ways of relating to disruptive everyday media multitasking. The profiles are developed based on patterns recognized in the empirical data of how the informants experience and relate to their own disruptive media multitasking behavior. The profiles not only help us gain insights into different ways of relating to media multitasking, but also show that the relation can change and develop over time and according to context.

Second, three different categories of factors that predict or trigger everyday media multitasking are presented. These categories are developed based on the informants' own explanations for why they frequently engage in media multitasking that can be categorized and described as disruptive. As the explanations often involve a certain acknowledgement of the disruptive nature of media multitasking, the explanations are characterized as justifications, i.e. the informants show awareness of the fact that their behavior is disruptive (at times even destructive) but explain why they frequently engage in such behavior anyway. Third, a second aggregated theoretical dimension, *digital distraction*, is added to the data structure overview.

6.1. Observation: We all do it – don't we?

I can't help myself. Even though I know that I have a big deadline coming up and need to stay focused, every now and then I check my smartphone for updates concerning everything from what my friends have been up to on Instagram to what is happening in the world. I know this will disturb my concentration. I also know I will regret doing it afterwards. Still, I do it over and over again. I recognize the same pattern also among the informants in their media diaries. It seems we can never check our e-mails, or social media, or any other source of information too often. At the same time, I know more than most about the negative consequences of this kind of fragmented and disruptive behavior. I'm worried. We're all attempting to do more than our limited brains are wired to do, over and over and over again – everyday! This doesn't do us any good. Why do we keep doing it?

As a consequence of becoming aware of these disruptive everyday patterns, I have started observing them everywhere. One particular episode that struck me was when I

spent some time at the neonatal intensive care unit after the birth of our younger son. This is where I experienced a revelation on how contagious "bad habits", like checking your smartphone at any time and any place, can really be. There was a strict non-mobile phone rule at this neonatal intensive care unit. The first day I spent there, I carefully followed this rule and left my phone in another room to avoid the urge to take it out while sitting next to and caring for my newborn baby. Day two I did the same thing, but I started to notice that there were other parents who actually did have their phones in their pockets. A few days in, I started observing how they discretely took out their phones and used them to take pictures of their newborn babies. I observed how they uploaded those pictures on social media, and regularly checked their phones after that for likes, comments, etc. The first few days, I scowled angrily at these parents. This behavior was not acceptable! However, after about one week, I regretfully found myself disobeying the non-mobile rule while other "new" parents scowled angrily at me.

This kind of behavior goes against all logical reasoning. We were a group of complete strangers and nobody ever talked to each other about using the phones, we all just did, even though we were not supposed or even allowed to – for very good reasons. Why? Is there any reasonable explanation really? Are we addicted or bored to the degree that we can't live without our phones or social media? Or are we simply justifying our bad habits by claiming that everybody else is doing it too?

6.2. Media multitasking profiles

The media diary task has proved to be valuable for many different reasons. One major, quite unexpected benefit, is the fact that it served as an eye-opener for many informants, helping them to gain increased awareness of their everyday media behavior and giving them an unprecedented opportunity to reflect upon it. In particular for those informants who frequently engage in media and media multitasking, keeping track of their media use seemed to evoke an array of revelations, emotions, and thoughts. However, those who proclaim to be moderate or less active media users and multitaskers also found this exercise interesting and useful. The often quite surprising but helpful and profound insights gained from the diary task are mirrored in the informants' reflections that include strong emotional expressions and a wide array of variations concerning insightful thoughts on media use in general and media multitasking behavior in particular.

The MMI approach is often applied in media multitasking studies to make a distinction between heavy and light media multitaskers based on their reported media use in an elaborate questionnaire (Ophir et al. 2009; Baumgartner et al. 2016). The MMI approach has not been used in this study and no categorization is made based on the extent or content of perceived or reported media use. Rather, the categories or

profiles[35] presented here emerge from patterns identified in the empirical data related to how the informants relate to their own disruptive media multitasking behavior. Four profiles are identified, representing different ways to relate to disruptive everyday media multitasking as expressed in the diaries: 1) *the good*, 2) *the bad*, 3) *the ugly*, and 4) *the proud*. The categorization does not concern the quality of the reflections, nor is it a way of judging or ranking the reflections in any way.

6.2.1. The good

Reflections in this profile portray a sound relation to [disruptive] media multitasking. Many informants describe problematic and distractive media patterns prior to the study, and how they have taken deliberate actions to reduce and control such activities. They do engage in disruptive media multitasking, but most often such activities, as well as media use in general, are expressed in terms of a certain degree of control, awareness, and moderation:

> I consciously started to cut down on my media consumption in the fall, and this was the perfect assignment for me. I saw no surprises at all in my diary now. […] I still use a bit too much time watching NFL which means that I sleep only 5-hour nights between Sunday and Monday, and sometimes Thursday and Friday, but as long as the negative consequences of my media use are manageable, I chose not to stop doing it. (Isak, 18, 2016)

> While I watch TV, Netflix or play games, I also use my phone for mobile games or chatting. […] But this is hardly surprising. I'm well aware of how much media I use, and that media is all around me most of the time. I can take a break from it whenever I want to, I simply leave my phone in another room or at home. (Isabella, 22, 2018)

> What surprised me the most was how much time I actually spend on schoolwork. While I check social media (maybe a bit too often) in other situations, I can sit for hours doing schoolwork without getting distracted by social media. (Matilda, 20, 2019)

For this profile, the decision whether to engage in media multitasking or not is described as deliberate and purposeful. Media multitasking is perceived as a natural

35 The term profile is used here more or less interchangeably to the term category and does not imply any particular methodological approach or classification according to personality traits or media consumption patterns.

part of everyday life, without any further need to change such media-related behavior. Some informants even express confidence (verging on overconfidence?) in their multitasking abilities and stress the importance of this competence, for example, in future working world situations. However, some also highlight being able to regulate one's media multitasking behavior as a valuable skill:

> It is said that our generation are "multitaskers", i.e. we can focus on several things at the same time. I notice that this is true as it is no big challenge for me to use several media simultaneously. Sometimes I have my computer in my lap, the TV on and my phone in my hand and I can still follow, at least to a certain degree, what happens on all of these. (Tua, 20, 2018)

> I don't see multitasking as such a bad thing, rather I see this is as a good competence that I will probably need also in the future whenever I need to get many things done during a short amount of time. (Benjamin, 21, 2018)

> I have started to focus my social media "surveillance" to one specific time of the day, instead of checking what happens there every now and then throughout the day. In this way, I can keep up with what happens without missing out on something else. This helps me to be more effective, and I think I will benefit from this in my studies as well as at work. (Malin, 21, 2019)

> I have some days when I simply don't want to look at my phone, play TV games or watch movies, just spend time doing real things with real people. I think it's a good thing that you are aware of the fact that you really don't need to be glued to your screen all the time. I think this will be a good skill to have in the future, also. (Mikael, 20, 2019)

This category is characterized by a certain degree of control, or agency, and an outspoken intention to (re)gain control over media multitasking activities so as not to get "lost" in such behavior. Some informants even take an active stance against multitasking, making a deliberate decision not to engage in behavior which is perceived as disruptive. In general, the media diary task also seems to have led to increased active efforts to cut down disruptive media multitasking behavior:

> A positive thing I noticed is that I don't use my phone as much as my friends. I get frustrated with my friends when I try to talk to them, but they won't listen since they are glued to their phone. I made a decision to stop doing exactly that about a year ago, and since then I haven't really used my phone that much. Nowadays, I don't feel any need to take it out unless I need to call someone. In my opinion, some of my friends should do the same, at least put away the phone when they spend time with others. There's nothing more disturbing than trying to talk to a person who is more interested in his/her screen than me. (Mirella, 21, 2016)

> I strive not to use more than one medium at the time in order to concentrate 100 % on what I'm doing. It's quite nice to be able to do that. (Thomas, 24, 2017)

> I was positively surprised to see that I no longer surf many different sites at the same time before going to sleep. I have noticed how this helps me sleep. I used to have problems with sleeping. (Robin, 25, 2017)

> After this diary task, I will cut down on my social media use. Instead of using several media at the same time, I will allocate one hour per day for checking social media; the rest of the time I will try to go out and meet more people. (Alexander, 19, 2019)

> I have actually started thinking about the effects of using several media simultaneously on my ability to concentrate. I have identified critical situations when I usually do this, and I'm now trying my best to use only one thing at a time. It feels great. Now I also see how bad the "excuses" I used to give for this behavior really are. I realize that "to calm me down" is not a reasonable justification for watching YouTube for three hours while also doing a lot of other stuff. (Noah, 21, 2019)

This is not the most prominent of the identified profiles, but a slightly increased awareness can be recognized among the informants in later years, when comparing the diaries of the last few years to the earlier ones. Also, while this may still seem a far-fetched dream for some, many informants throughout the years express a wish for a positive, controlled and moderate relation to media multitasking such as this profile entails.

6.2.2. The bad

This is undoubtedly the largest category identified, embracing a more negative and problematic relation with media multitasking. Reflections categorized in this profile include a large portion of surprising revelations of unconsciously performed media multitasking activities. This is perceived as a source of distraction in different everyday activities, and generally considered "bad habits" or "bad behavior". Several reflections include emotional expressions of fear, alarm and frustration related to one's own disruptive media multitasking behavior:

> […] this has turned into an unhealthy habit that I can't seem to break. Thanks to WhatsApp, you stay in touch with your friends constantly; it's so easy to just start a conversation in a group chat, and suddenly you realize that you have been chatting for more than an hour and have no recollection of what else you have been doing at the same time. It's actually a bit frustrating. (Annika, 20, 2016)

> Another thing I want to point out is how much time I spend doing unnecessary things every day, like constantly checking my phone. I surely could do something more productive instead. […] I noticed that when I check Instagram and then close the app, in 2 minutes time I'm there again even though nothing new has happened. It's like an impulse I can't stop, and it's scary. (Markus, 20, 2019)

Furthermore, in this profile, many informants reflect upon media multitasking as activities that steals their time which could be used for other, more productive purposes. Some informants also acknowledge disconcerting effects on their ability to focus, on the quality of study-related work and on social encounters:

> Shit, I spend too much time on this shit! This is my spontaneous reaction to my own media consumption. (Eva, 19, 2014)

> When I was doing schoolwork at home, I realized I suddenly took out my phone and lost my concentration. Using several media at the same time is really not good for my ability to concentrate. (Linn, 20, 2017)

> […] you easily become distracted by your phone because it's so easily available. I have noticed several times during the week that I automatically take out my phone while I do other things, not because I really need to but just because I'm so used to it. (Marko, 19, 2019)

> A big problem is that we often spend time in applications on the phone when we are also spending time with other people. It might feel stupid not to be 100 % present just because you watch something on your phone while talking to somebody. (Jonas, 21, 2019)

Some reflections in this profile deal with failed attempts to take control over perceived excessive and problematic media use and disruptive media multitasking activities:

> Sometimes I multitask. I check the news on TV while scrolling on my phone. I try to avoid this since, when media multitasking, you are not really focused on anything. I haven't succeeded, though. (Carina, 23, 2018)

> My new year's resolution was to use social media less and do more sports and read more instead. I can tell you the year has not started well for me… (Emelie, 19, 2019)

While some informants have tried to cut down, others express an unwillingness to even try, regardless of experienced negative consequences of disruptive media multitasking. Instead, they justify their bad habits and problematic media behavior with more or less reasonable or logical explanations:

> I guess I could try to cut down, but as I'm part of a generation that was born into this world with media everywhere, and therefore, I think it's only reasonable to be surrounded by media all day long. (Martti, 20, 2016)

> I definitely use several media simultaneously, and I do it frequently. For example, I always check my phone whenever I watch TV. However, I recently heard about the use of "primary media" and "secondary media". This is a good way to explain what I'm doing. The TV is the "primary media" since it's bigger, and whenever the movie becomes boring, I check my phone for updates to see if anything interesting has happened. Since the phone, then, is only the "secondary media", I don't consider it as real media consumption. (Wille, 21, 2017)

> I use media a lot, and I also often use several media simultaneously. I was surprised to see that the total amount of time spent on media every day reached 5–8 hours. At first this seemed scary, but then I realized that part of this media use is for my studies and reading news, and that made it better, because then it's not really media anymore. (Elias, 20, 2018)

This profile, characterized by a quite problematic relation to media multitasking and questionable rationalization of disruptive media multitasking activities, has been the most prominent of the identified profiles in the diaries throughout the years of the study. Still, the past few years have seen a noticeable growth, as in 2018 and 2019 considerably more reflections were categorized in this profile compared to earlier.

6.2.3. The ugly

The reflections in this profile are characterized by a highly problematic relation to media multitasking and media use in general. These reflections are more detailed and more expressive than the reflections in The Bad profile. They illustrate a relationship with media and media multitasking that clearly affects different parts of the informant's everyday lives in a serious and disruptive way. Reflections here deal with severe distractions and loss of focus in learning situations, frequent procrastination, health issues, addictive behaviors, withdrawal symptoms and anxiety. Furthermore, while the informants expressed concern and fear in the previous category the reflections here are related to shame, guilt as well as feeling mentally and physically ill:

> I never would have believed that my daily media use would be this extensive. Realizing this made me physically ill. It would almost have been easier to indicate in this task when we are NOT using media. However, that would be equally scary since you still have to count the hours then when you do use it. (Anton, 20, 2015)

> I use media every minute of the day. I chat, I snap, I read news, I look for apartments, I look for inspiration, I look for jobs, etc. I can admit I'm completely addicted to my phone. Still, it was with shame I filled in the diary. I wish I would do something better with my time! It worries me that I don't know what to do if I don't do all of this. What scares me even more is that this is only the tip of the iceberg concerning technology and we are already this addicted. What will the world look like in only 2 years? […] (Marie, 24, 2018)

> Something "funny" happened to me today. I guess this happens to many others, too. I realized I opened the same social media app that I had closed only 30 seconds ago. It's just impulsive behavior that I can't control. I feel "grossed out" by my own behavior. (Wilmer, 23, 2019)

As demonstrated in the previous chapter (see section 5.5), self-perceived media addiction is a prominent emerging trend among the informants. Most of the reflections dealing with perceived addictive tendencies and patterns are categorized as part of the ugly profile, especially since they often include contemplations on quite severe withdrawal symptoms and negative consequences on studies, for example:

> It's scary to see how addicted I really am to media. My phone is close by 24 hours a day, and my computer comes in second place. At home, I constantly use my phone as well as my computer. Sometimes the TV is also on even though I don't really watch it. I could live without the TV, but the mere thought of being without my phone or my computer gives me anxiety. (Minea, 22, 2017)

> I tried to study, but instead I got caught up in Netflix and ended up watching a stupid Netflix-series on my computer all week long. I had to do all my schoolwork on Sunday night and didn't have enough time to properly do everything then. (Ellen, 21, 2016)

> My severe addiction to social media on my phone interferes with my studies. I should read and focus on school instead of just checking social media all the time. (Adam, 21, 2016)

> I have noticed I have a hard time concentrating. For example, during a lecture I often feel that social media is more interesting than what the lecturer has to say. I guess my brain is on overdrive trying to process information and that's why I can't focus during lectures anymore. (Emil, 21, 2019)

However, it is not only in learning environments that the informants feel restless or easily distracted. A general feeling of restlessness and impatience as a consequence of frequent media multitasking is something that many informants are concerned about, especially since this is perceived as a quite novel phenomenon that they have not

experienced before. Furthermore, many informants also express concern related to negative consequences on mental and physical well-being:

> I honestly went into shock when I did this diary. Whaaat? Do I really use my phone that much? I always thought I was a moderate media user, but now I see I'm addicted. I also realize my brain is not capable of keeping up with this constant concurrent media use. Some days, I feel like my brain is on overdrive and I can't find any peace and quiet. Some days I feel slow and can't seem to remember important things. This was a real eyeopener to me. I need to calm down and start taking it easy without involving my phone. (Mia, 20, 2016)

> It was difficult to do the diary since I use media so much all the time every single day. Sometimes I get so restless I forget I just checked Facebook and Instagram only a minute ago. Yes, I get updates from family and friends, but this can also be really hard. First, I feel a pressure to always share my life with everybody. Second, I get stressed by seeing how active everybody else is. […] I didn't realize how stressful it really is before I went on a trip abroad where I had no access to Internet. It was a place where I could truly relax. (Amanda, 19, 2017)

> Mobile use has become a natural part of my morning routines. However, this is not always a good thing and I will at least try to cut down on my social media use. Social media makes me feel a little bit psychologically ill. That's not a good start to the day. (Brita, 23, 2019)

> I have a bad habit of using different media like Netflix and YouTube to help me fall asleep at night. Now I can't fall asleep without them at all, and I have noticed that I sleep uneasily and feel that I don't get enough sleep at all. (Oskar, 21, 2019)

Also, in this profile, an aspiration to take control over this type of disruptive and detrimental behavior is frequently expressed. However, most informants do not know how to break their bad habits or reduce their addictive behavior. While diaries in the earlier years of the study did not embrace many reflections within this profile, the years 2018 and 2019, in particular, witnessed a drastic increase in these "ugly" reflections. This recent upswing resulted in this profile being the second most prominent one.

6.2.4. The proud

Parallel to the trend of drastically increasing "ugly" reflections in 2018 and 2019, a concurrent positive trend of increased awareness and actions for regulating and managing excessive and problematic media use can be identified. This profile represents a positive relationship towards media multitasking, stemming from (often quite recent) deliberate actions taken to break and change media behavioral patterns that previously were perceived as highly problematic. The reflections in this profile

include thoughts on what have been done, and suggestions for what can be done to break damaging habits or self-perceived addictive behavior. The informants express their personal stories of success with a sense of pride, joy, relief, and accomplishment:

> I have no electronics in or near my bed; this is my free zone. I bought an alarm clock so that I don't need my phone for that, and therefore I don't need my phone by my bed anymore. I work out without my phone, I sail without my phone, and I read without my phone. I also try to leave my phone in my bag whenever I spend time with family and friends. It's such a relief to be without it! (Fredrika, 24, 2016)

> One thing that I'm proud of is that I always turn off my phone when I got to bed now. I leave the phone in another room, so I'm not tempted to start multitasking. I started doing this last year since I had trouble sleeping and now, I sleep much better. I have a regular alarm clock so no need for the phone. I think everybody should test this. (Jonas, 22, 2018)

> Another observation I made was that my routines have become better, which is a positive surprise. I haven't scrolled around in social media during the night or right before falling asleep. This is really positive, since I used to have the bad habit of taking out my phone while in bed, which led to me falling asleep much later. […] I have been able to cut down on "meaningless scrolling" in other situations, too, and I have to admit I feel more creative now. (Alex, 25, 2018)

> Another thing I noticed this week is that I don't use my phone while I'm with friends or while I eat, for example, in school. I only use it if I need to call or send a message to someone. I'm proud of this. […] I'm also proud of my media behavior during my trip to Tahko, where we were skiing with my friends. I hardly used my phone at all during these days, only for taking a few pictures. (Ralf, 21, 2019)

> I have tried to cut down on my social media use for a long time. It has been hard, and I now see that I still use WhatsApp and Snapchat quite a lot. However, I have managed to cut down on using Facebook and Instagram. What I did was that I deleted them from my start screen, now when I activate my mobile, I don't feel the urge to check Instagram. (Reino, 21, 2019)

> I'm almost proud of how little time I spend on social media. I deleted my Instagram account and very seldom use Facebook. This past week I didn't open Facebook even once. (Riku, 22, 2019)

> I want to emphasize the fact that I seldom use my mobile or my computer during lectures, since I easily get distracted if I do. I realized that I miss out on a lot if I get distracted and have a hard time following what the lecturer has to say. (Emilia, 19, 2019)

The most common way of avoiding media multitasking is to try not to take out or use one's mobile phone in certain situations. Leaving the phone outside the bedroom when going to sleep, especially, seems to be an effective way to reduce harmful behavioral patterns and effects. The positive trend linked to this profile has witnessed considerable growth in 2018–2109. However, there is an alarming aspect to this profile that needs to be acknowledged. In this study, a proud relationship with disruptive media multitasking always originates in media [multitasking] behavior experienced as damaging; it is a reaction to media behavior that has become uncontrollable. Whenever the informants experience their media behavior as problematic, they start taking actions to change their problematic behavior. However, very few informants have proactively taken actions to limit and control their disruptive media multitasking activities or excessive media use.

6.2.5. Thoughts on profiles

The four profiles presented above represent *four different ways of relating to disruptive media multitasking*. The profiles have emerged from recognized patterns in how the informants experience and relate to their own media multitasking behavior in the media diary study. Table 7 (see p. 141) illustrates the profiles and their main characteristics. As seen, The Good and The Proud both illustrate a positive and controlled relationship, whereas The Bad and The Ugly mirror a negative and uncontrolled relationship with disruptive media multitasking. Compared to The Good and The Bad, The Proud and The Ugly embrace a more extreme way of relating to and expressing positive or negative emotions and consequences related to disruptive media multitasking activities.

In general, a considerably larger proportion of negative relationships are described in the diaries, and reflections categorized as bad have consistently outnumbered reflections categorized as good. Still, these categories have remained quite consistent throughout the years. The Ugly and The Proud, though, have seen a noticeable upswing in 2018–2019. This may partly be a consequence of the altered diary instructions in 2017. However, the reflections related to the emerging trends of routines and addiction (not directly affected by the altered instructions) have also seen a similar development. Overall, it seems the reflections have become more elaborate and expressive in later years. This change mirrors the concurrent increased awareness and debate on the drawbacks of excessive social and mobile media use and media multitasking in our society on the whole (see e.g. Cheever, Peviani, and Rosen 2018; Waytz and Gray 2018; Dhir et al. 2018; Keles, McCrae, and Grealish 2019).

Table 7. Overview of identified media multitasking profiles

The Good Represent a sound relationship with media multitasking. Engagement in [disruptive] media multitasking is controlled, deliberate and moderate.	**The Bad** Represent a problematic relationship with media multitasking. Engagement in disruptive media multitasking activities is often unconscious. Media multitasking is perceived as distractive, time-stealing and as having negative consequences on studies and social situations.
The Proud Represent a sound relationship with media multitasking, rooted in recent actions taken to break and change prior problematic media multitasking behavior. Disruptive media multitasking activities are deliberately managed and controlled using different strategies.	**The Ugly** Represent a highly problematic relationship with media multitasking. Engagement in disruptive media multitasking activities is perceived as addictive, having severe consequences on the ability to focus, managing time, sleeping and general well-being.

The profiles presented here help us to better understand diginatives' quite complex relationship with media and media multitasking; while many perceive their relationship with media multitasking in positive, sound and fairly moderate terms, the majority of the informants have, at some point, perceived media multitasking as disruptive and negative, along with an array of quite alarming consequences. The study indicates a noticeable increase in expressed negative relations and effects in later years. At the same time, there is a recognizable increased awareness of such negative relationships and effects, which has triggered the parallel trend of finding new ways to manage perceived problematic media behavior.

What is important to acknowledge is that individuals are not assigned to any one of these profiles by default. Someone who may have experienced a bad or ugly relationship with media last month, last week or even yesterday, could have taken the necessary actions and moved towards a more positive relationship today. Just as easily, that person could fall back into a more negative relation tomorrow, next week or next month. The relationship may also vary throughout the week; some days the relationship may be perceived as negative, whereas other days it may be perceived in a more positive manner. Such changes may even occur several times every day, due to, for example, moving between different contexts and social situations. This notion highlights the fact that everyday media multitasking is always contextually embedded. There are many different factors, not only personality traits or one's currently experienced relationship with media, that affect the underlying decision process in everyday media multitasking.

6.3. Disruptive media multitasking: Descriptions and justifications

The present study aims to broaden our understanding of diginatives' frequent engagement in disruptive media multitasking. In addition to exploring their expressed relationship with such activities, the reasons mentioned for why they engage in these activities are therefore also explored. In this section, three main categories are presented, rooted in the informants' own explanations for why they frequently engage in disruptive media multitasking: 1) *unintentional everyday activities*, 2) *technology-induced interruptions*, and 3) *contextually embedded behavior*.

Several quotes in the previous sections illustrate explanations for what triggers everyday media multitasking and the reasons why the informants, more or less intentionally, engage in such disruptive activities. This chapter embraces these previously mentioned quotes and the general patterns emerging from the empirical study according to the above-mentioned categories. As already established, the explanations in the diaries often include some level of acknowledgement of the disruptive nature and negative effects of media multitasking activities (see, for example, The Bad and The Ugly profiles). Since the informants are aware of the negative effects, the explanations can be characterized as justifications. This section summarizes a wide array of expressed reasons that in one way or another are perceived as justifying the informants' frequent engagement in disruptive (at times even destructive) media behavior.

Overall, quite similar explanations reoccur in the diaries over the years; no major changes or developments can be detected in how disruptive media multitasking is explained or justified. However, in line with the adjusted diary instructions and the general increase in awareness of the drawbacks of media and multitasking, again, the reflections in later years are more extensive and expressive.

6.3.1. Unintentional everyday activities

Most often perceived benefits of media multitasking such as staying updated, being available and keeping in touch with friends and family outweigh any perceived or expressed disruption. Also, a general feeling of accomplishment, effectiveness and timesaving, achieved by doing several things simultaneously, is also mentioned as an important reason. Listening to music or podcasts as a means of helping the informants focus is a very common activity; the music serves as a *"distraction" that helps to prevent other distractions. As many* informants have recently moved away from home, background music or "noise" also helps them avoid the feeling of loneliness and perceived uncomfortable silence:

> Sometimes I feel it's "embarrassing" to be alone and just sit there and stare into the emptiness. It's weird, I know, but this makes me want to fill my time with media and media multitasking in order not to feel lonely and embarrassed. (Dorrit, 20, 2016)

> I often use several media simultaneously. For example, the radio is always on in the background in the morning while I scroll through Facebook and Instagram. It's gives me a nice and "cozy" feeling to half-heartedly listen to the radio. (Erna, 22, 2017)

Furthermore, media multitasking activities are often engaged in for pastime or entertainment purposes. For example, it is experienced as a convenient way of relaxing at home, a preferable pastime activity when taking breaks while studying, a reward, or a way of simply killing time while waiting for someone or something. These explanations all resonate with the idea of engaging in media multitasking activities as a response to a recognized personal need or demand. However, while media multitasking is sometimes described as an intentional and controlled activity, it still seems that a large portion of the informants' everyday media multitasking is performed automatically and unconsciously. The reasons behind this type of behavior is more difficult to explain. For example, the unintentional nature of disruptive media multitasking activities can be recognized in the way that many informants express genuine surprise related to their own observed behavior:

> I have never before realized how often I take out my phone to check Facebook or Instagram while doing something else. It happens so often that I actually don't even check anything. I only open the app to close it again a moment later when I realize I just checked the same things only a few minutes ago. (Erin, 20, 2013)

> I never think about it, but I automatically pick up and check my phone so many times every day. I do it when waiting for the elevator or standing in line to buy food. Suddenly, the phone is in your hand and you're standing there scrolling through Instagram and Facebook. (Albin, 20, 2019)

While many have not elaborated their thoughts on disruptive effects of their own media behavior in the diaries, some reflections do address this particular issue. For example, the identified trend of increased expressed feelings of restlessness and the constant aspiration to avoid being bored are reasons frequently mentioned as triggers for impulsive media multitasking. Furthermore, many informants highlight the habitual or addictive nature of media multitasking as a trigger for impulsive media multitasking. It seems that a very common explanation for engaging in disruptive media multitasking activities is a sense of not being entirely in control of one's own media behavior. This is experienced as scary and frustrating but, still, many informants justify the continuation of such behavior by not really knowing what to do

about it, by stating that this is "the new normal" or by the fact that everybody else is doing it, too. The majority of the informants seem to lack appropriate strategies for (re)gaining control over this type of media use.

6.3.2. Technology-induced interruptions

While the previous section deals with more or less uncontrolled self-induced distractions, triggered by consciously or unconsciously recognized needs, this section embraces disruptive media multitasking activities triggered by external technological cues. The constantly increasing availability of technology and access to the Internet is a major contributing factor in the decision process of whether or not engaging in disruptive everyday media multitasking. As mentioned, the presence of a smartphone, especially, increases the likeliness to engage in such behavior. In later years, the smartphone has grown into a natural extension to the informants, and without it they feel lost. In line with this, the acquisition of a new device or downloading or starting to use a new digital service or application are factors that seem to have a substantial impact on the informants' propensity to engage in disruptive media multitasking, at least for a certain amount of time. Trying something new and widening one's horizons, networks or skills is used as justifications for (however temporarily) getting completely lost in [disruptive] media:

> I recently found Soundcloud and I have been actively using this social medium all week long. I will soon release a new EP and I wanted to attract a few new followers to my Soundcloud page. I'm intrigued by the thought of someone that is fairly big in their genre in Australia would find and like my music. However, I think I got a bit too excited; I have been on Soundcloud so much this week I couldn't really concentrate on the schoolwork that I tried to do at the same time. But I'm always like this when I find something new and exciting online. (Edvin, 22, 2013)

Reasons given for why mobile devices, platforms, services and apps lead to engagement in often unintentional, disruptive media multitasking are the constant availability and convenience:

> Today, it's very easy, almost too easy, to access everything on your phone since the Internet connection works swiftly, and the phone is light and convenient to carry around. You can access most pages that you want to access, and it has never been more convenient to get the information you want. However, sometimes this also means you get easily distracted by your phone. (Rasmus, 19, 2019)

Furthermore, technology also affects media multitasking activities through notifications. This has led to an almost compulsive-like checking behavior among many informants, disrupting anything else they are doing at the moment of the notification:

> Push notifications constantly distract my concentration, especially when I'm in a lecture or trying to study for an exam. They make it really hard to maintain focus on my studies. […] Still, I have a really hard time imagining my day without these; I am so used to constantly getting news and updates this way. (Elina, 24, 2018)

> 80 % of my media consumption is done with my phone. I realized you can track the amount of notifications you get on your phone, so I did that. The information was frightening! It's unbelievable that I get about 200 notifications every single day!! What if I give into the impulse of checking all of these notifications and end up getting caught in the screen for half an hour every time… There are so many other things I could do in the real world! (Åsa, 21, 2019)

Similar frequently repeated checking-behavior is also reported as a result of anticipated reactions online, e.g. likes, comments or other types of engagement in social media. Again, engagement in disruptive media multitasking activities triggered by technology in one way or another is explained and justified by the informants by the fact that this is natural and expected behavior for people of their generation. They are expected to be online 24/7 and always available, which drastically increases the likeliness to become distracted and caught up in disruptive activities. Furthermore, the anticipation involved in receiving a notification is often enough to trigger instant distraction in almost any context.

6.3.3. Contextually embedded behavior

As illustrated by the observation earlier, pertaining to contagious, bad smartphone behavior at the neonatal intensive care unit, considering and acknowledging cues in the environment is a crucial part of gaining a better understanding of why the informants frequently engage in disruptive everyday media multitasking. Had it not been for those other parents who "started it", I probably would not have taken out my own phone; their presence in that specific context triggered my inappropriate media behavior. We need to consider the fact that media routines and everyday media multitasking always seem to be contextually embedded. Some contexts increase the likelihood of engaging in disruptive media multitasking, whereas others have an opposite effect. This becomes particularly clear when analyzing the informants' described everyday media routines. For example, their homes have become a natural commonplace for media multitasking. Particularly in the mornings and evenings, media multitasking is performed in a very routine-like manner, often intertwined with other everyday activities and routines. Similar patterns can also be recognized in other contexts, for example, at university, while traveling somewhere by bike, car, bus or train, at the gym, at hobbies, etc. These patterns are seldom reflected upon in the diaries (for other reasons than their surprising uniformity; see e.g. section 5.4.). However, contexts and contextual factors that in some way disrupt these mundane everyday media patterns are often mentioned and reflected upon.

For example, special occasions such as vacations and other travels or participation in parties or other events have a fundamental impact on the informants' media use and propensity to engage in disruptive media multitasking. Most often, these types of special occasions noticeably decrease the informants' media multitasking. Other factors that decrease disruptive media multitasking include variation in perceived workload connected to work, studies or exams and intensive periods related to interests and hobbies. However, in some cases, increased stress or workload also led to more engagement in media multitasking, resulting in procrastination. Similarly, health-related issues also had a varied effect:

> This week was not the best for me to track my normal media behavior, since I slept extremely badly. I woke up several times every night and overslept almost every morning. This affected my media routines I usually do in the mornings. (Ingmar, 26, 2019)

> Towards the end of the week I got sick, which altered my media consumption a lot compared to how I normally use media. First, I was too sick to have anything to do with media. Then, I was too tired to do anything but media. (Mats, 21, 2018)

Explanations or justifications were rarely mentioned as part of altering media use due to special occasions; most likely because these occasions are perceived to have a positive (decreasing) effect on disruptive media multitasking activities. What these occasions often have in common is that they are social situations involving people. People in the immediate environment, irrespective of whether they are friends, family, relatives, partners, classmates or even random people on the bus, at the supermarket or at the gym, are in general perceived to affect informants' disruptive media multitasking behavior, most often in a positive way. There is a tendency among the vast majority of the informants to prefer face-to-face interactions to communication online or media multitasking. While digital interaction seems to become a more prominent feature in face-to-face interactions, also (see section 5.3. on materiality and mixed experiences), there is an expressed wish and longing among the informants to be more present and less connected and digitally available in such social situations.

Still, some people also have a negative effect and seem to trigger rather than obstruct distractive media multitasking. For example, group pressure and overall expected "norm" of being constantly online and available among surrounding people is one trigger that is often mentioned and reflected upon. Similarly, new living arrangements with long-distance relationships or new partners and roommates seem to have a significant impact on the informants' media use and routines, too. Sometimes it is perceived as positive, but often as negative in the sense that media is used more often. In the latter case, the increased media use easily leads to increased disruptive media multitasking. This is most often justified by the mere acceptance that there is nothing really one can do about it but adjust to new disruptive routines.

6.4. Digital distraction in an everyday context

Summarizing the empirical findings presented and discussed in this and the previous chapter, these indicate similar everyday media multitasking patterns and perceived consequences among diginatives also found in and established by prior empirical research (see e.g. Carrier et al. 2015; van der Schuur et al. 2015; Aagaard 2015; May and Elder 2018). However, a few key issues need to be addressed that 1) particularly stand out in this study and/or 2) diverge from prior empirical findings. For example, this empirical study indicates that a large portion of the described everyday media multitasking activities are:

1) *unintentional*, i.e. performed in an uncontrolled and often impulsive, if not even compulsive and habitual manner, in response to consciously and/or unconsciously identified needs or triggers;
2) *technology-induced*, i.e. triggered by digital notifications, anticipation of online responses or reactions, or the mere presence of mobile devices;
3) *contextually embedded*, i.e. induced by external non-technological triggers highly affected by the context itself, particularly by people and social situations.

The first two of these categories partly correlate with the traditional distinction between self-interruptions and technology-induced interruptions and subsequent multitasking or task-switching behavior (e.g. Carrier et al. 2015). While this distinction is relevant and quite easily studied in cognitive laboratory studies, the complex underlying decision process in an everyday context can embrace multiple tasks, numerous external cues as well as internal responses and interruptive tendencies. The decision of whether or not to engage in disruptive media multitasking in an everyday setting entails a high degree of flexibility and different levels of conscious as well as unconscious prioritization (Carrier et al. 2015). The unconscious or unintentional dimension, especially emphasized here, challenges us to search for new ways of approaching, studying and theorizing within the everyday media multitasking field (Baumgartner et al. 2014). For example, factors such as habitual media behavior, addictive media behavior and increasingly mixed everyday experiences, all indicating some level of uncontrolled behavior and unconsciously performed everyday activities, need to be considered.

Furthermore, this study suggests that media multitasking behavior often varies considerably according to, for example, social and situational factors and special occasions. This contextual dimension of everyday media multitasking is most often overlooked in cognitive research (Carrier et al. 2015). For example, the MMI approach neglects individual and situational variations, which is essential in media multitasking research linked to the everyday settings (Watson and Strayer 2010). While the vast majority of studies rate diginatives as heavy media multitaskers (e.g. Carrier et al. 2015; May and Elder 2018), the issue of individually varying patterns from day to day is not acknowledged. Therefore, results from MMI studies do not correlate with results in other types of media multitasking studies where, for example, media diaries

or observations are used to assess behavioral patterns or profiles (e.g. Rosen, Carrier, and Cheever 2013; Baumgartner et al. 2016).

The contextual embeddedness highlighted here, especially, is a key entry point into a better understanding of why diginatives engage in disruptive media multitasking in the first place, and why they continue doing it regardless of the experienced negative consequences. The notion of contextual embeddedness suggests that preconditions and responses to certain cues can vary dramatically in different contexts. The context itself can trigger disruptive behavior, but people and elements in certain contexts can also have an opposite effect. Whether media multitasking is perceived as distractive or not is also affected by the context. This is mirrored in the identified profiles and the notion that one can "move" or shift between these profiles. Sometimes such a shift is undeliberate and goes largely unnoticed (e.g. a shift from the good to the bad as a consequence of a new device or newly embraced social media application), whereas other times the shift can require much work and determination (e.g. a shift from the ugly to the proud).

This propensity of individuals to adjust and relate to disruptive media multitasking differently in different contexts suggests that the experience of a certain media multitasking activity may vary in different situations. For example, checking social media on one's mobile while engaging in a social situation may be perceived as distractive if the social situation itself feels interesting, whereas the same activity in a social situation that is experienced as uncomfortable may seem a welcomed distraction, almost a relief. Whether this activity is triggered by an internal need of having something to do, by an internally experienced compulsion to check one's phone for updates or by a notification becomes irrelevant. The notion of whether the activity is performed deliberately or unintentionally is more important; the study indicates that unintended media multitasking activities are more often perceived as disruptive, no matter what triggered them in the first place.

According to Aagaard (2019), the question of whether media multitasking is distractive or not has become irrelevant. He even suggests that the word multitasking could be replaced by the word *distraction* since we can establish the fact that multitasking really means distraction. This study contradicts Aagaard as it acknowledges that the activity of media multitasking itself is perceived differently in different situations, and that the same activity and its outcome can be perceived as disruptive, even destructive, in certain situations and as a welcomed distraction in others (but a distraction nonetheless). This indicates a need for increased awareness of one's behavior in different contexts and strategies for handling distractions in the situations where these are experienced as problematic. To further explore the empirical findings, the aggregated theoretical dimension of *digital distraction* has been added to the data structure overview (see Figure 5, p. 149).

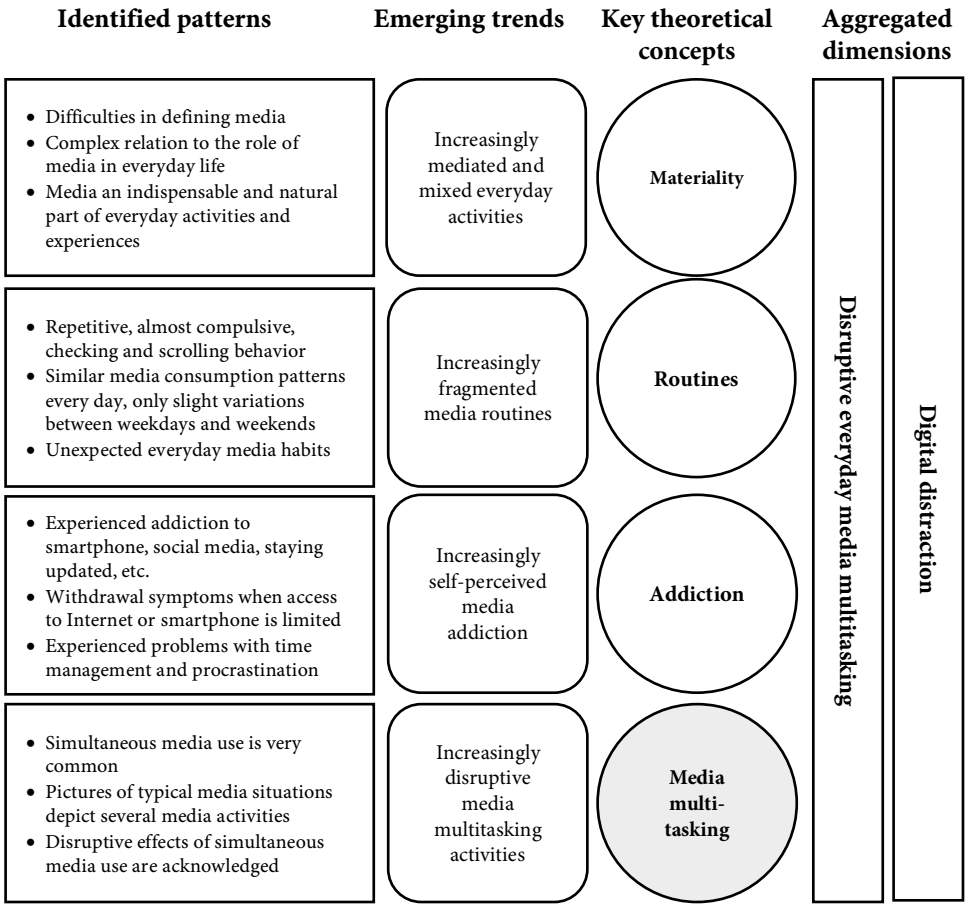


Figure 5. Final data structure overview

While the term digital distraction is frequently used in media multitasking research, there seems to be confusion related to the definition of this concept. Aagaard (2015; 2019) suggests that digital distraction is more or less equivalent to the concept of media multitasking, whereas Carrier et al. (2015) refer to digital distraction as what is defined as technology-induced interruptions in this study. Here, digital distraction is defined as the consequence of everyday media multitasking activities, which are perceived as disruptive and problematic by the person engaging in the activity. The following two questions, which arise in consequence of this definition, are explored next:

1) If media multitasking is performed based on a deliberate decision and the disruptive consequences are known, why do diginatives frequently keep engaging in activities resulting in digital distraction?
2) If media multitasking is performed unintentionally and the disruptive consequences are perceived as highly problematic, how can diginatives cope with digital distraction?

7. UNDERSTANDING AND COPING WITH DIGITAL DISTRACTION

The main obstacle to a clear understanding of the effects of the new media is our deeply embedded habit of regarding all phenomena from a fixed point of view. (McLuhan and Fiore 1967)

As brought forward in this study, new perspectives are needed to advance our understanding of disruptive media multitasking. It is clear that prior empirical evidence and theorical perspectives are insufficient in embracing the complexity of such activities in the everyday context. Therefore, the aggregated theoretical dimension of digital distraction is explored and discussed further in this chapter in light of the empirical study and the literature review presented earlier (see chapter 4).

Rooted in the empirical findings, and influenced by the literature review, a new cross-disciplinary conceptual framework is developed, embracing "old" as well as "new" dimensions essential for advancing our understanding of digital distraction in the modern volatile media landscape. Digital distraction is located at the very core of this framework, embracing disruptive everyday media multitasking activities and the underlying time allocation and prioritization decision. First, the argumentation takes the following steps: first, the characteristics of digital distraction and media multitasking activities are discussed from an Activity Theory perspective, defining the concepts of activity and distraction, exploring the relation between these and highlighting a few key issues that need to be considered when aiming to understand digital distraction. Second, a new conceptual framework is presented, and each dimension of digital distraction as defined in the framework is discussed. Third, the concept of digital metacognition is introduced as a structure for coping with digital distraction.

7.1. Observation: Like a kid in a candy store

In January 2019, I attended a lecture on wellbeing and healthy habits, held by Lovisa "Lofsan" Sandström (one of Sweden's leading experts, authors and social media profiles on exercise and health). I made two important revelations during this lecture. The first revelation relates to my own behavior whenever I find myself in a room full of people, especially if it's a lecture-like occasion. I can't seem to stop myself from observing what the other people in the audience are doing while expected to take part of the lecture. I'm like a kid in a candy store; I get childishly excited about any opportunity to observe different types of crowds and their engagement in media multitasking, because very seldom I attend a lecture or event where somebody would not take out their phone or laptop! It doesn't matter what age the audience is, or what type of event I attend, it never takes more than a few minutes before someone picks up their phone to check something seemingly very important. This was also the case during this particular lecture. At first, only a few phones were used to take pictures of slides and maybe to check something else

quickly. However, the number of phones used for pictures and other purposes kept growing over the course of the lecture. It's like the behavior was contagious.

The second revelation I made relates to a story that Lovisa told about an actual kid in a candy store. Her two sons had made a New Year's resolution not to eat candy for one entire month. The younger one was able to stay away from candy for only a few hours. Then he walked past a candy store, and just by looking at the window, he gave in to the impulse and wanted to go in and smell the candies. He ended up buying and eating an entire chocolate bar. The older one realized that the temptation would be too big if he entered the store, so he decided to wait outside and had succeeded in staying away from candy for two weeks by the time of the lecture. This example was used to highlight the fact that changing even a small part of your own everyday behavior is not only up to you or your willpower. To truly succeed, you also need to look at and understand the effect of different cues in your environment – it's much easier refrain from eating candy if you don't enter the candy store.

Applying these revelations to the context of my research really highlights the critical issue of exploring things from new perspectives. Sticking to a dual-task and purely cognitive approach will never provide enough knowledge on the actual real-life process of media multitasking. It's not all about our willpower or personality traits – we need to understand how different cues in the environment affect our engagement in seemingly irrational, disruptive activities. But avoiding the candy store seems quite easy. Can we really avoid media, when media is everywhere, and media multitasking is contagious?

7.2. Media multitasking activities and digital distraction

People today, especially young people, have a hard time sitting still and completing a project or task without regularly checking the phone, social media, or something else online (e.g. Agrawal, Sahana, and Dé 2017). This empirical study shows that the diginative informants frequently engage in media multitasking activities in class, at home, on the go, etc., and that most of these activities are described and perceived as fragmented, disruptive, habitual, addictive, and sometimes highly problematic (se e.g. The Bad and The Ugly profiles). The framework developed here, aiming to complement prior research and advance our knowledge about digital distraction in the everyday context, builds upon the notion that focus needs to be shifted from a cognitive perspective towards everyday media practices (see e.g. Steele and Brown 1995; Steele 1999) and physical activities (see e.g. Kaptelinin, Victor and Nardi 2018).

Traditional theories on limited attention and information processing capabilities, and the subsequent cognitive overload, negative socioemotional and performance-related consequences (see e.g. Brasel and Gips 2011; van der Schuur et al. 2015; May and Elder 2018) may explain why we are not capable of media multitasking without any "cognitive costs". However, these cannot explain why people frequently keep engaging in everyday media multitasking regardless of numerous documented and self-perceived negative consequences. The framework presented here draws

inspiration from the Scandinavian school of Activity Theory (see e.g. Kaptelinin and Nardi 2018). At the core of the framework is the everyday media multitasking activity (as defined by the AT approach) and the complex underlying time allocation decision process. However, certain fundamental assumptions of the AT approach are questioned and developed by adding perspectives such as unconscious everyday activities and the perceived disruptive nature of such activities into the framework.

7.2.1. An Activity Theory perspective

Inspired by the development of *Practice Theory* in sociology, a new paradigm emerged within media studies in the early 1990s, highlighting the importance of regarding media as practice, and focusing on the everyday context of media consumption (Steele and Brown 1995; Steele 1999; Couldry 2004). Around the same time, *Activity Theory (AT)*, which can be viewed as a theory of practice, started to gain grounds within Human-Computer Interactions (HCI) and Information Systems (IS) research (e.g. Kaptelinin and Nardi 2018). AT can be described as a psychological framework that integrates motivation, cognition and behavior into the context of human practices (Kaptelinin, Victor and Nardi 2006). It is a quite complex theoretical framework; therefore, only a few critical aspects of the AT approach will be highlighted and discussed here.[36] Focus lies on defining what is meant by an activity and what factors are included in this definition.

The aim in AT is to understand the unity of consciousness and activity from the perspective of a single individual (e.g. Nardi 1996; Kuutti 1996). However, the isolated individual is perceived as an insufficient unit of analysis, which is why the cultural and technological aspects of human actions are also considered (Benbunan-Fich, Adler, and Mavlanova 2011). AT suggests that the context for an individual's actions must be included in the basic unit of analysis; this means that the object of research is always essentially collective even if the main interest is in individual action (Kuutti 1996). The unit of analysis in AT is the individual's activity, which encompasses cultural (community) and technical (technology) mediation (e.g. Nardi 1996; Benbunan-Fich, Adler, and Mavlanova 2011). An activity is traditionally defined within AT as being "composed of subject, object, actions, and operations" (Leont′ev 1978; in Nardi 1996, p. 37). Figure 6 (p.153) illustrates the basic structure of an individual activity as proposed by Vygotsky and his colleagues.

36 For a more extensive overview of the AT framework, see for example Leont'ev (1978), Bødker (1989) and Kuutti (1996).

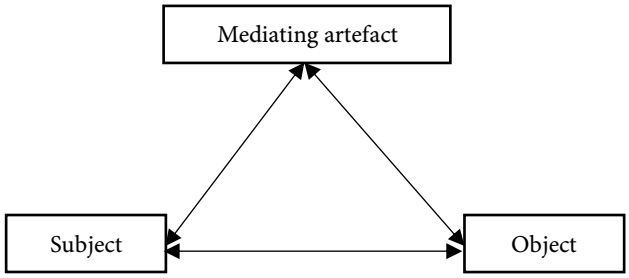


Figure 6. Vygotsky's original model of mediated action
(Engeström 2001).

Activities are distinguished from each other according to their objects (Kuutti 1996, p. 27). The *object* (or rather the "objective") is what drives the activity, whereas the *subject* is the person, or the group, engaged in the activity (Nardi 1996; Kuutti 1996). Objects can be transformed and altered during the course of an activity. Objects can be material things, but according to, for example, Engeström (2001), objects can also be defined as something less tangible or completely intangible. *Actions* are defined as "goal-oriented processes that must be undertaken to fulfill the object" (Nardi 1996, p. 37). Hence, the underlying idea is that actions are conscious (because of the goal-directedness) and that many different actions can or need to be taken to meet the ultimate goal (ibid.). A fundamental idea in AT is also the notion of mediation by artefacts or tools (Kuutti 1991; Ditsa and Davis 2000). There are three categories of tools: 1) primary tools; physical tools, artifacts, instruments, machines etc., 2) secondary tools; language, signs, models etc., and 3) tertiary tools; cultural systems, virtual realities, etc. (ibid.).

This basic mediated activity model (Figure 6) has later been developed further by many researchers. For example, Engeström's (2001) expanded AT model (Figure 7, see p. 154) describes how a wide range of factors work together to impact an activity. The fundamental idea remains the same, i.e. the object (or outcome) is achieved by human activities which are mediated by artefacts (e.g. tools, documents, etc.). However, this model includes the notion that activities are also mediated by the community. The community may impose rules that affect the activity, and the individual subject works as part of the community to achieve the goal. (ibid.).

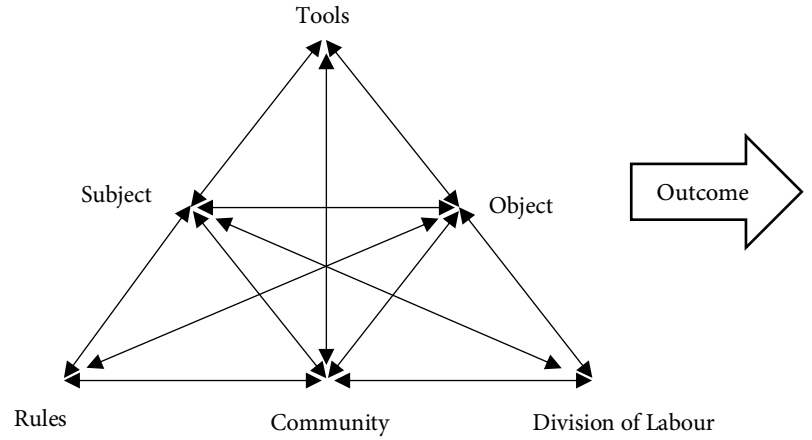


Figure 7. Engeström's Activity Theory Model
(Engeström 2001).

This model suggests that human activity is tied to a larger cultural context; activities are socially bound and cannot be viewed simply as the sum of individual actions (Engeström 1990). Internal activities cannot be understood if they are analyzed separately from external activities, because they transform into each other. AT proposes a specific notion of context – "the activity itself is the context" (Nardi 1996):

> What takes place in an activity system composed of object, actions, and operation, is the context. Context is constituted through the enactment of an activity involving people and artifacts. Context is not an outer container or shell inside of which people behave in certain ways. People consciously and deliberately generate contexts (activities) in part through their own objects; hence context is not just "out there". Context is both internal to people—involving specific objects and goals—and, at the same time, external to people, involving artifacts, other people, specific settings. The crucial point is that in activity theory, external and internal are fused, unified. (Nardi 1996, p. 38)

What does this mean in the media multitasking research context? Given the fact that modern media multitasking by default involves technology of some sort, this technology-mediated activity perspective provides an appropriate base for the conceptual framework (Benbunan-Fich, Adler, and Mavlanova 2011). A media multitasking activity is performed by a subject (an individual) and can be driven by an object (for example, a need for entertainment or staying updated). The activity consists of several actions which, in turn, involve several operations (ibid.). This type of hierarchical conceptualization places the activity at the top (see Figure 8, p. 155). The activity is characterized by the object (the motive) that the subject seeks to attain (e.g. Ditsa and Davis 2000; Kaptelinin and Nardi 2006).

The second layer in this model, the actions, are physical actions taken towards specific conscious goals (e.g. Benbunan-Fich, Adler, and Mavlanova 2011). Actions can be compared to what is often referred to as *tasks* in other disciplines, for example in HCI (e.g. Nardi 1996). A task can be defined as an assigned or voluntary undertaking that requires time and other resources to reach an outcome (i.e. the object) (Benbunan-Fich, Adler, and Mavlanova 2011). The third layer, the operations, are routine processes that do not require specific conscious efforts for their execution but allow for adjustment to ongoing circumstances (ibid.). These are automated responses to perceived or actual conditions that allow humans to adjust their actions and/or the overall object to the current situation (e.g. Nardi 1996; Kaptelinin and Nardi 2006; Benbunan-Fich, Adler, and Mavlanova 2011).

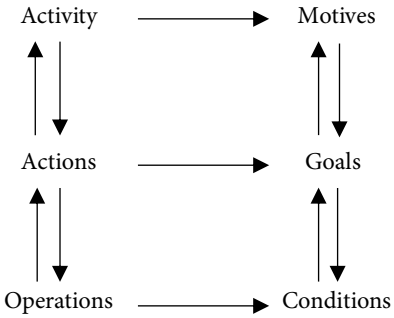


Figure 8. Hierarchical levels of activity
(Ditsa and Davis 2000).

This hierarchical conceptualization of an activity is why the AT perspective is used as inspiration in this study. According to the AT logic, a media multitasking activity consists of several mediated actions (or tasks) that are affected by and adjusted according to circumstances in the context. Benbunan-Fich et al. (2011) argue that the goal-orientation perspective of AT in combination with this dynamic adaptation in human activities can help us to better understand and predict routine as well as emergent and contingent actions. One of the strengths of AT is that it is a clarifying descriptive tool rather than a predictive theory (Ditsa and Davis 2000). Another strength is the inclusion of "social" and "material" as part of the same conceptual framework, hence, avoiding a traditional analytical dualism between these dimensions (Karanasios 2018). However, the digital era poses several challenges for AT (ibid.). The greatest weakness of this perspective in the context of this study is the underlying object of understanding the unity of consciousness. "AT incorporates strong notions of intentionality, history, mediation, collaboration and development in constructing consciousness" (Ditsa and Davis 2000, p. 243; inspired by Kaptelinin, V. 1996). As the empirical findings indicate, everyday media multitasking activities are often unconsciously performed, thus, this fundamental assumption of goal-orientation and consciousness in AT is challenged.

7.2.2. Intentionality in everyday media multitasking

The Activity Theory approach, like most other models and perspectives used for understanding everyday media multitasking, suggests that activities are goal-oriented and based on deliberate decisions (e.g. Karanasios 2018). According to Leont'ev (1978), there is no such thing as "objectless activity". While this notion largely prevails in recent AT research (see e.g. Kaptelinin and Nardi 2018), Karanasios (2018) reminds us that AT does not focus on static objects, rather on active objects that are socially constructed and transformative, and may well reflect the complexity and true nature of human activity. In fact, the notion of object-orientation remains one of the most questioned and debated issues within AT (e.g. Kaptelinin, Victor 2005; Karanasios 2018). In response to such problematization efforts, the field of AT has been developed and advanced lately by using AT in flexible and creative ways and by combining AT with other theoretical perspectives (e.g. Kaptelinin and Nardi 2018).

Here, the developed conceptual framework is inspired by the AT approach in terms of embracing 1) the hierarchical definition of an activity (activity – actions/tasks – operations/conditions), and 2) the key components of the AT framework (individual/subject – community/context – technology/mediation tool). These elements highlight the interplay between individuals, artefacts and the environment as part of the activity. However, the issue of object-orientation is fundamentally questioned as the empirical study shows that everyday media multitasking activities are often performed in an unconscious and unintentional manner. This stresses the importance of addressing concepts such as intentionality and consciousness.

Intentionality is a philosophical concept, originally from phenomenology, which can be defined as "the power of minds and mental states to be about, to represent, or to stand for, things, properties and states of affairs" (Jacob 2019). The concept of intentionality is closely connected to other philosophical and psychological concepts such as *consciousness* and *awareness* (Siewert 2017). While these concepts are used here to challenge the object-orientedness of AT, Nida-Rümelin (2014) suggests that there are no "subjectless experiences" and that there is always some form of *basic intentionality* involved in all activities and experiences[37]. While acknowledging the philosophical definitions and traditions of intentionality, the concept is defined and used here in a much more pragmatic way to describe media multitasking activities that are performed as a consequence of a deliberate and goal-driven decision, for example for entertainment purposes (e.g. Hwang, Kim, and Jeong 2014; Ralph et al. 2019) as opposed to more absentminded and unintentional media multitasking activities (e.g. Marty-Dugas et al. 2018).

37 For a more elaborate discussion of the notion of basic intentionality, see Nida-Rümelin (2014)

For example, if you are attending a lecture which you find boring, you may make a deliberate decision to take out your smartphone and start multitasking with it. This illustrates an intentional decision, presumably following the recognition of feeling bored. Most media multitasking studies on predictors (e.g. applying the Uses and Gratification Theory) presume that everyday media multitasking activities are of this type of intentional nature (e.g. Wang and Tchernev 2012; Zhang and Zhang 2012; Ahad and Anshari 2017). However, media multitasking in this type of situation can also be of a more unintentional nature. The person sitting next to you may take out his or her phone, which may trigger you to give in to the impulse to take out your own phone as well. For example, Fried (2008), Sana et al. (2013) and Ralph et al. (2019) found that media multitasking in a classroom context affected not only the one multitasking, but also other students, resulting in unintentional media multitasking activities and disrupted learning processes. This study suggests that unintentional media multitasking behavior in a classroom context can also be triggered by, for example, pure habit to take out one's phone when entering the classroom or by a compulsive need to check social media or something else online. These findings suggest that the intentionality aspect of everyday media multitasking is worth exploring further.

Furthermore, this example of unintentional media multitasking also highlights the fact that the underlying decision can be affected by various elements in the environment, and that psychological and individual predictors are not enough in anticipating such activities. Also, the perception of this type of activity may be different depending on its intentional or unintentional nature. If the activity is triggered impulsively or compulsively it may be perceived as distractive, whereas, if the same activity is driven by a conscious goal (to avoid being bored) it may feel like a welcomed distraction (but a distraction nonetheless).

This study shows that the majority of the informants' described media multitasking activities that are experienced as disruptive are of an unintentional nature. Therefore, the importance of addressing the concept of intentionality when studying everyday media multitasking and digital distraction is further emphasized. Still, this concept has been overlooked in most prior media multitasking studies (Ralph et al. 2019). However, indirectly, this issue is addressed in studies where the unconscious or uncontrolled dimension of media multitasking is mentioned, addressed, or measured. This dimension is part of, for example, studies on habitual and addictive media [multitasking] behavior (e.g. LaRose, Lin, and Eastin 2003; Oulasvirta et al. 2012; De-Sola Gutiérrez, Rodríguez de Fonseca, and Rubio 2016; Wilmer, Sherman, and Chein 2017; Duke and Montag 2017).

7.2.3. Digital distraction – An unintended consequence?

As illustrated by the example with the kid in the candy store (section 7.1) and the classroom example above, regardless of good intentions (not to eat candy or not to engage in media multitasking), habits, addictive tendencies or elements in our nearby

environment may take over and trigger unintentional media multitasking activities anyway: "Our technological habits have a powerful hold over us" (Aagaard 2017, p. 85). The appeal, but also the distraction, of social media and the endless content online can be hard to resist, especially when disruptive media multitasking activities manifests themselves as everyday routines or addictive behavioral patterns (ibid.). Understanding what factors affect our media multitasking behavior, and how, is key in gaining deeper insight into digital distraction. However, we first need to understand what is really meant by the concept of *digital distraction*.

Digital distraction is widely used, but seldom clearly defined, in media multitasking studies. Most often, the concept is associated with technology-induced interruptions and subsequent distraction that prevents someone from concentrating on something else (e.g. Carrier et al. 2015; Agrawal, Sahana, and Dé 2017). Agrawal et al. (2017, p. 191) define digital distraction as "distraction due to electronic devices and media that break the concentration from the main piece of work that is being done". A similar definition is applied here, which implies that digital distraction is linked to everyday activities that involve 1) multitasking with digital media, and 2) are perceived as disruptive and problematic by the person engaging in the activity; i.e. while digital technology is a central part of the activity, the activity is not necessarily triggered by a technology-related cue.

As mentioned, a media multitasking activity is defined here as embracing several mediated actions (or tasks) that are affected by and adjusted according to contextual circumstances. To fully understand everyday digital distraction, we need to consider the entire activity system (see e.g. Nardi 1996). We also need to consider the entire process involved, i.e. predictors, patterns and consequences. In the proposed conceptual model (Figure 9, see p. 161), a number of individual, technological, as well as contextual, dimensions, rooted in the empirical study and the comparative literature review, are addressed as part of understanding the predictors of everyday media multitasking activities in particular. The activities themselves (as described and reflected upon in the media diaries, see chapters 5 and 6) constitute the patterns. Digital distraction can be viewed as a consequence, or an outcome (see Engeström's model, Figure 7, p. 154), of the media multitasking activities.

This perspective raises the issue of causality (see section 7.2.4) and the role of self-perception (and other "selves"; see section 7.2.5). However, it also raises the question of whether distraction should be viewed as an intended goal (or object), i.e. if distraction is deliberately sought after, or rather as an unintentional consequence. The empirical study suggests that while a large portion of everyday media multitasking activities are of an unconscious nature, the informants are well aware of the disruptive and potentially destructive consequences. They frequently engage in media multitasking (more or less consciously) regardless of their awareness of subsequent digital distraction. Similar results have also been presented by, for example, Junco and Cotten (2011) and Sanbonmatsu et al. (2013). This suggests that, while not always an intended object, digital distraction is seldom a completely unexpected outcome of media multitasking, at least not on an individual level. However, on a larger societal

level, increasingly distracted minds and disruptive behavioral patterns seem more likely to be an unintended consequence of the new mobile media landscape.

7.2.4. Causality

The issue of causality is a critical challenge in all media multitasking research; it is almost impossible to derive any conclusive results concerning causality, especially in an everyday context (e.g. Carrier et al. 2015; van der Schuur et al. 2015; Szumowska et al. 2018). Take for example the emerging trends identified here, related to the concepts of materiality, routine and addiction. Are we forming disruptive and fragmented media routines because we frequently use media? Or are we frequently using media because of those routines? Are we addicted because we excessively media multitask? Or do we become excessive media multitaskers because of perceived addictive tendencies? There's no way of telling the cause-effect relation in these cases.

The traditional distinction between predictors, patterns and consequences in media multitasking research imply a need for further exploration concerning causality. All of these elements are included here as part of the activity process and the proposed framework, suggesting that these are all intertwined. Separating one of these elements from the others easily leads to vague tautologies and conceptual confusion (in accordance with e.g. Aagaard 2015). Digital distraction cannot be understood without understanding everyday disruptive patterns and the underlying decision process, especially when the activities are unintentional by nature. No attempts will be made here to establish any cause-effect relations between the identified dimensions in the conceptual framework.

7.2.5. The many selves of media multitaskers

In accordance with the methodological approach in this study, the distinction between the "remembering self" and the "experiencing self" is made with regard to the reflective narratives in the media diaries (in accordance with e.g. Kahneman and Riis 2005; Jarden 2011; Zajchowski, Schwab, and Dustin 2017). In addition to these "selves," the concept of self-perception is introduced as part of the conceptual discussion on self-perceived addiction and self-perceived disruptive consequences of frequent media multitasking. The Self-perception Theory, developed by Bem (1972), describes how people interpret their attitudes and preferences by observing their own behavior. The theory is counterintuitive and proposes that "we interpret our own actions the way we interpret others' actions, and our actions are often socially influenced and not produced out of our own free will as we might expect" (ibid.).

In practice, discrepancies can occur between what's real and how it is perceived. For example, people often perceive themselves as more physically attractive than average (see e.g. Zell and Alicke 2011). Sanbonmatsu et al. (2013) found a similar disconnection between self-perceived multitasking ability and actual multitasking ability. These findings suggest that those most likely to engage in media multitasking

are those who are most overconfident in their own multitasking abilities (ibid.). In terms of self-perceived disruptive consequences (as described in the media diaries), while a certain disconnection between these and actual consequences may be acknowledged, the perceived effects offer an interesting perspective as complement to actual documented effects. For example, some of the reflections on problematic media multitasking behavior (see e.g. The Ugly profile, section 6.2.3.) can be interpreted as a cry for help. Their perceived problems may not be established or clinically diagnosed in any way, but they perceive they need help with finding ways to manage their problematic everyday media behavior. The ultimate goal with the framework proposed here is to create a greater awareness of the factors affecting everyday digital distractions to find new tools for managing perceived distractive and destructive media behavior. To do that, we need to carefully listen to the informants and their experiences related to such disruptive behavior. In a sense, their recollections of their own behavior are actually more important in the quest to gain a deeper understanding of digital distraction than their actual behavior (in accordance with e.g. Sanbonmatsu et al. 2013).

In addition to these "selves," the concept of self-awareness will also be discussed later in this chapter. Furthermore, recent media multitasking studies have also addressed other "selves", such as self-efficacy (e.g. Wu 2017), self-esteem (e.g. Xu, Wang, and David 2016) and self-regulation (e.g. Parry, le Roux, and Bantjes 2019).

7.3. A new conceptual framework: Dimensions of digital distraction

Rooted in the empirical study and influenced by Activity Theory and the literature review, particularly related to media multitasking predictors, a new cross-disciplinary conceptual framework is proposed here. The aim of the framework is to advance our knowledge on digital distraction by presenting a number of central dimensions that help us understand the complexity of disruptive media multitasking activities and subsequent digital distraction. The framework, as depicted in Figure 9 (p. 161), includes the concept of digital distraction (as defined in the previous section), and embraces predictors, patterns and consequences of disruptive everyday media multitasking activities. The central individual, technological as well as contextual dimensions (inspired by the AT framework), can be used to analyze and understand the characteristics of such activities from different perspectives and are further divided into "subcategories" or additional dimensions (grounded in the empirical study).

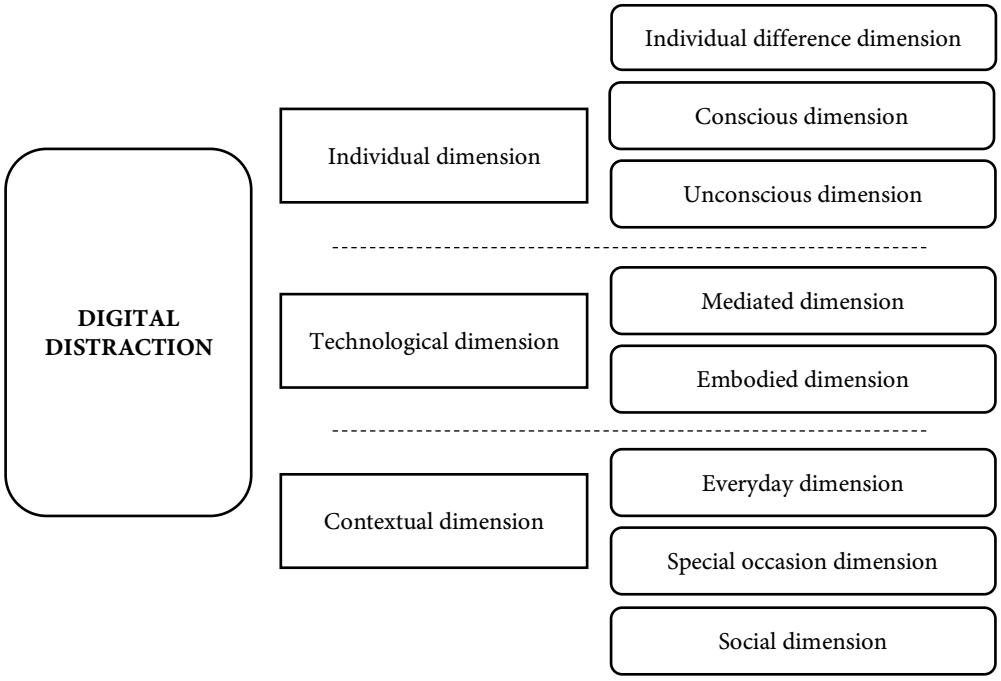


Figure 9. Dimensions of digital distraction.

As mentioned earlier, theorizing and conceptualization efforts within the emerging research area of media multitasking, particularly within the area of predictors, have been dispersed, implying a lack of fundamental theoretical perspectives and even conceptual confusion (e.g. van der Schuur et al. 2015; Robinson 2017; Aagaard 2015; 2019). The traditional stronghold within cognitive psychology and experimental and survey methodology contributes to a heavy focus on the individual, mainly psychological, predictors and motivators for media multitasking activities. This study and the proposed framework do not contribute to advancing cognitive research on media multitasking; rather, it provides a point of departure for further research into this phenomenon from different perspectives by introducing some key dimensions of everyday media multitasking that have been largely neglected in prior studies. The additional dimensions in the framework provide a wider view on why diginatives multitask with media to begin with, and why it is hard to stop even though they most likely are aware of the distractive, potentially damaging, consequences of their disruptive and fragmented behavior. Next, each dimension is discussed and explored further.

7.4. The individual dimension

The individual dimension is closely linked to what Jensen and Aagaard (2018) refer to as the first wave of (HCI-centered) media multitasking research, characterized by cognitive science and individual factors. Most prior media multitasking research could be categorized as part of this dimension, especially the stream of research that focuses on self-interruptions (see e.g. Dabbish, Mark, and González 2011) and the stream that focuses on the relation between media multitasking and (impaired) cognitive functioning (see e.g. Wilmer, Sherman, and Chein 2017). This dimension seems to be a natural part of the picture since media multitasking is always studied by focusing on the individual and his/her relationship with or response to some specific aspect(s) of media multitasking. One may argue (and quite rightfully so) that all of the dimensions in the picture could be part of the individual dimension, because, in the end, it is always the individual that acts upon the impulse to engage in disruptive media multitasking in a more or less intentional manner. However, the unit of analysis here is the entire activity system involved in everyday digital distraction. The framework is not a descriptive framework of an individual's perspective; rather, the dimensions emphasized in the framework illustrate some key elements in the activity system that affect the media multitasking activity and the underlying decision process. All of these dimensions need to be acknowledged (and addressed and explored further in future studies) to advance our knowledge on this particular phenomenon. I acknowledge that in the complex reality of digital distraction in the everyday context, all of these dimensions are interconnected, and one is hard to separate from the other.

The individual dimension in the framework is divided into the following subcategories:

1) *the individual difference dimension*; general individual, personality and motivational factors affecting the propensity for and engagement in disruptive media multitasking;
2) *the conscious dimension*; disruptive media multitasking and digital distraction characterized by intentional activities, control and moderation;
3) *the unconscious dimension*; disruptive media multitasking and digital distraction characterized by unintentional activities and a sense of loss of control.

7.4.1. The individual difference dimension

According to the perspective of AT logic applied here, a media multitasking activity consists of several mediated actions (or tasks). The individual engaging in this activity holds a freedom to decide how many tasks will be performed and how they will be combined. (e.g. Benbunan-Fich, Adler, and Mavlanova 2011). Each individual approaches the decision to multitask differently; including not only what tasks to perform but also how to integrate their performance in a particular time interval (ibid.). As prior cognitive research shows, there are a multitude of different individual factors related to, for example, cognitive control capabilities, information processing

ability, personality traits and self-perceived benefits (see e.g. Carrier et al. 2015; van der Schuur et al. 2015; Robinson 2017; May and Elder 2018; Aagaard 2019) that dictate how the user performs the tasks, i.e. will he or she focus on one task at the time or try to engage in several tasks simultaneously.

Prior research has shown that deficits in executive control (see e.g. Beuckels et al. 2019), personality traits such as polychronicity, impulsivity and sensation-seeking (e.g. Adler and Benbunan-Fich 2013; Sanbonmatsu et al. 2013; Kirchberg, Roe, and Van Eerde 2015), and self-perception in terms of perceived benefits (see e.g. Robinson 2017) as well as overconfidence in one's media multitasking ability (see e.g. Sanbonmatsu et al. 2013) increase the likeliness of engaging in media multitasking. While this study does not address the above-mentioned cognitive control systems or personality traits, characteristics that can be linked to these, for example, feeling restless, becoming easily bored and signs of FOMO and addictive tendencies are associated with a greater proneness to media multitasking. It seems that people who are impulsive, restless and who often seek gratification, attention and sensations online and are (over)confident in their multitasking abilities are more likely to engage in everyday media multitasking than others, at least on a general level.

While demographic and socio-demographic factors may seem to be a logical element in this dimension (in accordance with e.g. Jeong and Fishbein 2007), very little evidence has been found on the relation between demographic factors and individual differences in media multitasking (see e.g. Wang and Tchernev 2012; Duff et al. 2014; Kononova and Chiang 2015). Similarly, no real differences were identified in relation to age or gender. It seems that individual differences in propensity to media multitask are not really likened to factors such as age or gender. However, socio-demographic factors such as education background, size of household and living arrangements have been found to have an impact. For example, Patil et al. (2019) showed that digital distraction was lower among students in a computing-related major compared to other students. This study shows that living arrangements, especially recently experienced changes in living arrangements, impact the propensity to media multitask in different ways.

Often the MMI approach is used to highlight individual differences in propensity for and engagement in media multitasking (e.g. Ophir et al. 2009; van der Schuur et al. 2015; Parry and le Roux 2019). However, focusing only on a distinction (made on somewhat questionable grounds) between HMMs and LMMs and a comparison between these categories, many essential individual differences in everyday media multitasking activities are overlooked. For example, the MMI approach does not address the issue of intentionality. Parry and le Roux (2019) suggest that more explicit emphasis needs to be put on understanding individual differences concerning motivations and intentions.

7.4.2. The conscious dimension

According to this dimension, we focus on how the individual approaches the decision to multitask in an intentional and controlled manner (see also the discussion on intentionality in section 7.2.2). The decision is often rooted in a recognized need (e.g. cognitive, affective, personal integrative, social integrative or tension release), and the media multitasking activity is performed as a way of gratifying the need. Media multitasking can also be a response to a need to fulfill multiple goals within a certain time interval. This follows the logic of the Uses and Gratifications Theory (see e.g. West and Turner 2014) and the traditional object-oriented perspective of Activity Theory (see e.g. Kaptelinin and Nardi 2006). Many reflective narratives in the diaries can be associated with this dimension, for example, there are a number of needs mentioned which media multitasking helps to gratify, i.e. a need for constant entertainment, a need for staying up to date, and a need for always being available, etc.

This dimension resonates with The Good (see section 6.2.1) and The Proud (see section 6.2.4) profiles which are characterized by a sound, controlled and moderate relation to everyday media multitasking. It implies a certain degree of awareness concerning the object and the actions. However, even this type of consciously performed activity does not necessarily correlate with actual ability to multitask. Again, self-perceived benefits and overconfidence, as well as other individual factors mentioned in the previous section, may increase the propensity to deliberately engage in everyday media multitasking activities. Furthermore, the empirical study shows that these types of conscious media multitasking activities are not perceived as disruptive in the same way as unconscious activities (even though they may be). This underlines the importance of exploring the issues of intentionality and self-perception further. Crucial in understanding individual media multitasking activities and digital distraction is also the continuous decision to engage in media multitasking. If this is a conscious decision, what triggers repetitive engagement in media multitasking regardless of perceived and documented disruptive effects?

7.4.3. The unconscious dimension

The unconscious dimension embraces media multitasking activities that are performed in a more unintentional and unconscious manner. Regardless of a certain degree of "basic intentionality" (see e.g. Nida-Rümelin 2014), the individual is not aware of the object (if it even exists) and therefore acts in an automated, spontaneous, habitual or compulsive manner. The underlying triggers or object of this type of activity may not only be unconscious in the sense of being "not in conscious", but may be unavailable to the person in a sense of being difficult to bring to awareness even if he or she tries really hard (see e.g. Frosh 2002; Krüger and Johanssen 2016). This may explain the informants' difficulties in reflecting upon and explaining unconscious media multitasking activities in their diaries.

The unconscious dimension is most often overlooked (or simply bypassed due to methodological or theoretical choices) in media multitasking research. However, this dimension is accentuated in the media diary study where frequent engagement in unconscious media multitasking activities can be identified in the overall surprise that the informants express in relation to their everyday media use, and in the emerging trends of habitual and addictive media [multitasking] behavior. Furthermore, this type of behavior is repeatedly related to the experience of disruptive, problematic and detrimental consequences in the media diaries (see The Bad and The Ugly profiles in sections 6.2.2 and 6.2.3).

Habits play an important role in this unconscious dimension (see e.g. Couldry 2003; Couldry 2004; Markham 2017). While the very notion of media routines has been questioned in relation to diginatives, the informants in this media diary study describe surprisingly consistent, but highly fragmented media habits. LaRose and Eastin (2004) define habits as behavioral acts without self-instruction or conscious thinking. While habits are often positive in terms of providing a sense of control over one's behavior in new situation (see e.g. Wood and Neal 2007), many of the habits described in the diaries related to media use and media multitasking were perceived as "bad habits". Van Deursen et al. (2015, p. 411) note that "people who extensively use their smartphones for social purposes develop smartphone habits faster, which in turn might lead to addictive smartphone behavior". This establishes a link between habitual and addictive behavior. However, it also raises concern towards coping with such behavior as the personality traits and cognitive limitations associated with media multitasking are also associated with failure of self-regulation and a higher risk of addictive media behavior (ibid.).

The anticipation of reward and the experienced "highs" that characterize habitual media behavior (see e.g. Hansen 2019a) are also central elements in addictive media behavior. An increased trend of media addiction is one of the more prominent empirical findings in this study. The distinction between habit and addiction, here, is made based on perceived withdrawal symptoms, growing tolerance and a general sense of loss of control in what is referred to as self-perceived addiction. The latter also embraces consequences that are experienced and described as particularly problematic by the informants. What characterizes both bad habits and perceived addictions is perceived difficulties in breaking such negative behavioral patterns, especially when media today is present in basically everything we do. The media diary served as a real eye-opener to many informants, which can be viewed as a step in the right direction in overcoming distractive and problematic media use. Overall, all the individual dimensions addressed in the framework highlight the importance of increased self-awareness among diginatives in coping with digital distraction.

7.5. The technological dimension

While the individual dimension(s) resonates with the first wave of media multitasking research as defined by Jensen and Aagaard (2018), the technological dimension(s) can

be associated with both the second wave, focusing on human actors and mediated activities influenced by the Activity Theory, and the third wave, embracing habitual and embodied media activities (ibid.). The AT approach supports the view of technology as a mediating tool that allows individuals to carry out different forms of tasks (Benbunan-Fich, Adler, and Mavlanova 2011). The interaction between user and technology is a key aspect of AT (ibid.). In the digital era, this interaction has become an essential part of most everyday activities among diginatives, increasing the likeliness of digital distraction. However, the technological dimension plays a somewhat ambiguous role in media multitasking and digital distraction. On the one hand, mobile devices, digital platforms and software are increasingly developed to facilitate media multitasking activities; on the other hand, users are increasingly interrupted by electronic notifications and technology (Benbunan-Fich, Adler, and Mavlanova 2011). Media multitasking is not only an individual choice, but also the result of the dynamic adaptation of individuals to the contemporary media environment (ibid.)

The technological dimension can be seen as such an obvious part of digital distraction that the distinction between this and the other dimensions may seem almost redundant. However, as increasingly mediated, mixed and embodied experiences keep invading our everyday lives, we easily accept and adapt to them not really taking time to stop and reflect on the role of technology in how we behave, act and think. I believe it is important to problematize this trend, and therefore the following subcategories are highlighted:

1) *the mediated dimension*; focusing on media multitasking activities as affected and mediated by mobile technology;
2) *the embodied dimension*; focusing on "media" multitasking within the new era of increasingly integrated technological solutions.

7.5.1. The mediated dimension

Jeong and Fishbein (2007) and Kononova and Chiang (2015) highlight media factors, such as access to technology and media content as well as media ownership, as key predictors of media multitasking behavior. Based on the empirical findings related to materiality and mediated experiences (see section 5.3), we can safely assume that we have long since passed the question of ownership or access being a deciding factor. For example, while some informants in 2013 were still contemplating about whether or not to buy a smartphone, at least 99 % of the informants every year after 2016 own a smartphone, no longer referring to it as a smartphone but just a phone or a mobile.

The fact that technology is always present in some form or another in diginative's lives, taking a more active role in mediation of everyday activities all the time, quite naturally increases opportunity and probability for digital distraction. The smartphone, especially, which for many diginatives has grown into "an extension of their hand", is an important factor in predicting media multitasking behavior. The smartphone has replaced many other everyday functions and artefacts, such as the

alarm clock, wristwatch and calendar, which makes the dependence and the role of this device even more impactful. The division line between "lived experiences" and "mediated experiences" (as defined by e.g. Thompson 1995) is becoming increasingly blurred.

Technology-induced media multitasking activities are also part of this dimension. Among others, Thornton et al. (2014), found that the mere presence of a mobile phone can be distracting due to what the phone represents in terms of, for example, social connection and anticipated "highs" related to social media. In line with increasingly personalized and integrated recommendation and notification systems, the likeliness of distraction in the form of a simple beep (and what that represents) also keeps growing. Furthermore, the adoption of a new device or application was also found in the diary study to be a significant factor predicting (at least temporarily) increased media multitasking and subsequent digital distraction.

Most informants describe actions taken to prevent or reduce problematic media use as a reaction to a recognized feeling that one's media use is spiraling out of control (e.g. The Proud, section 6.2.4.). A more proactive approach (in accordance with The Good, section 6.2.1) is described as desirable. However, most informants find it difficult to achieve this goal.

7.5.2. The embodied dimension

This dimension, while not that clearly acknowledged in the media diaries, is growing in more importance every day. It deals with "media" multitasking that exceeds the mobile media era as described in the previous section. In accordance with the development of IoT, VR, AR, AI, etc., technology is becoming a situated part of basically everything around us, not only in what we refer to today as mobile devices (e.g. Jensen and Aagaard 2018). We engage with this type of technology without even reflecting on the fact that this could also be interpreted as a form of media. Still, it may just as well as any mobile device serve as a source for digital distraction.

In the diary study, such technologies are not (yet) included into the definition of media to any significant extent. However, over the time period of the study (2013–2019), informants' have found it increasingly difficult to define the concept of media and what role media plays in their lives. This becomes particularly clear when studying how the informants relate to and define the concept of media. In later years, especially, it seems difficult to grasp where media begins, and where it ends. This can be seen as an indication of the concurrent technological development leading up to increasingly "blurred lines" and mixed experiences.

As mediated, mixed and embodied activities increasingly become an integrated and habitual part of everyday life, it becomes clear that the current technological development is outrunning the development of our brains (e.g. Hansen 2019a). We are simply not equipped to cope with this rapidly advancing digital era and trying to do so leads to cognitive overload. Overall, the technological dimensions in the

framework suggest that new tools and strategies are needed for dealing with increasingly mediated and embodied activities.

7.6. The contextual dimension

While most of the individual, as well as technological, dimensions presented above have been addressed and explored in prior studies on media multitasking and digital distraction, at least to some degree, the contextual dimension has rarely been addressed to any further extent. The context in certain empirical studies and the effects of everyday media multitasking activities in or on these studies are addressed, for example, the immediate consequences on driving (Nijboer et al. 2016; Stavrinos et al. 2019) as well as the immediate and long-term effects on different academic learning environments (Xu, Wang, and David 2016; May and Elder 2018). Certain elements in the physical environment, for example technology, have been acknowledged as having an impact on media multitasking and digital distraction (see the technological dimension, section 7.5.). However, the overall effect of the context (as in physical environment or situation) is generally overlooked. The role of context embedded in the time allocation decision is highlighted here, drawing on the Activity Theory logic suggesting that context is an integrated/embedded part of any activity.

Only a few media multitasking studies acknowledge and address the contextual or situational dimension; they suggest that contextual factors, such as physical location and the presence of company, are important stimuli in the media multitasking decision process (see e.g. Zhang and Zhang 2012; Sanbonmatsu et al. 2013; Kirchberg, Roe, and Van Eerde 2015; Ralph et al. 2019). In the media diary study, contextual factors were perceived by the informants as having a substantial effect on their media multitasking activities. The following subcategories are highlighted next:

1) *the everyday dimension* focuses on contextual factors affecting the mundane and habitual everyday media multitasking activities;
2) *the special occasion dimension* focuses on special events and situations that affect the propensity to media multitask in different ways;
3) *the social dimension* focuses on the effect of people and social situations on media multitasking and digital distraction.

7.6.1. The everyday dimension

The everyday dimension embraces cues in different contexts or situations that trigger habitual media multitasking activities and digital distraction. The concept of contextual embeddedness (see section 6.4) implies that the decision whether or not to engage in media multitasking is often influenced by external (excluding technological) cues. This is the case, especially for habitual everyday media multitasking. For example, if the same media multitasking routine is performed every morning in bed, while eating breakfast or while getting ready for the day, these actions become increasingly automated and associated with that specific context,

which in turn becomes an integrated part of the activity. In practice, this means that if you become used to checking news on your computer and social media updates on your phone while eating breakfast, the recurring everyday situation of eating breakfast (rather than any personality trait or technological factor) may trigger the impulse to multitask.

This type of internalized habit of media multitasking is described as part of many different contexts in the media diaries, for example, at home, at the gym, in the classroom, while driving, while traveling by bus or train, etc. While the contextual effects of this type of natural commonplace of media multitasking are often the same (i.e. triggers the impulse to media multitask) the slightest change in the context, for example, the presence of different people or stimuli can have a substantial impact on the media multitasking decision. Some changes may increase the propensity to engage in media multitasking while others have an opposite effect. Furthermore, the decision may vary from time to time in similar situations due to different individual, technological and contextual factors.

7.6.2. The special occasion dimension

The special occasion dimension is partly connected to the everyday dimension in terms of representing changes in the context (as described above) that breaks the habitual everyday media multitasking patterns in some way. Some special occasions mentioned in the media diaries as having substantial effects on media multitasking routines are, for example, travel, sporting events, exam weeks, parties and health-related issues. These have very different perceived effects on media multitasking and digital distractions. For example, a travel abroad most often decreases propensity for media multitasking as it breaks the pattern of triggering cues in the everyday context. Being ill however, may have the opposite effect as this means you are spending more time at home, which is often a commonplace for media multitasking with numerous different cues that may trigger digital distraction. Work- or study-related tasks constitute a paradox; for some, this means no media multitasking at all (focusing on studies or work completely), whereas for others, this increases their media multitasking behavior (finding it hard to focus on what needs to be done and procrastinating). Furthermore, some general trends of changed behavior caused by events in the world were also identified. For example, Trump's inauguration in January 2017 caused an overall increased media multitasking frequency among the informants. This also caused increased use of the TV, which otherwise is not that frequently used.

7.6.3. The social dimension

As with the special occasion dimension, the social dimension also constitutes a quite paradoxical dimension. For example, the company of family or friends can have different effects on different people in different contexts. Sometimes a visit to the

parents leads to increased propensity for digital distraction, sometimes it has the opposite effect. Sometimes a night out with friends makes one forget about the phone completely, sometimes there are "uncomfortable" social situations that increase the probability for digital distractions. The social dimension frequently reoccurs in the reflective narratives in the media diaries. However, there is no detectable general pattern or emerging trend linked to this particular issue. Similar paradoxical descriptions and reflections can be found throughout the entire study. However, in later years (2017–2019), an increase can be detected in expressed wishes for spending more time face to face with real people and being more present (not looking at any screens) in such social situations.

Overall, the contextual dimensions highlight the importance of understanding how different individuals react to different external cues in different contexts and situations. To understand the effect of context on digital distraction, increased awareness of individual differences and a certain contextual sensibility is needed.

7.7. Coping with digital distraction: Digital metacognition

The dimensions of digital distraction framework highlight issues that are important to consider in advancing our knowledge about digital distraction from a theoretical, methodological as well as practical perspective. The potential and shortcomings of the framework are discussed in the next chapter from these perspectives. However, the dimensions and the framework also offer important insights on an individual level into what dimensions are important to acknowledge and pay attention to in developing much needed new strategies for coping with everyday digital distraction. The individual dimensions highlight the importance of *self-awareness* of one's own everyday media behavior and propensity to engage in media multitasking. The technological dimensions highlight the importance of awareness of the role of technology in everyday life and suggest that *new tools and coping strategies* are needed for dealing with increasingly mediated and embodied media multitasking activities. The contextual dimensions highlight the importance of self-awareness of how different contextual and situational cues affect one's propensity to engage in media multitasking and digital distraction and a certain level of *contextual sensibility*. These components can also be recognized as part of the concept of *digital metacognition*.

Metacognition in its simplest definition means "thinking about thinking" (Lai 2011). According to Schraw and Moshman (1995) we all regularly do this, but few of us are aware that this systematic common cognitive process is called metacognition. The concept embraces two central components, knowledge and regulation, and is often linked to the context of education as metacognition can help regulate and support students' learning (Cross and Paris 1988; Schraw and Moshman 1995; Lai 2011). For example, Cross and Paris (1988, p. 131) define metacognition as "the knowledge and control children have over their own thinking and learning activities". Earlier studies on metacognition suggested that metacognitive skills are developed in young children (before the age of six). However, later studies show that metacognition

can also be taught and developed later in life (Lai 2011). The key components of cognitive knowledge and cognitive regulation, as well as the relation between them have been interpreted and defined in many different ways (ibid.). Flavell (1979) includes internal and external factors that may affect cognition as part of his definition on cognitive knowledge. He classifies cognitive knowledge in the following way: 1) person knowledge (knowledge of the nature of human beings), 2) task knowledge (knowledge on demands of different tasks), and 3) strategy knowledge (knowledge about different forms of strategies and what strategies are most useful).

The concept of digital metacognition has been mentioned in a few media multitasking studies (see e.g. Wu 2017; Parry and le Roux 2019), but has not really been considered thoroughly within this context. Wu (2017) defines digital metacognition as a greater understanding of one's own digital behavior and suggests that this is needed to control and better manage digital distractions. Parry and le Roux (2019) indicate that awareness interventions, restriction interventions and mindfulness interventions are viable strategies for coping with digital distraction and that [digital] metacognition is a key component in all of these three categories. Inspired by Flavell (1979), digital metacognition is defined here as a systematic process embracing awareness of internal as well as external (technological and contextual) dimensions, in terms of:

1) awareness about one's own media behavior (conscious as well as unconscious);
2) awareness about the characteristics of media multitasking activities (predictors, patterns and effects);
3) awareness about different strategies for coping with digital distraction and contextual sensibility (i.e., awareness of what strategies are most useful in different contexts and dimensions).

Digital metacognition offers a viable and pragmatic framework for developing new strategies for coping with digital distraction. However, as Schraw and Moshman (1995) suggest, metacognition is most often an unconsciously performed process. The challenge in developing new coping strategies, thus, lies within encouraging diginatives to actively observe and reflect upon their own media behavior, to strive for a better understanding of when and where their media behavior becomes problematic, and to find suitable ways of coping with perceived problematic behavior in different situations. The methodological and theoretical scope of this study offers useful approaches in this endeavor. For example, the media diary served as a simple but efficient method for enhancing the informant's awareness of their own everyday media behavior. A similar diary exercise is something that may help many of us gain a better picture of our own media behavior and identify problematic activities and situations. Furthermore, the conceptual framework can be used as a tool for recognizing different triggers and dimensions, internal as well as external, that have an impact on everyday digital distraction. If the framework is used for this purpose, it is important to remember that we are all different and that our reactions to similar cues may vary due to different circumstances.

8. DIGINATIVES AND DIGITAL DISTRACTION

> *[…] we're living in a "dark age" of technological distraction. The technologies that have granted us such productivity, communicative potential, and information access are also chronically distracting us, in multiple ways, and we're only starting to learn the devastating mental and physical consequences of this. (Johansson 2019)*

This dissertation explores one of the most impactful socio-cultural trends of our time: the evolution of everyday media multitasking. This trend (a presumably unintended consequence of digitalization) has given rise to many (also presumably unintended) negative consequences, such as impaired abilities to concentrate and process information and increasingly restless and impatient individuals. It seems we are constantly trying to do too many things at once as an attempt to keep up with today's hectic and volatile media landscape. In consequence, many of us experience cognitive overload and subsequent stress, anxiety and other psychological and physiological symptoms. Indeed, we are living in a "dark age" of digital distraction (Johansson 2019). Distraction is everywhere and we increasingly let ourselves be distracted (e.g. Aagaard 2017). Our human brains are failing to keep up with the rapid technological development (e.g. Hansen 2019a). The future does not seem too bright. However, while some fundamental changes in our everyday media behavior are needed, there is hope that we can learn how to cope with this new and highly volatile media landscape.

This study approaches everyday media multitasking from a highly pragmatic perspective, addressing methodological as well as conceptual gaps in prior media multitasking research. The overall aim has been to *develop a conceptual framework for understanding digital distraction by exploring changing media behavior and perceived disruptive media multitasking among diginatives*. Let us return to the central research questions for a short overview on key findings.

How has the media behavior of diginatives changed between 2013 and 2019?

This question was part of the initial research plan and has guided the empirical data collection and analysis process throughout the entire study. Prior studies have recognized several media-related behavioral changes among the diginative generation in the past decade. This longitudinal media diary study highlights four specific emerging trends identified in the diginative informants' media behavior: 1) increasingly mediated and mixed everyday activities, 2) increasingly fragmented media routines, 3) increasing self-perceived media addiction, and 4) increasing engagement in disruptive media multitasking. These trends have been explored further in the dissertation by introducing the key theoretical concepts of materiality, routines, addiction and media multitasking. While many other trends also were identified in the Grounded Theory-inspired analysis process, the four key emerging trends were chosen because they clearly "stood out" in one way or another. Specifically, the emerging and paradoxical trend of increasing media multitasking seemed interesting due to the concurrent escalation of research on this particular

phenomenon; which is why media multitasking was chosen as the core concept to be explored further.

How do diginatives describe and relate to their own media multitasking activities?

The second question was introduced in conjunction with the decision to focus on *media multitasking* as the core concept. The reflective narratives in the media diaries describe a large portion of the informants' everyday media multitasking as 1) *unintentional* (e.g. impulsive, habitual and addictive), 2) *technology induced* (e.g. triggered by mobile notifications or the mere presence of mobile devices), and 3) *contextually embedded* (e.g. triggered by non-technological external elements or contexts, also highly affected by special occasions and social situations).

A key empirical finding is that unconsciously performed media multitasking activities are perceived as notably disruptive, whereas intentional activities are perceived as less problematic. The aggregated theoretical dimension of *disruptive media multitasking* was introduced to make a distinction between media multitasking activities that are perceived as disruptive by the informants, and media multitasking activities that are not. The study shows that the same activity can be perceived as disruptive in certain contexts, and as a welcomed distraction in others. This suggests that focus needs to be shifted towards the experience and the perception of the activity, rather than the activity itself, to further explore the phenomenon of everyday media multitasking.

Four different profiles were identified, illustrating different ways the informants experience and relate to their own media multitasking activities. The Good and The Proud profiles indicate a positive, conscious and moderate relation to everyday media multitasking, whereas The Bad and The Ugly profiles indicate a negative, disruptive and uncontrolled relation. An individual's relation can change over time in accordance with internal as well as external factors and, thus, move between these profiles. In this study, The Bad and The Ugly profiles clearly exceeded the more positive and controlled ways of relating to media multitasking. This led to further questions in terms of why diginatives keep engaging in disruptive media multitasking, and how they can develop strategies to cope better with perceived problematic media behavior.

Why do diginatives frequently engage in disruptive media multitasking?

This research question was included parallel to the recognition of the theoretical dimension of disruptive media multitasking. The question is rooted the theoretical framework related to media multitasking predictors, and the central question within this research area: "why do people engage in media multitasking?". However, the scope of the question is expanded to include the repetitive nature of everyday media multitasking. Furthermore, the question highlights the paradox in frequently engaging in activities that are perceived as disruptive and problematic. Inspiration was drawn from the literature review to find and explore a new and cross-

disciplinary conceptual perspective on disruptive media multitasking and its predictors, much needed to advance our understanding of this phenomenon.

Rooted in the extensive and continuous empirical data analysis process, and the identified emerging trends, theoretical concepts and aggregated theoretical dimension, the second aggregated theoretical dimension of *digital distraction* was introduced as a means to capture a more focused perspective related to everyday media multitasking activities that are perceived as disruptive and problematic. The Activity Theory approach served as inspiration for the development of a conceptual framework, embracing different individual, technological as well as contextual dimensions that affect the propensity for engaging in disruptive everyday media multitasking activities and subsequent digital distraction.

Some of the recognized dimensions in *Dimensions of Digital Distraction* framework (as depicted in Figure 9, p. 161), have been thoroughly addressed in prior research on media multitasking predictors, e.g. individual cognitive motivations and technology-induced distractions. The findings in study largely support prior findings and theories related to these dimensions, and suggest that, for example, certain personality traits and the availability and presence of mobile devices and digital services can be recognized as predictors of media multitasking. However, other dimensions have generally been neglected in prior research even though these emerged as essential in this study, e.g. the contextual dimensions. Social situations in particular were found to have a notable impact in the informants' propensity to engage in media multitasking. Some situations automatically triggered the impulse to take out the mobile phone and start multitasking, whereas, others had a completely opposite effect.

How can diginatives develop strategies to cope with everyday digital distraction?

This question served as inspiration for developing the conceptual framework and introducing the concept of *digital metacognition*. The empirical study highlights the importance of a relationship with media multitasking characterized by awareness, moderation and a proactiveness of a certain degree (in accordance with The Good profile). The Dimensions of Digital Distraction framework does not describe the actual process of digital distraction but highlights a few key dimensions that may affect the process in different ways. The framework can be used from an individual's perspective, mapping out dimensions, and characteristics or cues within the dimensions that may trigger or hinder disruptive media multitasking activities. This helps the individual increase awareness of different contributing factors as to why he or she engages in digital distraction.

The identified dimensions capture the essence of the concept of digital metacognition. This concept highlights the following elements as key components in coping with everyday digital distraction: 1) awareness of one's own media behavior (conscious as well as unconscious), 2) understanding and awareness of disruptive media multitasking activities (predictors, patterns and effects), and 3) awareness of different strategies for coping with digital distraction and what strategies are most

useful in different contexts and situations (contextual sensibility). An increased level of digital metacognition can serve as a critical step towards new and efficient strategies for coping with everyday digital distraction. Therefore, digital metacognition is something that would need to be introduced and adopted as a natural part of diginative's everyday lives. The academic context is essential in encouraging diginatives to become aware of the importance of digital metacognition. However, the same awareness and regulation strategies are needed among people of all ages today. Thus, digital metacognition should be introduced in educational contexts at a much earlier age, preferably at primary and secondary educational levels. In the next sections, the implications of these findings are reflected upon from a few central perspectives.

8.1. Digital distraction: A generational issue?

The question of generations has been a central feature in this study. While I stated earlier that age is not considered an important factor in the study, and that no comparative efforts between generations will be made, I later realized that age does matter. The empirical study showed no differences between age groups in terms of behavioral patterns or relations to media multitasking. However, this seems quite logical, as most of the informants were about the same age. Nevertheless, when comparing diginatives with other generations (defined by chronological age), age certainly becomes relevant. For example, recent studies have found that the contemporary media landscape and the constant presence of technology in young children's lives, coupled with critical cognitive developmental stages, has affected their brains structures (e.g. Armstrong 2019), and led to critical problems related to attention spans and capabilities (e.g. Baumgartner and Sumter 2017; Baumgartner et al. 2018). According to the prevailing norms of older generations, this development is highly alarming. However, this may actually indicate that these youngsters will be better prepared for dealing with digital distraction later in life.

As regards to older generations (born before 1990), they are rapidly closing in on younger generations in terms of adopting mobile technology as part of everyday activities (e.g. Rowlands et al. 2008). Their brains may not be affected in the same way as children's brains. However, the effects of media multitasking are just as disruptive for older generations, if not even more so. While older generations, in general, are better at focusing on one task at the time (e.g. Segijn et al. 2017), they may be slower in recovering from distractions. Thus, the consequences of everyday digital distraction may actually be greater among older generations in terms of the time it takes to regain momentum and recover from disruption in, for example, work-related tasks.

The diginative generation has not grown up in a world immersed with mobile technology in the same way as younger children. They also have no recollection of a time without the Internet in the same way that older generations have. This "in between" generation is still very interesting to study as they have grown up parallel

to the expansion of the Internet and have experienced the introduction and growth of social media. They are quick to adopt new mobile technology and digital services; however, they are also highly susceptible to subsequent negative consequences as they lack appropriate skills and strategies to cope with the distractive effects of new technology. These young adults are currently found in universities or in the early stages of their careers and will be the "consumers of tomorrow". They are in the forefront of the ongoing media behavioral changes, and the rest of us are following in their footsteps. For this reason, it is safe to assume that by studying the media behavior of diginatives and their relation to digital distraction, insight can be gained concerning other generations, also.

8.1.1. A new generation of digital awareness

The present media diary study indicates that diginatives, in general, lack suitable tools and strategies for coping with digital distraction. This could be one explanation for why The Bad and The Ugly profiles are more prominent than The Good and The Proud. The irony is that, most often, the applications or functions that record or control screen times, found on the smartphone is used for regulating media use. Thus, the same device, which is singled out as one major contributing factor for increased digital distraction, is also used to regulate digital distraction. While this may be helpful to a certain degree, non-technological strategies are also needed. A moderate and controlled relationship with media multitasking and digital distraction as illustrated by The Good profile, i.e. proactive by nature and does not necessarily stem from a serious "wake-up call", as with The Proud, is desired and needed. This requires a new generation of digital awareness (not tied to age in any way) which features increased levels of digital metacognition.

As the emergence of The Proud profile in recent years illustrates, there is also a current general trend towards a subculture characterized by deliberate technological non-use that needs to be acknowledged (see e.g. Thorén et al. 2019). While such non-users and "hipsters" taking an active stance against the use of digital technology may have traditionally been excluded from media consumption studies (ibid.), they in fact, become highly interesting here. In the media diary study, there is only a few informants that could be categorized as "non-users" or "non-multitaskers", but they showcase a high degree of digital awareness and metacognition in their reflective narratives. They have developed viable strategies for regulating and coping with excessive everyday media use and multitasking (either proactively or as a consequence of an experienced "wake-up call") and describe these strategies in detail in their diaries. They even noticed that they could probably teach their friends a thing or two; the problem seems to be that their friends are not really inclined to listen to their experiences.

This highlights the fact that diginatives, in general, must become more aware of their own behavior and what dimensions and cues trigger them in what way. Digital metacognition should be introduced and adopted at an early age, and need to be

reinforced on all levels of education, to avoid stress and other symptoms caused by excessive media use in later years, and to counteract the above-mentioned unwillingness to acknowledge and deal with what is experienced as problematic media behavior. In particular, the concept of contextual sensibility needs to be emphasized as an essential part of the new generation of digital awareness. This highlights the importance of understanding and being able to adapt coping strategies according to the preconditions of different contexts and situations.

8.1.2. A new generation of learning environments

Among many others, Uncapher et al. (2017), suggest that gaining more knowledge about media multitasking as part of 21st-century learning environments is an urgent matter. Different learning environments have become natural commonplaces for media multitasking, and digital distraction has become an inevitable part of diginative university students' everyday lives. Most interventions taken to regulate digital distraction in the academic context include, for example, forbidding mobile technology from the classroom. However, this is not a viable long-term solution, as technology can also bring invaluable benefits to the learning process. Not all disruptions are bad; these can offer opportunities for implicit learning (e.g. Edwards and Shin 2017), and have a positive effect on, for example, a creative process or give a boost to a writing process. Still, creativity does not come from a screen. A balance between technology and non-technology elements are needed in the new generation of learning environments. In order to find balance, digital distraction needs to be managed in the learning environment, by the learner, by the teacher, by fellow students, etc.; thus, digital metacognition becomes indispensable. While the importance of increased awareness and digital metacognition is highlighted here in the academic setting, as noted, this should also be introduced and established at earlier educational levels.

The next generation of learning environments also needs to tap into the yet unexplored potential of integrating everyday digital tools, such as social media, as part of enriched learning experiences (in accordance with e.g. Saykili 2019). Within the academic context thus far, focus has been primarily placed on embracing new technologies as part of learning processes and on digital literacy skills. I believe a shift is needed towards greater focus on digital metacognition. Students do not necessarily need to learn how to use more technology; they need to learn how to manage digital distraction. Focus needs to be shifted from restricting technological devices to supporting students in becoming aware of and coping with their everyday media use. Perhaps we also need to take a closer look at "the bigger picture" and the established structures. For example, if students manage to outperform themselves using mobile technology as an integrated part of their learning process, should we prohibit this? I believe we need to reconsider the role of media in the new generation of learning environments. A learning process including a certain degree of media multitasking may take slightly longer than without similar involvement of mobile devices.

However, perhaps it is the timeframe, and not the devices, that constitutes the problem. Perhaps we need to be more flexible with deadlines. We may even need to reconsider the very concept of a priori determined study periods.

Rice, Hagen and Zamanzadeh (2018), introduce the concept of *Media Mastery* as a means to understand, cope with and use multiple and paradoxical media in new learning environments. This is defined as "the choices (conscious or unconscious), habits, and patterns people develop in their lives regarding the use of media, based on their own and their social groups' values and attitudes toward media, as well as on the characteristics of media" (Rice et al. 2018, p. 1230). This concept captures the essence of digital metacognition as defined and explored in this dissertation. However, it also includes the dimension of time and attention management. Time management has been raised as a critical skill in many studies on media multitasking and digital distraction in the academic context. However, in the present-day attention society, it is all about attention (Gillberg, 2014). Thus, attention management skills are growing more and more important, i.e. students need to learn to take control over and manage their limited attentional capacities. Alongside digital metacognition, a certain level of meta-attention is needed (see e.g. Wu 2015; Wu and Cheng 2019). Modern technology has us hooked and we need to un-hook ourselves and regain one of our most valuable assets, our ability to focus on what we want, when we want and for however long we want (Salzberger 2019).

8.1.3. A new generation of consumption and marketing

Diginatives are constantly connected, constantly available and are constantly looking for entertainment. They are also restless and impatient and never really bored. As consumers, they are always reachable through digital channels, but at the same time, their fragmented behavioral patterns become more and more difficult to predict. What is more, other generations (defined by age) are continuously following in their footsteps. What does this really mean from a marketing perspective? The fact that media multitasking has become a natural part of everyday life has numerous implications for advertising and marketing research and poses an array of new opportunities, and challenges, for marketing practitioners (e.g. Duff and Segijn 2019). Again, it is all about attention, and in the hectic media landscape, catching the attention of consumers, especially young consumers, has become increasingly challenging (ibid.).

The traditional view on consumers' information processing and buying behavior as a sequential process can be forgotten (see e.g. Bardhi, Rohm, and Sultan 2010). Online consumption and buying decisions become more complex and cognitively challenging in line with technological advancement and changing media behavior (ibid.). Understanding the environmental constraint of advertising clutter and competitive interference becomes crucial for understanding the current non-linear preconditions for media behavior and consumer decision processes (e.g. Angell et al. 2016). Traditional models and theories on advertising exposure, focused attention,

memory and recall need to be revisited and reconsidered (e.g. Duff and Segijn 2019). Ads need to be viewed as an integrated part of the current media and attention landscape; a deeper understanding of audiences, activities, technological solutions, contexts, as well as the everyday interactions and intertwinement between these, is needed (ibid.).

Interestingly, these types of discussions and perspectives also arose during the marketing courses in which the media diary study has been conducted, as part of the subsequent sense-making process related to the diary task. Many bright ideas on new and more integrated marketing strategies have been developed and discussed, and the challenges for marketing in the volatile media landscape have been identified and explored. Some informants also included reflections on these types of challenges in their diaries:

> I notice that the digital services I use have become fewer and that a large portion of the apps I used to use have been deleted. This must be really challenging for those that produce media or marketing services. The challenge is to get everything "under the same roof". What I mean is, for example, that I used to have my music stored in different places, now Spotify accounts for at least 90 % of what I listen to. The same is happening with movies; Netflix is a very convenient service. Marketers need to adapt to these kinds of new and concentrated entertainment services. (Jon, 22, 2016)

An increasingly impulsive and restless generation of consumers who are frequently reachable via several different media channels can be a real goldmine from a marketing point of view. However, increased awareness of, and insights into, the fragmented media habits of these consumers is needed in order to "break through" and capture their disjointed and limited attention. The identified dimensions of digital distraction in the proposed framework can be of great help for marketing scholars as well as practitioners trying to understand this new generation of consumption. Future marketing strategies will need to move beyond cross- or multichannel approaches, and instead be designed to tap into several different dimensions of the consumer's everyday media behavior.

8.1.4. A new generation of media behavior

As suggested before, we are currently experiencing the emergence of a new media behavior. The current "new" media behavior is characterized by certain behavioral traits such as a preference for "quick fixes" and media multitasking. While many such "new" characteristics and media behavioral trends have emerged in the past decades, in line with the current technological development, I believe our media behavior will continue to evolve. In particular, technological solutions and services linked to IoT, AI, VR, AR, etc. will lead to increasingly blurred lines. Defining "media" is already difficult which can be seen in the media diaries. In the past seven years, the informants' preconceptions of media have changed from including traditional forms of media

alongside mobile media to primarily include nearly nothing more than mobile media. Today, if it cannot be found on a screen, according to the informants, it is not considered part of the concept of media. However, seven years from now, the situation will undoubtedly be just as different as it was seven years ago. Along with the rapid development trends in mobile media, I doubt it will become easier to define where media starts and where it ends, as well as when we are using media or not.

The boundary between online and offline and digital and analogue has already become blurred to the degree that such dichotomies seem redundant (e.g. Thorén et al. 2019). In line with the development of a new generation of media and media behavior, the very concept of media multitasking will probably also become redundant. For this reason, we need to shift our focus towards concepts such as digital distraction, to describe embodied experiences and disruptive interactions with some form of technology. Although the concept of media grows more complex, the distractive nature of the "new media" is likely to prevail. The proposed framework may be a useful tool in understanding factors that affect digital distraction in the future also. However, the dimensions identified in the framework presented in this dissertation reflects the current situation; in the future, some of these "old" dimensions may need to be replaced by new and more relevant dimensions.

8.2. Theoretical contributions

Researchers within social sciences seem to agree that previously accepted propositions, models and ways of thinking need to be challenged and revised. This is especially the case within research disciplines that are heavily affected by contemporary technological development and societal changes. While some fundamental models and theories are still relevant today, they often fail to embrace an increased need for a more holistic perspective, stepping away from one specific theory, model or proposition and opting for wider and more general frameworks instead (e.g. Swedberg 2012). Van der Schuur et al. (2015) and Janssen et al. (2015) suggest that a more holistic view and new cross-disciplinary theoretical frameworks are required to enhance the cohesion and conceptualization in media multitasking research. Focus should lie on media multitasking in the everyday context, stepping away from the traditional cognitive stronghold within the field (see e.g. Aagaard 2019).

The conceptual framework developed in this dissertation combines the three waves of media multitasking research, following the logic of the development within the HCI field as presented by Jensen and Aagard (2018). The framework combines different research fields and disciplines in its different dimensions. For example, the Individual dimensions draw on research primarily within cognitive psychology, the Technology dimensions are more closely related to disciplines such as HCI and IS, and the Contextual dimensions are inspired by a sociological perspective. The framework contributes to each of these research fields and disciplines, offering a widened cross-disciplinary understanding of why diginatives in general engage in everyday digital distraction, and numerous new insights and entry points for further testing and

exploration. For example, the Unconscious dimension must be explored further within cognitive psychology to complement the traditional stronghold within the Conscious dimension. Within HCI and IS, the Embodied dimension must be explored further, tapping into the next development stages of mobile devices, wearables, IoT, VR, AI, etc. Overall, this cross-disciplinary approach suggests that we should not completely overlook the first wave of primarily cognitive (laboratory and experimentally based) research, even though we are moving media multitasking research into the everyday context. While this extensive stream of cognitive research is insufficient in explaining the paradoxical growing trend of media multitasking and digital distraction in the complex everyday context, future studies and conceptualization efforts (within the second and third wave) should aim at complementing rather than discharging this first and imperative research wave.

The proposed framework is an initial attempt to combine different dimensions of digital distraction and may well serve as inspiration for further studies and conceptualization efforts to help advance our knowledge on digital distraction from a theoretical perspective. The concept of digital dimension is introduced as a means to avoid traditional distinctions between media multitasking and interruption-related concepts that have contributed to the current dispersion of the entire field. The framework expands the scope beyond one or two specific dimensions to embrace a more holistic and cross-disciplinary view of the phenomenon. The framework can be used as an analytical tool for understanding digital distraction from different perspectives and offer many new entry points to be further studied and explored on many different levels.

In line with the overall aim of the study, the framework is discussed here primarily from the perspective of media multitasking and digital distraction on a quite general level. However, as media, media multitasking and digital distraction have become integrated parts of research within a multitude of disciplines, the framework also becomes relevant within areas such as education studies and marketing and advertising studies. While inspiration for the framework is drawn from Activity Theory, the proposed framework does not necessarily contribute to advancing that particular theoretical field, at least not from the traditional AT point of view. However, this study does address the central notion of intentionality in mediated activities, which is a perspective that needs to be explored further within the AT tradition in line with recent development of mobile technology and media solutions.

8.3. Methodological contributions and limitations

Not only do we need to rethink traditional theoretical perspectives, but also traditional research methods, to capture the quickly evolving patterns of media consumption (Lindgren 2017). This is especially the case within media multitasking research where traditional experiential dual-task methodology fails to provide a deeper understanding of media multitasking in an everyday context (Benbunan-Fich, Adler, and Mavlanova 2011; Ralph et al. 2014; van der Schuur et al. 2015; Segijn et al. 2017).

This study offers a novel, to this date unique, methodological approach. First, the longitudinal scope offers valuable insight into changing media behavior and emerging trends among young adults between 2013 and 2019. Second, the exploratory pragmatic approach inspired by Grounded Theory and the framework proposed by Gioia et al. (2013), as well as the chosen media diary method, offer unprecedented opportunities to explore everyday media [multitasking] activities and digital distraction through media users' own recollections and perceived experiences, without proposing any predetermined definitions or alternatives. This methodological approach complements prior empirical studies with the perspective of self-perceived experiences. It is a perspective that is seldom explored in media multitasking, but highly relevant due to the discrepancies between the experienced and the reported or narrated realities. This study highlights the importance of addressing the perceived experience of a media multitasking activity, rather than the physical activity itself or the cognitive processing of the activity.

The vast set of empirical data in the study offers a wide enough basis for the Grounded Theory inspired analysis, and reduces potential biases as a consequence of, for example, the informants' definition of media and level of motivation which could have affected the findings more prominently with a smaller sample. However, the vast set of reflective narratives also posed some challenges in balancing between qualitative and quantitative measures. While I strived for a purely qualitative analysis, I do acknowledge the fact that some quantitative measures in terms of growth expressed in percentage, and expressions such as "most of the informants" have been used in the dissertation to illustrate some interesting empirical findings. Some may suggest that this indicates a mixed method logic (including both quantitative and qualitative measures). I would like to argue the that this is still a qualitative study featuring a few minor quantitative elements stemming from the rich set of empirical data. In general, qualitative research within the field of media multitasking research has been scarce. Combining qualitative research methodologies with the more traditional, quantitative approaches would benefit the field.

At the same time as this research approach offers many new and much needed opportunities to advance the field of media multitasking research, some key limitations need to be recognized. One methodological limitation is the iterative and messy research design, influenced and adjusted not only by new empirical insights (as suggested by the GT perspective), but also by several external factors and practicalities along the way. Also, acknowledging self-perceived and narrated experiences was mentioned as a strength of the study earlier; but this is also one of the significant weaknesses of the chosen methodological approach. Relying solely on this perspective for the primary data analysis may constitute a certain bias in the reported empirical findings. No generalizations can be made towards actual media behavior of diginatives

due to the decision to focus only on the reflective narratives in the media diaries.[38] The diary method would need to be combined with other methods for capturing "life as it is lived" to gain a more reliable picture of diginatives' actual media use in future studies.[39]

8.4. Suggestions for future research

An ongoing phenomenon such as the one studied in this dissertation offers a multitude of opportunities for exploration. A continuation of this longitudinal media diary study is already planned.[40] Related to the diaries, several concepts that emerged in the data analysis process have been left out of the dissertation in order to limit the scope of the study into a manageable amount of work and pages. For example, emerging trends and theoretical concepts related to social media use, general media consumption patterns, sociability, and emotions will be subject to further exploration after the completion of this dissertation. The regular reports/loggings of media consumption in the diaries will also be further analyzed applying a quantitative or mixed method logic for the analysis. Furthermore, the data collected

In addition to these already planned research activities, other suggestions for future research on a more general level pertain to developing the diary methodology by integrating elements of quantitative data collection or tracking functions in mobile devices to capture and explore the difference between actual and narrated media use. The picture dimension of the diary could also be developed and further explored, as pictures offer an interesting take on exploring young adults' everyday lives and media use. The format of the diary could also be altered to embrace, for example, video or audio material, or activities and posts in social media.

Furthermore, conducting similar diary studies among other generations (both younger and older age groups) would be an interesting basis for a comparative research design. As noted, chronological (and why not biological age) becomes an interesting factor to explore in relation to media multitasking and digital distraction. Most research within the field is, and has been, conducted among children, youngsters and young adults, but as older generations quickly adopt similar media behavioral patterns, these become a particularly interesting context on which to focus.

38 Even though a few such suggestions admittedly may have "slipped through" in the text.
39 Additional strengths and limitations are discussed in chapter 3.
40 A new round of media diary collection was executed in early 2020. A continued data collection strategy is planned for at least three more years to cover ten years of development in young adults' media behavior.

The identified profiles (The Proud, The Good, The Bad, and The Ugly) could be further developed into a strategic tool for measuring individuals' perceived relation to media multitasking. The tool could serve as a scale for determining and identifying when one's media multitasking is perceived as problematic and when actions need to be taken to regain control. This tool can be combined with the conceptual framework for further exploring and understanding what cues or situations trigger perceived problematic media behavior.

In general, the proposed conceptual framework also offers many interesting possibilities and entry points for future research. Each dimension, and subdimension, could be further explored separately within the respective research field, or in different constellations from a cross-disciplinary perspective. Especially the dimensions not addressed within the context of everyday media multitasking must be explored further. Similarly, the initial attempt to define and address the concept of digital metacognition as part of developing new coping strategies, and as an integrated part of different educational stages, needs to be further explored.

8.5. Final observation: We need to change!

"The Times They Are A-Changin'. Don't criticize what you can't understand." (Bob Dylan, 1964)

The world is changing. The observations and findings in this dissertation indicate that drastic changes are needed to cope with the new and volatile media landscape. However, most of us lack appropriate tools for doing it. Many modern individuals perceive their own media behavior as problematic, and they want to change. Some would really need to change. Many are trying to change. Some succeed while others don't. The bottom line is that change is needed, but change is scary. Change means stepping into the unknown and uncomfortable. Change means having to do something differently. Change is tough and requires determination and willpower.

However, pure willpower may not be enough. Think about the kid in the candy store trying to resist candy. How can we change our media behavior when media is everywhere? Change often requires more than we're capable of ourselves. This whole project revolves around changed and continuously changing media behavior. The observed changes are not consequences of deliberate choices made by the studied diginatives. No, they are simply following a much larger societal change. At the same time, they are in the driver seat for continued change. We're all following in their footsteps and while they are slowing down, other generations are currently starting to run to catch up. Is it really reasonable to expect diginatives or even younger children to change at the same time as we are adapting to their behavioral patterns? How can we expect our kids to manage their media behavior if we are glued to our screens 24/7? We really do need to change! But where do we start?

All these changes are not easy to understand, but not understanding or not wanting to understand can be dangerous. This creates criticism, even fear for the unknown and

a subsequent division between those who do (or want to) understand, and those who don't. This is nothing new, though. This is how it has always been. But what if change doesn't have to be so dramatic and so scary? Maybe we can start small? Change requires understanding; understanding requires awareness. Maybe we can start there? Maybe a greater awareness and an openness towards the unknown is enough? I believe this can be the first step towards a brighter future.

REFERENCES

Aagaard, Jesper. 2015. "Media Multitasking, Attention, and Distraction: A Critical Discussion." *Phenomenology and the Cognitive Sciences* 14 (4): 885-896.

Aagaard, Jesper. 2017. "*Digital Distraction: A Qualitative Exploration of Media Multitasking.*" Doctoral dissertation. Aarhus University.

Aagaard, Jesper. 2019. "Multitasking as Distraction: A Conceptual Analysis of Media Multitasking Research." *Theory & Psychology* 29 (1): 87-99.

Acton, G. Scott. 2003. "Measurement of Impulsivity in a Hierarchical Model of Personality Traits: Implications for Substance Use." *Substance use & Misuse* 38 (1): 67-83.

Adler, Rachel F. and Raquel Benbunan-Fich. 2013. "Self-Interruptions in Discretionary Multitasking." *Computers in Human Behavior* 29 (4): 1441.

Adler, Rachel F. and Raquel Benbunan-Fich. 2015. "The Effects of Task Difficulty and Multitasking on Performance." *Interacting with Computers* 27 (4): 430-439.

Agrawal, P., H. S. Sahana, and R. Dé. 2017. "Digital Distraction." In *Proceedings of the 10th International Conference on Theory and Practice of Electronic Governance* 191-194, ACM.

Ahad, Annie and Muhammad Anshari. 2017. "Smartphone Habits among Youth: Uses and Gratification Theory." *International Journal of Cyber Behavior, Psychology and Learning* 7 (1): 65-75.

Aldiabat, Khaldoun M. and Carole-Lynne Le Navenec. 2018. "Data Saturation: The Mysterious Step in Grounded Theory Methodology." *The Qualitative Report* 23 (1): 245-261

Alter, Adam. 2017. *Irresistible*. London: Bodley Head.

Alzahabi, Reem and Mark W. Becker. 2013. "The Association between Media Multitasking, Task-Switching, and Dual-Task Performance." *Journal of Experimental Psychology. Human Perception and Performance* 39 (5): 1485-1495.

Angell, Robert, Matthew Gorton, Johannes Sauer, Paul Bottomley, and John White. 2016. "Don't Distract Me when I'm Media Multitasking: Toward a Theory for Raising Advertising Recall and Recognition." *Journal of Advertising* 45 (2): 198-210.

Armstrong, G. Blake and Leeva Chung. 2000. "Background Television and Reading Memory in Context." *Communication Research* 27 (3): 327-352.

Armstrong, Thomas. 2019. "*Too Much Media is Associated with (Not so Good) Brain Changes in Children.*" American Institute for Learning and Human Development.

Baddeley, Alan. 2012. "Working Memory: Theories, Models, and Controversies." *Annual Review of Psychology* 63 (1): 1-29.

Bagot, K. S., S. A. Matthews, M. Mason, Lindsay M. Squeglia, J. Fowler, K. Gray, M. Herting, et al. 2018. "Current, Future and Potential use of Mobile and Wearable Technologies and Social Media Data in the ABCD Study to Increase Understanding of Contributors to Child Health." *Developmental Cognitive Neuroscience* 32: 121-129.

Bailey, Brian and Shamsi Iqbal. 2008. "Understanding Changes in Mental Workload during Execution of Goal-Directed Tasks and its Application for Interruption Management." *Transactions on Computer-Human Interaction* 14 (4): 1-28, ACM.

Baker, Loren. 2017. "A Brief History of Search Engine Optimization." *Search Engine Journal*. Accessed Nov 9, 2019.

Baker, Zachary G., Heather Krieger, and Angie S. LeRoy. 2016. "Fear of Missing Out: Relationships with Depression, Mindfulness, and Physical Symptoms." *Translational Issues in Psychological Science* 2 (3): 275-282.

Bandura, Albert. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. 1. print. ed. Englewood Cliffs, NJ: Prentice-Hall.

Bardhi, Fleura, Andrew J. Rohm, and Fareena Sultan. 2010. "Tuning in and Tuning Out: Media Multitasking among Young Consumers." *Journal of Consumer Behaviour* 9 (4): 316-332.

Barnet, Belinda A. 2009. "Idiomedia: The Rise of Personalized, Aggregated Content." *Continuum* 23 (1): 93-99.

Barnidge, Matthew, Trevor Diehl, and Hernando Rojas. 2019. "Second Screening for News and Digital Divides." *Social Science Computer Review* 37 (1): 55-72.

Barwick, Ryan. 2019. "Apple, Google and Amazon Remain Top Brands while Facebook Falls.", *Adweek*. Accessed Nov 9, 2019.

Baumgartner, Susanne E., Jeroen S. Lemmens, Wouter D. Weeda, and Mariette Huizinga. 2016. "Measuring Media Multitasking." *Journal of Media Psychology* 29 (2): 1-10.

Baumgartner, Susanne E. and Sindy R. Sumter. 2017. "Dealing with Media Distractions: An Observational Study of Computer-Based Multitasking among Children and Adults in the Netherlands." *Journal of Children and Media* 11 (3): 295-313.

Baumgartner, Susanne E., van der Schuur, Winneke A, Jeroen S. Lemmens, and Fam te Poel. 2018. "The Relationship between Media Multitasking and Attention Problems in Adolescents: Results of Two Longitudinal Studies." *Human Communication Research* 44 (1): 3.

Baumgartner, Susanne E., Wouter D. Weeda, van der Heijden, Lisa L, and Mariëtte Huizinga. 2014. "The Relationship between Media Multitasking and Executive Function in Early Adolescents." *The Journal of Early Adolescence* 34 (8): 1120-1144.

Baumöl, Ulrike and Alina Bockshecker. 2017. "Evolutionary Change of Higher Education Driven by Digitalization." *16th International Conference on Information Technology Based Higher Education and Training*.

Becker, Mark W., Reem Alzahabi, and Christopher J. Hopwood. 2012. "Media Multitasking is Associated with Symptoms of Depression and Social Anxiety." *Cyberpsychology, Behavior, and Social Networking* 16 (2): 132-135.

Becklen, R. and D. Cervone. 1983. "Selective Looking and the Noticing of Unexpected Events." *Memory & Cognition* 11 (6): 601-608.

Bedny, Gregory Z. and Steven Robert Harris. 2005. "The Systemic-Structural Theory of Activity: Applications to the Study of Human Work." *Mind, Culture, and Activity* 12 (2): 128-147.

Bedny, Gregory Z., Mark H. Seglin, and David Meister. 2000. "Activity Theory: History, Research and Application." *Theoretical Issues in Ergonomics Science* 1 (2): 168-206.

Bedny, Gregory and Waldemar Karwowski. 2006. *A Systemic-Structural Theory of Activity*. 1st ed. Baton Rouge: CRC Press.

Beheshti, Jamshid and Andrew Large. 2013. *The Information Behavior of a New Generation: Children and Teens in the 21st Century*. Plymouth: Scarecrow Press.

Bellman, S., J. A. Robinson, B. Wooley, and D. Varan. 2014. "The Effects of Social TV on Television Advertising Effectiveness." *Journal of Marketing Communications*. 23 (1): 73-91.

Bellman, Steven, John R. Rossiter, Anika Schweda, and Duane Varan. 2012. "How Coviewing Reduces the Effectiveness of TV Advertising." *Journal of Marketing Communications* 18 (5): 363-378.

Bem, D. J. 1972. "Self-Perception Theory." *Advances in Experimental Social Psychology* 6: 1-62.

Benbunan-Fich, Raquel, Rachel Adler, and Tamilla Mavlanova. 2011. "Measuring Multitasking Behavior with Activity-Based Metrics." *Transactions on Computer-Human Interaction* 18 (2): 1-22, ACM.

Berg, Martin. 2015. *Netnografi*. Greppbar Metod. 1. uppl. ed. Lund: Studentlitteratur.

Berman, Saul J., Steven Abraham, Bill Battino, Louisa Shipnuck, and Andreas Neus. 2007. "New Business Models for the New Media World." *Strategy & Leadership* 35 (4): 23-30.

Beuckels, Emma, Snezhanka Kazakova, Veroline Cauberghe, Liselot Hudders, and Patrick De Pelsmacker. 2019. "Freedom Makes You Lose Control." *European Journal of Marke*ting 53 (5): 848-870.

Bich-Carrière, Laurence. 2019. "Say it with [A Smiling Face with Smiling Eyes]: Judicial use and Legal Challenges with Emoji Interpretation in Canada." *International Journal for the Semiotics of Law*: 1-37.

Blodget, Henry. 2018. "Henry Blodget: 14 Things You'Ll Want to Know about the Future of Media." *Business Insider Australia*, accessed Oct 24, 2018.

Blumler, J. G. and E. Katz. 1974. *The Uses of Mass Communication*. Sage Annual Reviews of Communication Research. Beverly Hills, Calif. [u.a.]: Sage Publ.

Boase, Jeffrey and Rich Ling. 2013. "Measuring Mobile Phone use: Self-Report Versus Log Data." *Journal of Computer-Mediated Communication* 18 (4): 508-519.

Bolger, Niall, Angelina Davis, and Eshkol Rafaeli. 2003. "Diary Methods: Capturing Life as it is Lived." *Annual Review of Psychology* 54 (1): 579-616.

Bolger, Niall and Jean-Philippe Laurenceau. 2013. *Intensive Longitudinal Methods*. New York, NY [u.a.]: Guilford Press.

Borger, Robert. 1963. "The Refractory Period and Serial Choice-Reactions." *Quarterly Journal of Experimental Psychology* 15 (1): 1-12.

Borgers, Natacha, Edith de Leeuw, and Joop Hox. 2000. "Children as Respondents in Survey Research: Cognitive Development and Response Quality 1." *Bulletin De Méthodologie Sociologique* 66 (1): 60-75.

Bowler, Leanne and Valerie Nesset. 2013. "Information Literacy." In *The Information Behavior of a New Generation: Children and Teens in the 21st Century*, edited by Jamshid Beheshti and Andrew Large, 45-64. Plymouth: Scarecrow Press, Inc.

Bowman, Laura L., Laura E. Levine, Bradley M. Waite, and Michael Gendron. 2010. "Can Students really Multitask? an Experimental Study of Instant Messaging while Reading." *Computers & Education* 54 (4): 927-931.

Boychuk Duchscher, Judy E. and Debra Morgan. 2004. "Grounded Theory: Reflections on the Emergence Vs. Forcing Debate." *Journal of Advanced Nursing* 48 (6): 605-612.

Brasel, S. Adam and James Gips. 2011. "Media Multitasking Behavior: Concurrent Television and Computer Usage." *Cyberpsychology, Behavior and Social Networking* 14 (9): 527-534.

Brasel, S. Adam and James Gips. 2017. "Media Multitasking: How Visual Cues Affect Switching Behavior." *Computers in Human Behavior* 77: 258-265.

Briscoe, Gerard, Suzanne Sadedin, and Philippe De Wilde. 2011. "Digital Ecosystems: Ecosystem-Oriented Architectures." *Natural Computing* 10 (3): 1143-1194.

Broadbent, Donald E. 1958. *Perception and Communication*. Oxford: Pergamon Press.

Brodsky, Warren. 2001. "The Effects of Music Tempo on Simulated Driving Performance and Vehicular Control." *Transportation Research Part F: Psychology and Behaviour* 4 (4): 219-241.

Browaeys, Christine. 2019. *Materiality in the Digital Age: Human Beings Connected to Matter*. Presses universitaires de Grenoble.

Bruscaglioni, Livia. 2016. "Theorizing in Grounded Theory and Creative Abduction." *Quality & Quantity* 50 (5): 2009-2024.

Bryant, Antony. 2009. "Grounded Theory and Pragmatism: The Curious Case of Anselm Strauss." *Forum : Qualitative Social Research* 10 (3).

Bryman, Alan and Emma Bell. 2011. *Business Research Methods*. 3. ed. ed. Oxford [u.a.]: Oxford Univ. Press.

Brynjolfsson, Erik and Andrew McAfee. 2014. *The Second Machine Age*. 2. Auflage ed. Kulmbach: Plassen.

Burrell, Jenna. 2009. "The Fieldsite as a Network: A Strategy for Locating Ethnographic Research." *Field Methods* 21 (2): 181-199.

Cain, Matthew S., Julia A. Leonard, John D. E. Gabrieli, and Amy S. Finn. 2016. "Media Multitasking in Adolescence." *Psychonomic Bulletin & Review* 23 (6): 1932-1941.

Calamaro, Christina J., Thornton B. A. Mason, and Sarah J. Ratcliffe. 2009. "Adolescents Living the 24/7 Lifestyle: Effects of Caffeine and Technology on Sleep Duration and Daytime Functioning." *Pediatrics* 123 (6): e100-e1010.

Cambridge Dictionary. 2020. *Cambridge Online English Dictionary*. Accessed Mar 15, 2020.

Carduff, Emma, Scott A. Murray, and Marilyn Kendall. 2015. "Methodological Developments in Qualitative Longitudinal Research: The Advantages and Challenges of Regular Telephone Contact with Participants in a Qualitative Longitudinal Interview Study." *BMC Research Notes* 8 (1): 142.

Carr, Nicholas. 2008. "Is Google Making Us Stupid?" *Times* - News, Jun 15, 2008.

Carr, Nicholas. 2011. *The Shallows: What the Internet is Doing to our Brains*. New York: Norton.

Carrier, L. Mark, Nancy A. Cheever, Larry D. Rosen, Sandra Benitez, and Jennifer Chang. 2009. "Multitasking Across Generations: Multitasking Choices and Difficulty Ratings in Three Generations of Americans." *Computers in Human Behavior* 25 (2): 483-489.

Carrier, L. Mark, Larry D. Rosen, Nancy A. Cheever, and Alex F. Lim. 2015. "Causes, Effects, and Practicalities of Everyday Multitasking." *Developmental Review* 35: 64-78.

Case, Donald O. and Lisa M. Given. 2016. *Looking for Information*. 4th revised edition ed. Bingley: Emerald Group Publishing Limited.

Chang, Yuhmiin. 2017. "Why do Young People Multitask with Multiple Media? Explicating the Relationships among Sensation Seeking, Needs, and Media Multitasking Behavior." *Media Psychology* 20 (4): 685-703.

Charmaz, Kathy. 2006. *Constructing Grounded Theory*. Repr. ed. London [u.a.]: Sage.

Cheever, N. A., K. Peviani, and L. D. Rosen. 2018. "Media Multitasking and Mental Health." In *Technology and Adolescent Mental Health*, edited by M. Moreno and A. Radovic, 101-112. Cham: Springer.

Chen, Quan and Zheng Yan. 2016. "Does Multitasking with Mobile Phones Affect Learning? A Review." *Computers in Human Behavior* 54: 34-42.

Cherry, E. C. 1953. "Some Experiments on the Recognition of Speech, with One and Two Ears." *Journal of the Acoustical Society of America* 25 (9): 975-979.

Cherry, E. C. and W. K. Taylor. 1954. "Some further Experiments on the Recognition of Speech, with One and Two Ears." *Journal of the Acoustical Society of America* 26: 554-559.

Chiappetta, Marta. 2017. "The Technostress: Definition, Symptoms and Risk Prevention." *Senses and Sciences* 4 (1): 358-361.

Clowes, R. W. 2019. "Immaterial Engagement: Human Agency and the Cognitive Ecology of the Internet." *Phenomenology and the Cognitive Sciences* 18 (1): 259-279.

Cole, Charles. 2013. "Concepts, Propositions, Models, and Theories in Information Behavior Research." In *The Information Behavior of a New Generation: Children and Teens in the 21st Century*, edited by Jamshid Beheshti and Andrew Large, 1-22. Plymouth: Scarecrow Press, Inc.

Collins, Rebecca L. 2008. "Media Multitasking: Issues Posed in Measuring the Effects of Television Sexual Content Exposure." *Communication Methods and Measures* 2 (1-2): 65-79.

Corbin, Juliet M. and Anselm Strauss. 1990. "Grounded Theory Research: Procedures, Canons, and Evaluative Criteria." *Qualitative Sociology* 13 (1): 3-21.

Corley, Kevin G. and Dennis A. Gioia. 2004. "Identity Ambiguity and Change in the Wake of a Corporate Spin-Off." *Administrative Science Quarterly* 49 (2): 173-208.

Couldry, Nick. 2003. *Media Rituals: A Critical Approach.* 1. publ. ed. London u.a: Routledge.

Couldry, Nick. 2004. "Theorising Media as Practice." *Social Semiotics* 14 (2): 115-132.

Couldry, Nick. 2005. "Media Rituals: Beyond Functionalism." In *Media Anthropology*. Thousand Oaks: SAGE Publications, Inc.

Couldry, Nick and Joseph Turow. 2014. "Advertising, Big Data and the Clearance of the Public Realm: Marketers' New Approaches to the Content Subsidy." *International Journal of Communication* 8: 1710-1726.

Creamer, Lyle R. 1963. "Event Uncertainty, Psychological Refractory Period, and Human Data Processing." *Journal of Experimental Psychology* 66 (2): 187-194.

Creswell, John W. 1998. *Qualitative Inquiry and Research Design*. 4. print. ed. Thousand Oaks [u.a.]: Sage.

Crone, Eveline A. and Elly A. Konijn. 2018. "Media use and Brain Development during Adolescence." *Nature Communications* 9 (1): 588-10.

Cross, D. R. and S. G. Paris. 1988. "Development and Instructional Analyses of Children's Metacognition and Reading Comprehension." *Journal of Educational Psychology* 80 (2): 131-142.

Czarniawska, Barbara. 2007. *Shadowing and other techniques for doing fieldwork in modern societies*. Universitestförlaget.

Czarniawska, Barbara. 2013. "W hat Social Science Theory is, and what it is Not." In *What is Theory? Answers from the Social and Cultural Sciences*, edited by Hervé Corvellec.

Czerwinski, Mary, Eric Horvitz, and Susan Wilhite. 2004. "*A Diary Study of Task Switching and Interruptions*." Microsoft Research, USA, ACM.

Dabbish, Laura, Gloria Mark, and Víctor González. 2011. "Why do i Keep Interrupting Myself? Environment, Habit and Self-Interruption." *Proceedings of the SIGCHI Conference on Human Factor in Computing Systems*, ACM.

Dagognet, François. 1985. *Rematérialiser*. Paris: Vrin.

Daston, Lorraine, and Elizabeth Lunbeck. 2011. *Histories of Scientific Observation.* The University of Chicago Press.

Davenport, Thomas H., and John C. Beck. 2002. The Attention Economy: Understanding the New Currency of Business. Harvard Business Press.

De-Sola Gutiérrez, José, Fernando Rodríguez de Fonseca, and Gabriel Rubio. 2016. "Cell-Phone Addiction: A Review." *Frontiers in Psychiatry* 7: 175.

De Zengotita, Thomas. 2006. *Mediated: How the Media Shapes Your World and the Way You Live in It*. New York [u.a.]: Bloomsbury.

Denzin, N. and Y. Lincoln. 2000. "The Discipline and Practice of Qualitative Research." In *Handbook of Qualitative Research*, edited by N. K. Denzin and Y. S. Lincoln, 1-32. Thousand Oaks: Sage.

Deuze, Mark. 2012. *Media Life*. Cambridge: Polity.

DeWalt, Kathleen M., Billie R. DeWalt, and Coral B. Wayland. 2000. "Participant Observation." In *Handbook of Methods in Cultural Anthropology*, edited by Bernard Russel, 259-299. Lanham: Altamira Press.

Dhir, Amandeep, Yossiri Yossatorn, Puneet Kaur, and Sufen Chen. 2018. "Online Social Media Fatigue and Psychological wellbeing—A Study of Compulsive use, Fear of Missing Out, Fatigue, Anxiety and Depression." *International Journal of Information Managemen*t 40: 141-152.

Ditsa, George E. M. and Joseph Davis. 2000. "Activity Theory as a Theoretical Foundation for Information Systems Research.". In *Challenges of Information Technology Management in the 21st Century: Proceedings from Information Resources Management Association International Conference*, edited by Mehdi Khosrowpour, USA.

Doughty, Mark, Duncan Rowland, and Shaun Lawson. 2012. "Who is on Your Sofa?". *Proceedings of the 10th European Conference on Interactive TV and Video*, ACM.

Dubois, Anna, and Lasr-Erik Gadde. 2002. "Systematic combining: an abductive approach to case research." *Journal of Business Research* 55 (2022): 553-560.

Duff, Brittany R.L., Gunwoo Yoon, Zongyuan (Glenn) Wang, and George Anghelcev. 2014. "Doing it all: An Exploratory Study of Predictors of Media Multitasking." *Journal of Interactive Advertising* 14 (1): 11-23.

Duff, Brittany R.L. and Sela Sar. 2015. "Seeing the Big Picture: Multitasking and Perceptual Processing Influences on Ad Recognition." *Journal of Advertising* 44 (3): 173-184.

Duff, Brittany R.L. and Claire M. Segijn. 2019. "Advertising in a Media Multitasking Era: Considerations and Future Directions." *Journal of Advertising* 48 (1): 27-37.

Duffy, Athena, David L. Dawson, and Roshan das Nair. 2016. "Pornography Addiction in Adults: A Systematic Review of Definitions and Reported Impact." *Journal of Sexual Medicine* 13 (5): 760-777.

Duhigg, Charles. 2012. *The Power of Habit*. Kennett Square, Pa.: Soundview.

Duke, Éilish and Christian Montag. 2017. "Smartphone Addiction, Daily Interruptions and Self-Reported Productivity." *Addictive Behaviors Reports* 2017: 90-95.

Dzubak, Cora M. 2008. "Multitasking: The Good, the Bad and the Unknown." *Synergy: The Journal of the Association for the Tutoring Profession*.

Edwards, Kathleen S. and Myoungju Shin. 2017. "Media multiutasking and implicit learning." *Atten. Percept. Psychophys.* 79: 1535-1549.

Efimov, Valerii S. and Alla V. Lapteva. 2018. "The Future of Universities: Is Digitalization the Priority? (Expert View)." *Journal of Siberian Federal University. Humanities & Social Sciences* 11 (12): 1925-1946.

Eisenegger, Mark and Kurt Imhof. 2008. "The True, the Good and the Beautiful: Reputation Management in the Media Society." In *Public Relations Research. European and International Perspectives and Innovations*, edited by A. Zerfass, B. Van Ruler and K. Sriramesh, 125-146. Wiesbaden: VS Verlag.

Elhai, Jon D., Jason C. Levine, Robert D. Dvorak, and Brian J. Hall. 2016. "Fear of Missing Out, Need for Touch, Anxiety and Depression are Related to Problematic Smartphone Use." *Computers in Human Behavior* 63: 509-516.

Elliott, Robert and Ladislav Timulak. 2005. "Descriptive and Interpretive Approaches to Qualitative Research." In *A Handbook of Research Methods for Clinical and Health Psychology*: Oxford University Press.

Elmore, Tim. 2018. "The Unintended Consequences of Technology." *Psychology Today*., accessed Oct 24, 2018.

Engeström, Y. 1990. "When is a Tool? Multiple Meanings of Artifacts in Human Activity." In *Learning, Working and Imagining: Twelve Studies in Activity Theory*, edited by Y. Engeström. Helsinki: Orienta-Konsultit.

Engeström, Yrjö. 2001. "Expansive Learning at Work: Toward an Activity Theoretical Reconceptualization." *Journal of Education and Work* 14 (1): 133-156.

Ericsson ConsumerLab. 2018. *10 Hot Consumer Trends 2018*. Ericsson ConsumerLab Report.

Flavell, John H. 1979. "Metacognition and Cognitive Monitoring: A New Area of Cognitive-Developmental Inquiry." *American Psychologist* 34 (10): 906-911.

Flayelle, Maèva, Natale Canale, Claus Vögele, Laurent Karila, Pierre Maurage, and Joël Billieux. 2019. "Assessing Binge-Watching Behaviors: Development and Validation of the "Watching TV Series Motives" and "Binge-Watching Engagement and Symptoms" Questionnaires." *Computers in Human Behavior* 90: 26-36.

Foehr, U. G. 2006. *Media Multitasking among American Youth: Prevalence, Predictors and Pairings.* Kaiser Family Foundation, USA.

Fried, Carrie B. 2008. "In-Class Laptop use and its Effects on Student Learning." *Computers & Education* 50 (3): 906-914.

Fromm, Jeff, and Angie Read. 2018. *Marketing to Gen Z*. American Management Association.

Frosh, S. 2002. *Key Concepts in Psychoanalysis*. London: The British Library.

Fuchsberger, Verena, Martin Murer, and Manfred Tscheligi. 2013. "Materials, Materiality, and Media.". *Proceedings of the SIGCHI Conference on Human Factors in Computing*: 2853–2862, ACM.

Gazzaley, Adam and Larry D. Rosen. 2016. *The Distracted Mind: Ancient Brains in a High-Tech World*. Cambridge: The MIT Press

Geck, Caroline. 2006. "The Generation Z Connection: Teaching Information Literacy to the Newest Net Generation." *Teacher Librarian* 33 (3): 19.

George, Madeleine J. and Candice L. Odgers. 2015. "Seven Fears and the Science of how Mobile Technologies may be Influencing Adolescents in the Digital Age." *Perspectives on Psychological Science* 10 (6): 832-851.

Ghersetti, Marina and Oscar Westlund. 2018. "Habits and Generational Media Use." *Journalism Studies* 19 (7): 1039-1058.

Gil de Zúñiga, Homero, Victor Garcia-Perdomo, and Shannon C. McGregor. 2015. "What is Second Screening? Exploring Motivations of Second Screen use and its Effect on Online Political Participation." *Journal of Communication* 65 (5): 793-815.

Gillberg, Nanna. 2014. *Uppmärksamhets-samhället*. Lund: Studentlitteratur.

Gioia, Dennis A. and Evelyn Pitre. 1990. "Multiparadigm Perspectives on Theory Building." *The Academy of Management Review* 15 (4): 584.

Gioia, Dennis A., Kevin G. Corley, and Aimee L. Hamilton. 2013. "Seeking Qualitative Rigor in Inductive Research." *Organizational Research Methods* 16 (1): 15-31.

Glaser, Barney G. 1978. *Theoretical Sensitivity*. 4. print. ed. Mill Valley, Calif: Sociology Press.

Glaser, Barney G. 2012. "Constructivist Grounded Theory?" *Grounded Theory Review: An International Journal* 11 (1).

Glaser, Barney G. and Anselm L. Strauss. 1967. *The Discovery of Grounded Theory*. 1. publ. ed. Chicago: Aldine.

Glenn, David. 2010. "Divided Attention. in an Age of Classroom Multitasking, Scholars Probe the Nature of Learning and Memory." *The Chronicle of Higher Education*.

Guba, E. G. and Y. S. Lincoln. 1994. "Competing Paradigms in Qualitative Research." In *Handbook of Qualitative Research*, edited by N. K. Denzin & Y. S. Lincoln, 105-117. Thousand Oaks, CA: Sage.

Gulliksen, Jan. 2017. "Institutionalizing Human-Computer Interaction for Global Health." *Global Health Action* 10 (sup3): 1344003-73.

Hall, Edward. 1959. *The Silent Language*. Garden City, N.Y: Doubleday.

Hall, Edward. 1981. *Beyond Culture*. New York [u.a.]: Doubleday.

Hammer, Rachel, Molly Dingel, Jenny Ostergren, Katherine Nowakowski, and Barbara Koenig. 2012. "The Experience of Addiction as Told by the Addicted: Incorporating Biological Understandings into Self-Story." *Culture, Medicine, and Psychiatry* 36 (4): 712-734.

Hammer, Ronen, Miki Ronen, Amit Sharon, Tali Lankry, Yoni Huberman, and Victoria Zamtsov. 2010. "Mobile Culture in College Lectures: Instructors' and Students' Perspectives." *Interdisciplinary Journal of E-Learning and Learning Objects* 6: 293-304.

Hammersley, Martyn and Paul Atkinson. 2007. *Ethnography*. Third edition ed. London ; New York: Routledge.

Hanna, Richard, Andrew Rohm, and Victoria L. Crittenden. 2011. "We're all Connected: The Power of the Social Media Ecosystem." *Business Horizons*, May 1st 2011, 265.

Hansen, Anders. 2019a. *Skärmhjärnan - Hur En Hjärna i Osynk Med Sin Tid Kan Göra Oss Stressade, Deprimerade Och Ångestfyllda*. Bonnier Fakta.

Hansen, Anders. 2019b. *Din Hjärna: Vårt Digitala Liv*. TV-documentary, SVT.

Hardy, Bruce W. and Jessica Castonguay. 2018. "The Moderating Role of Age in the Relationship between Social Media use and Mental Well-being: An Analysis of the 2016 General Social Survey." *Computers in Human Behavior* 85: 282-290.

Harrison, Steve, Deborah Tatar, and Phoebe Sengers. 2007. "The Three Paradigms of HCI." *CHI 2007*, San Jose, USA. ACM

Hasan, Md Rajibul, Ashish Kumar Jha, and Yi Liu. 2018. "Excessive use of Online Video Streaming Services: Impact of Recommender System use, Psychological Factors, and Motives." *Computers in Human Behavior* 80: 220-228.

Heinonen, Kristina. 2011. "Consumer Activity in Social Media: Managerial Approaches to Consumers' Social Media Behavior." *Journal of Consumer Behaviour* 10 (6): 356-364.

Hektner, Joel M., Jennifer A. Schmidt, and Mihaly Csikszentmihalyi. 2007. *Experience Sampling Method*. Thousand Oaks [u.a.]: Sage.

Herbranson, Walter T. 2017. "Selective and Divided Attention in Comparative Psychology." In *APA Handbook of Comparative Psychology: Perception, Learning, and Cognitio*n, 183-201. US: American Psychological Association.

Holden, Constance. 2001. "'Behavioral' Addictions: Do they Exist?" *Science* 294 (5544): 980-982.

Holland, Janet, Rachel Thomson, and Sheila Henderson. 2006. *Qualitative Longitudinal Research: A Discussion Paper*. Families & Social Capital ESRC Research Group, London.

Hollingworth, Andrew and Valerie M. Beck. 2016. "Memory-Based Attention Capture when Multiple Items are Maintained in Visual Working Memory." *Journal of Experimental Psychology. Human Perception and Performance* 42 (7): 911-917.

Holton, Judith A. and Isabelle Walsh. 2017. *Classic Grounded Theory*. SAGE.

Hwang, Yoori, HyoungJee Kim, and Se-Hoon Jeong. 2014. "Why do Media Users Multitask? Motives for General, Medium-Specific, and Content-Specific Types of Multitasking." *Computers in Human Behavior* 36: 542-548.

Hämäläinen, Markko. 2014. "*Renaissance Entrepreneurship: A Grounded Theory of Entrepreneurial Recycling*". Doctoral dissertation. Aalto University.

Idean. 2013. *Mobile Content Market in Finland 2012-2016*, Teleforum.

Ihde, Don. 2012. *Experimental Phenomenology: Multistabilities*. Albany: State University of New York Press.

Innis, Harold. 1951. *The Bias of Communication*. Toronto University Press.

Jacob, Pierre. 2019. "Intentionality." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. Vol. Spring 2019 Edition.

Jacobsen, Wade C. and Renata Foerste. 2011. "The Wired Generation: Academic and Social Outcomes of Electronic Media use among University Students." *Cyberpsychology, Behavior, and Social Networking* 14 (5): 275-280.

Janssen, Christian P., Sandy J. J. Gould, Simon Y. W. Li, Duncan P. Brumby, and Anna L. Cox. 2015. "Integrating Knowledge of Multitasking and Interruptions Across Different Perspectives and Research Methods*." International Journal of Human - Computer Studies* 79: 1-5.

Jarden, Aaron. 2011. "An Interview with Daniel Kahneman." *International Journal of Wellbeing* 1 (1).

Jenkins, Henry. 2006. *Convergence Culture: Where Old and New Media Collide*. New York: NYU Press.

Jenner, Mareike. 2018. "Introduction: Binge-Watching Netflix." In *Netflix and the Re-Invention of Television*, 109-118: Palgrave Macmillan, Cham.

Jensen, Mads and Jesper Aagaard. 2018. "A Postphenomenological Method for HCI Research." *The 30th Australian Conference on Computer-Human Interaction*, ACM.

Jeong, Se-Hoon and Martin Fishbein. 2007. "Predictors of Multitasking with Media: Media Factors and Audience Factors." *Media Psychology* 10 (3): 364-384.

Jeong, Se-Hoon, Weiyu Zhang, Martin Fishbein, Elisabeth Davis, Amy Bleakley, and u.a. 2010. "Multiple Media use and Multitasking with Media among High School and College Students." In *The Interrelationship of Business and Communication*, 413-434.

Jeong, Se-Hoon and Yoori Hwang. 2012. "Does Multitasking Increase or Decrease Persuasion? Effects of Multitasking on Comprehension and Counterarguing." *Journal of Communication* 62 (4): 571-587.

Johansson, Anna. 2019 "Why We're Living in a Dark Age of Technological Distraction." *Podium | The Next Web*, accessed Nov 19th, 2019

Johnson, R. Burke and Anthony J. Onwuegbuzie. 2004. "Mixed Methods Research: A Research Paradigm Whose Time has Come." *Educational Researcher* 33 (7): 14-26

Jonsson, Pernilla, Patrik Stoopendahl, and Malin Sundström. 2015. *Köprevolutionen*. Stockholm: Liber.

Judd, Terry. 2013. "Making Sense of Multitasking: Key Behaviours." *Computers & Education* 63: 358-367.

Junco, Reynol. 2012. "In-Class Multitasking and Academic Performance." *Computers in Human Behavior* 28 (6): 2236-2243.

Junco, Reynol and Shelia R. Cotten. 2011. "Perceived Academic Effects of Instant Messaging Use." *Computers & Education* 56 (2): 370-378.

Junco, Reynol and Shelia R. Cotten. 2012. "No A 4 U: The Relationship between Multitasking and Academic Performance." *Computers & Education* 59 (2): 505-514.

Kahneman, Daniel. 1973. *Attention and Effort*. 1. print. ed. Englewood Cliffs, N.J: Prentice-Hall.

Kahneman, Daniel and Jason Riis. 2005. "Living, and Thinking about it: Two Perspectives on Life." In *The Science of Well-Being*. Oxford: Oxford University Press.

Kallinen, Sami and Jens Berg. 2019. *Unga Och Valet Av Nyhetsämnen - En Analys Av 29 Olika Nyhetsmedier*. Tankesmedjan Agenda.

Kaptelinin, V. 1996. "Computer-Mediated Activity: Functional Organs in Social and Developmental Context." In *Context and Consciousness: Activity Theory and Human-Computer Interaction*, edited by B. A. Nardi, 235-245: The MIT Press.

Kaptelinin, Victor. 2005. "The Object of Activity: Making Sense of the Sense-Maker." *Mind, Culture, and Activity* 12 (1): 4-18.

Kaptelinin, Victor and Bonnie A. Nardi. 2006. *Acting with Technology*. Cambridge, Mass. [u.a.]: MIT Press.

Kaptelinin, Victor and Bonnie Nardi. 2018. "Activity Theory as a Framework for Human-Technology Interaction Research." *Mind, Culture, and Activity* 25 (1): 3-5.

Karanasios, Stan. 2018. "Toward a Unified View of Technology and Activity." *Information Technology & People* 31 (1): 134-155.

Karvalics, L. Z. 2007. Information society – What is it exactly? The meaning, history and conceptual framework of an expression. In *Information society: From theory to political practice*. Edited by P. Róbert and K. Attila. Gondolat, Budapest.

Katidioti, Ioanna, Jelmer P. Borst, Marieke K. van Vugt, and Niels A. Taatgen. 2016. "Interrupt Me: External Interruptions are Less Disruptive than Self-Interruptions." *Computers in Human Behavior* 63: 906-915.

Katz, Elihu, Jay G. Blumler, and Michael Gurevtich. 1974. "Utilization of Mass Communication by the Individual." *Sage Annual Reviews of Communication Research* 3: 19.

Kaun, Anne. 2010. "Open-Ended Online Diaries: Capturing Life as it is Narrated." *International Journal of Qualitative Methods* 9 (2): 133-148.

Kauppinen, T. and J. Kivikoski. 2015. *Mobiilikatsominen Arkipäiväistyy*. Prior Konsultointi Oy.

Kawulich, Barbara B. 2005. "Participant Observation as a Data Collection Method." *Forum: Qualitative Social Research* 6 (2).

Kazakova, Snezhanka, Veroline Cauberghe, Mario Pandelaere, and Patrick De Pelsmacker. 2015. "Can't See the Forest for the Trees? the Effect of Media Multitasking on Cognitive Processing Style." *Media Psychology* 18 (4): 425-450.

Keaveney, Susan M. 1995. "Customer Switching Behavior in Service Industries: An Exploratory Study." *Journal of Marketing* 59 (2): 71-82.

Keener, Kayla. 2018. "Affect, Aesthetics, and Attention: The Digital Spread of Fake News Across the Political Spectrum." In *Affect, Emotion, and Rhetorical Persuasion in Mass Communication Theories and Case Studies*, edited by Lei Zhang and Carlton Clark. New York: Routledge.

Keles, Betul, Niall McCrae, and Annmarie Grealish. 2019. "A Systematic Review: The Influence of Social Media on Depression, Anxiety and Psychological Distress in Adolescents." *International Journal of Adolescence and Youth*: 1-15.

Kelle, U. (2005). "Emergence" vs. "Forcing" of Empirical Data? A Crucial Problem of "Grounded Theory" Reconsidered. *Forum: Qualitative Social Research*, 6(2)

Kilian, Thomas, Nadine Hennigs, and Sascha Langner. 2012. "Do Millennials Read Books Or Blogs? Introducing a Media Usage Typology of the Internet Generation." *Journal of Consumer Marketing* 29 (2): 114-124.

Kim, Eun Joo, EunYoung Kim, and Inhyo Cho. 2017. "Structural Equation Model of Smartphone Addiction Based on Adult Attachment Theory: Mediating Effects of Loneliness and Depression." *Asian Nursing Research* 11 (2): 92-97.

Kim, Joshua. 2019. "*'Digital Transformation' and the University | Inside Higher Ed.*", accessed Nov 11, 2019.

Kincheloe, Joe L. 2001. "Describing the Bricolage: Conceptualizing a New Rigor in Qualitative Research." *Qualitative Inquiry* 7 (6): 679-692.

Kinzie, Mable B., Stephen D. Whitaker, and Mark J. Hofer. 2005. "Instructional Uses of Instant Messaging (IM) during Classroom Lectures." *Journal of Educational Technology & Society* 8 (2).

Kirchberg, Daniela M., Robert A. Roe, and Wendelien Van Eerde. 2015. "Polychronicity and Multitasking: A Diary Study at Work." *Human Performance* 28 (2): 112-136.

Kirschner, Paul A. and Aryn C. Karpinski. 2010. "Facebook® and Academic Performance." *Computers in Human Behavior* 26 (6): 1237-1245.

Kiviluoto, Johanna. 2015. "Information Literacy and Diginatives: Expanding the Role of Academic Libraries." *IFLA Journal* 41 (4): 308-316.

Kononova, Anastasia. 2013. "Multitasking Across Borders: A Cross-National Study of Media Multitasking Behaviors, its Antecedents, and Outcomes." *International Journal of Communication* (Online): 1688.

Kononova, Anastasia and Shupei Yuan. 2017. "Take a Break: Examining College Students' Media Multitasking Activities and Motivations during Study- Or Work-Related Tasks." *Journalism & Mass Communication Educator* 72 (2): 183-197.

Kononova, Anastasia and Yi-Hsuan Chiang. 2015. "Why do we Multitask with Media? Predictors of Media Multitasking among Internet Users in the United States and Taiwan." *Computers in Human Behavior* 50: 31-41.

Konrath, Sara, Brian P. Meier, and Brad J. Bushman. 2014. "Development and Validation of the Single Item Narcissism Scale (SINS)." *PloS One* 9 (8): e103469.

Kraut, Robert, Sara Kiesler, Bonka Boneva, Jonathon Cummings, Vicki Helgeson, and Anne Crawford. 2002. "Internet Paradox Revisited." *Journal of Social Issues* 58 (1): 49-74.

Kristensson Uggla, Bengt. 2019. *En Strävan Efter Sanning: Vetenskapens Teori och Praktik*. Lund: Studentlitteratur.

Krüger, Steffen and Jacob Johanssen. 2016. "Thinking (with) the Unconscious in Media and Communication Studies: Introduction to the Special Issue." *CM Communication and Media* 11 (38): 5-40.

Krych, Raymond. 1988. "Abnormal Consumer Behavior: A Model of Addictive Behaviors." *Advances in Consumer Research* 16: 745.

Kutsche, Paul. 1998. *Field Ethnography*. Upper Saddle River, NJ: Prentice Hall.

Kuutti, K. 1991. "Activity Theory and its Applications to Information Systems Research and Development." In *Information Systems Research: Contemporary Approaches & Emergent Traditions*, edited by H. E. Nissen, H. K. Klein and R. A. Hirschheim, 529-549. Amsterdam: North-Holland.

Kuutti, K. 1996. "Activity Theory as a Potential Framework for Human-Computer Interaction Research." In *Context and Consciousness: Activity Theory and Human-Computer Interaction*, edited by B. Nardi, 17-44. Cambridge, MA: MIT Press.

Kwon, Min, Dai-Jin Kim, Hyun Cho, and Soo Yang. 2013. "The Smartphone Addiction Scale: Development and Validation of a Short Version for Adolescents." *PloS One* 8 (12).

Kämpfe, Juliane, Peter Sedlmeier, and Frank Renkewitz. 2011. "The Impact of Background Music on Adult Listeners: A Meta-Analysis." *Psychology of Music* 39 (4): 424-448.

Lai, Emily R. 2011. *Metacognition: A Literature Review*. Pearson.

Lanaj, Klodiana, Russell E. Johnson, and Christopher M. Barnes. 2014. "Beginning the Workday Yet Already Depleted? Consequences of Late-Night Smartphone use and Sleep." *Organizational Behavior and Human Decision Processes* 124 (1): 11-23.

Lang, Annie. 2000. "The Limited Capacity Model of Mediated Message Processing." *Journal of Communication* 50 (1): 46-70.

LaRose, Robert, Carolyn A. Lin, and Matthew S. Eastin. 2003. "Unregulated Internet Usage: Addiction, Habit, Or Deficient Self-Regulation?" *Media Psychology* 5 (3): 225-253.

LaRose, Robert and Matthew S. Eastin. 2004. "A Social Cognitive Theory of Internet Uses and Gratifications: Toward a New Model of Media Attendance." *Journal of Broadcasting & Electronic Media* 48 (3): 358-377.

Latour, Bruno. 1987. *Science in Action*. Milton Keynes: Open University Press.

Latour, Bruno. 2005. *Reassembling the Social*. 1. publ. Oxford [u.a.]: Oxford University Press.

Lau, Theodora. 2019. "When AI Becomes a Part of our Daily Lives." *Harvard Business Review*.

Laurell, Christofer and Anders Parment. 2015. *Marketing Beyond the Textbook*. 1. ed. Lund: Studentlitteratur.

Law, John. 2004. *After Method*. 1. publ. ed. London [u. a.]: Routledge.

Laxman, K. 2013. *Developing Digital Literacy and Problem-Solving Skills in Students*. 3rd ed. Saarbrücken: Lambert Publishing.

Lee, Jennifer, Lin Lin, and Tip Robertson. 2012. "The Impact of Media Multitasking on Learning." *Learning, Media and Technology* 37 (1): 94-11.

Leeman, Robert and Marc Potenza. 2012. "Similarities and Differences between Pathological Gambling and Substance use Disorders: A Focus on Impulsivity and Compulsivity." *Psychopharmacology* 219 (2): 469-490.

Leitch, Claire M., Frances M. Hill, and Richard T. Harrison. 2010. "The Philosophy and Practice of Interpretivist Research in Entrepreneurship." *Organizational Research Methods* 13 (1): 67-84.

Leont′ev, Aleksej N. 1978. *Activity, Consciousness, and Personality*. Englewood Cliffs, NJ: Prentice-Hall.

Leroy, Sophie. 2009. "Why is it so Hard to do My Work? the Challenge of Attention Residue when Switching between Work Tasks." *Organizational Behavior and Human Decision Processes* 109 (2): 168-181.

Levine, Laura E., Bradley M. Waite, and Laura L. Bowman. 2007. "Electronic Media use, Reading, and Academic Distractibility in College Youth." *CyberPsychology & Behavior* 10 (4): 560-566

Levy, Jonathan and Harold Pashler. 2001. "Is Dual-Task Slowing Instruction Dependent?" *Journal of Experimental Psychology: Human Perception and Performance* 27 (4): 862-869.

Leysens, Jean-Louis, Daniel le Roux, and Douglas Parry. 2016. "Can I have Your Attention, Please?". *The Annual Conference of the South African Institute of Computer Scientists and Information Technologists*, ACM.

Lievrouw, Leah A. 2014. "Materiality and Media in Communication and Technology Studies." In *Media Technologies*. The MIT Press.

Lim, Sohye and Hongjin Shim. 2016. "Who Multitasks on Smartphones? Smartphone Multitaskers' Motivations and Personality Traits." *Cyberpsychology, Behavior, and Social Networking* 19 (3): 223-227.

Lin, Lin and Thomas Parsons. 2018. "Ecologically Valid Assessments of Attention and Learning Engagement in Media Multitaskers." *TechTrends*, 518-524.

Lin, Yu-Hsuan, Yu-Cheng Lin, Yang-Han Lee, Po-Hsien Lin, Sheng-Hsuan Lin, Li-Ren Chang, Hsien-Wei Tseng, Liang-Yu Yen, Cheryl C. H. Yang, and Terry B. J. Kuo. 2015. "Time Distortion Associated with Smartphone Addiction: Identifying Smartphone Addiction Via a Mobile Application (App)." *Journal of Psychiatric Research* 65: 139-145.

Lindgren, Simon. 2017. *Digital Media & Society*. London: SAGE Publications Ltd.

Lindquist, Jay D. and Carol Kaufman-Scarborough. 2007. "The Polychronic—Monochronic Tendency Model." *Time & Society* 16 (2-3): 253-285.

Liu, Yiqun, Chao Wang, Ke Zhou, Jianyun Nie, Min Zhang, and Shaoping Ma. 2014. "From Skimming to Reading: A Two-Stage Examination Model for Web Search." *Proceedings of the 23rd ACM International Conference on Conference on Information and Knowledge Management*: 849–858, ACM.

Liukas, Christa. 2019. *We all Need to Understand what Digitalisation Means*. University of Helsinki., accessed Nov 11, 2019.

Lopez, Jesus and Joseph Orr. 2018. "Media Multitasking Negatively Impacts Cognitive Flexibility." *PsyArXiv*, 26 aug 2018. Web.

Loukopoulos, Loukia D., R. Key Dismukes, and Immanuel Barshi. 2001. "Cockpit Interruptions and Distractions: A Line Observation Study." *11th International Symposium on Aviation Psychology*.

Loukopoulos, Loukia D., R. Key Dismukes, and Immanuel Barshi. 2009. *The Multitasking Myth*. Farnham [u.a.]: Ashgate.

Lui, Kelvin F. H. and Alan C. -N Wong. 2012. "Does Media Multitasking Always Hurt? A Positive Correlation between Multitasking and Multisensory Integration." *Psychonomic Bulletin & Review* 19 (4): 647-653.

Luoma-Aho, Vilma. 2012. *What is Expected of the Media in a Reputation Society?*. University of Jyväskylä.

Mackenzie, N. and S. Knipe. 2006. "Research Dilemmas: Paradigms, Methods and Methodology." *Issues in Educational Research* 16 (2): 193-205.

Madden, M., A. Lenhart, M. Duggan, S. Cortesi, and U. Gasser. 2013. *Teens and Technology 2013*. PEW Research Center.

Mansy, Ahmed, Mostafa Ammar, Jaideep Chandrashekar, and Anmol Sheth. 2013. "Characterizing Client Behavior of Commercial Mobile Video Streaming Services.". *Proceedings of Workshop on Mobile Video Delivery*: 1–6, ACM.

Mantere, Saku and Mikko Ketokivi. 2013. "Reasoning on Organization Science." *The Academy of Management Review* 38 (1): 70-89-

Margaryan, Anoush, Allison Littlejohn, and Gabrielle Vojt. 2011. "Are Digital Natives a Myth Or Reality? University Students' use of Digital Technologies." *Computers & Education* 56 (2): 429-440.

Markham, Tim. 2017. *Media and Everyday Life*. London: Palgrave.

Marty-Dugas, Jeremy, Brandon C. W. Ralph, Jonathan M. Oakman, and Daniel Smilek. 2018. "The Relation between Smartphone use and Everyday Inattention." *Psychology of Consciousness: Theory, Research, and Practice* 5 (1): 46-62.

Maslovat, Dana, Romeo Chua, Hunter C. Spencer, Christopher J. Forgaard, Anthony N. Carlsen, and Ian M. Franks. 2013. "Evidence for a Response Preparation Bottleneck during Dual-Task Performance: Effect of a Startling Acoustic Stimulus on the Psychological Refractory Period." *Acta Psychologica* 144 (3): 481-487.

Maxwell, Joseph Alex. 2013. *Qualitative Research Design. Applied Social Research Methods Series*. 3. edition ed. Vol. 41. Los Angeles: Sage.

May, Kaitlyn and Anastasia Elder. 2018. "Efficient, Helpful, Or Distracting? A Literature Review of Media Multitasking in Relation to Academic Performance." *International Journal of Educational Technology in Higher Education* 15 (1): 1-17.

McLeod, S. A. 2018. "Selective Attention." *Simply Psychology*.

McLuhan, Marshall. 1964. *Understanding Media*. London [u.a.]: Routledge.

McLuhan, Marshall and Quentin Fiore. 1967. *The Medium is the Message*. Harmondsworth, Middlesex: Penguin Books.

McQuail, Denis. 1983. *Mass Communication Theory: An Introduction*. London: Sage.

Meadows, Angela, Laurence J. Nolan, and Suzanne Higgs. 2017. "Self-Perceived Food Addiction: Prevalence, Predictors, and Prognosis." *Appetite* 114: 282-298.

Menke, Manuel and Christian Schwarzenegger. 2019. "On the Relativity of Old and New Media: A Lifeworld Perspective." *Convergence: The International Journal of Research into New Media Technologies* 25 (4): 657-672.

Merikivi, Jani, Antti Salovaara, Matti Mäntymäki, and Lilong Zhang. 2018. "On the Way to Understanding Binge Watching Behavior: The Over-Estimated Role of Involvement." Electronic Markets 28 (1): 111-122.

Merriam-Webster. 2020. *Merriam-Webster Online Dictionary*. Accessed Mar 15, 2020.

Metcalfe, Janet and Walter Mischel. 1999. "A Hot/Cool-System Analysis of Delay of Gratification." *Psychological Review* 106 (1): 3-19.

Meyrowitz, Joshua. 1986. *No Sense of Place: The Impact of Electronic Media on Social Behavior*. Acls Humanities E-Book. New York: Oxford University Press.

Miller, Geoffrey. 2012. "The Smartphone Psychology Manifesto." *Perspectives on Psychological Science* 7 (3): 221-237.

Mills, K. L. (2016). "Possible Effects of Internet Use on Cognitive Development in Adolescence". *Media and communication* 4 (3): 4-12.

Minear, Meredith, Faith Brasher, Mark McCurdy, Jack Lewis, and Andrea Younggren. 2013. "Working Memory, Fluid Intelligence, and Impulsiveness in Heavy Media Multitaskers." *Psychonomic Bulletin & Review* 20 (6): 1274-1281.

Misra, Shalini, Lulu Cheng, Jamie Genevie, and Miao Yuan. 2016. "The iPhone Effect." *Environment and Behavior* 48 (2): 275-298.

Moisala, Mona. 2017. *Media Multitasking Linked to Distractibility among Youth*. Doctoral dissertation. University of Helsinki.

Mokhtari, Kouider, Julie Delello, and Carla Reichard. 2015. "Connected Yet Distracted: Multitasking among College Students." *Journal of College Reading and Learning* 45 (2): 164-180.

Morahan-Martin, Janet and Phyllis Schumacher. 2003. "Loneliness and Social Uses of the Internet." *Computers in Human Behavior* 19 (6): 659-671.

Morgan, Julian. 2017. "*The Secret Ways Social Media is Built for Addiction*.". Vice. Accessed Oct 3, 2019.

Muter, Paul and Paula Maurutto. 1991. "Reading and Skimming from Computer Screens and Books: The Paperless Office Revisited?" *Behaviour & Information Technology* 10 (4): 257-266.

Napoli, Philip M. 2011. *Audience Evolution*. New York [u.a.]: Columbia University Press.

Nardi, Bonnie A. 1996. "Studying Context: A Comparison of Activity Theory, Situated Action Models, and Distributed Cognition." In *Context and Consciousness: Activity Theory and Human-Computer Interaction*, 69-102. Cambridge, MA: MIT Press.

Natale, Simone. 2016. "There are no Old Media." *Journal of Communication* 66 (4): 585-603.

Neale, Bren and Jennifer Flowerdew. 2003. "Time, Texture and Childhood: The Contours of Longitudinal Qualitative Research." *International Journal of Social Research Methodology* 6 (3): 189-199.

Negroponte, Nicholas. 1995. *Being Digital*. 1. ed., 12. print. ed. New York: Knopf.

Neisser, Ulric and Robert Becklen. 1975. "Selective Looking: Attending to Visually Specified Events." *Cognitive Psychology* 7 (4): 480-494.

Newman, Nic, Richard Fletcher, Antonis Kalogeropoulos, David Levy, and Rasmus Kleis Nielsen. 2017. *Reuters Institute Digital News Report 2017*. Reuters Institute for the Study of Journalism.

Newman, Nic, Richard Fletcher, Antonis Kalogeropoulos, David Levy, and Rasmus Kleis Nielsen. 2018. *Reuters Institute Digital News Report 2018*. Reuters Institute for the Study of Journalism.

Newman, Nic, Richard Fletcher, Antonis Kalogeropoulos, and Rasmus Kleis Nielsen. 2019. *Reuters Institute Digital News Report 2019*. Reuters Institute for the Study of Journalism.

Nida-Rümelin, Martine. 2014. "Basic Intentionality, Primitive Awareness, and Awareness of Oneself." In *Mind, Values, and Metaphysics*, edited by A. Reboul, 261-290. Cham: Springer.

Nielsen's Insights. 2019. *Time Flies: U.S. Adults Now Spend Nearly Half a Day Interacting with Media*. Accessed Nov 11, 2019.

Nijboer, Menno, Jelmer P. Borst, Dirk van Rijn, and Niels A. Taatgen. 2016. "Driving and Multitasking: The Good, the Bad, and the Dangerous." *Frontiers in Psychology* 7: 1718.

Nokia. 2017. *Nokia: Our History*. Accessed Mar 7, 2017.

Nygren, Lennart and Björn Blom. 2001. "Analysis of Short Reflective Narratives: A Method for the Study of Knowledge in Social Workers' Actions." *Qualitative Research* 1 (3): 369-384.

Ophir, Eyal, Clifford Nass, Anthony D. Wagner, and Michael I. Posner. 2009. "Cognitive Control in Media Multitaskers." *Proceedings of the National Academy of Sciences of the United States of America* 106 (37): 15583-15587.

Oulasvirta, Antti, Tye Rattenbury, Lingyi Ma, and Eeva Raita. 2012. "Habits make Smartphone use More Pervasive." *Personal and Ubiquitous Computing* 16 (1): 105-114.

Papper, R. A., M. E. Holmes, and M. N. Popovich. 2004. "Middletown Media Studies: Media Multitasking and how Much People really use the Media." *The International Digital Media and Arts Association Journal* 1: 9-50.

Parry, Douglas A. and Daniel B. le Roux. 2019. "Media Multitasking and Cognitive Control: A Systematic Review of Interventions." *Computers in Human Behavior* 92: 316-327.

Parry, Douglas A., Daniel B. le Roux, and Jason R. Bantjes. 2019. "Testing the Feasibility of a Media Multitasking Self-Regulation Intervention for Students: Behaviour Change, Attention, and Self-Perception." *Computers in Human Behavior*: 106182.

Patil, R., M. Brown, M. Ibrahim, J. Myers, K. Brown, M. Khan, and R. Callaway. 2019. "Digital Distraction Outside the Classroom: An Empirical Study." *Journal of Computing Sciences in Colleges* 34 (7): 46-55.

Payne, Stephen J., Geoffrey B. Duggan, and Hansjörg Neth. 2007. "Discretionary Task Interleaving." *Journal of Experimental Psychology: General* 136 (3): 370-388.

Pea, Roy, Clifford Nass, Lyn Meheula, Marcus Rance, Aman Kumar, Holden Bamford, Matthew Nass, et al. 2012. "Media use, Face-to-Face Communication, Media Multitasking, and Social Well-being among 8- to 12-Year-Old Girls." *Developmental Psychology* 48 (2): 327.

Petty, Richard E. and John T. Cacioppo. 1984. "Source Factors and the Elaboration Likelihood Model of Persuasion." *Advances in Consumer Research* 11: 668.

Pilotta, Joseph J. and Don Schultz. 2005. "Simultaneous Media Experience and Synesthesia." *Journal of Advertising Research* 45 (1): 19-26.

Poplawska, Agnieszka, Malgorzata Osowiecka, and Justyna Kramarczyk. 2015. "Media Multitasking: The Specificity of the Construct and a Multicultural Context." *International Business and Global Economy* 34: 163-174.

Potter, W. James. 2012. *Media Effects*. Los Angeles [u.a.]: SAGE.

Prensky, Marc. 2001. "Digital Natives, Digital Immigrants Part 1." *On the Horizon* 9 (5): 1-6

Przybylski, Andrew K., Kou Murayama, Cody R. DeHaan, and Valerie Gladwell. 2013. "Motivational, Emotional, and Behavioral Correlates of Fear of Missing Out." *Computers in Human Behavior* 29 (4): 1841-1848.

Qualman, Erik. 2013. *Socialnomics*. Second edition ed. New Jersey: John Wiley & Sons, Inc.

Ralph, Brandon C. W., Alyssa C. Smith, Paul Seli, and Daniel Smilek. 2019a. "The Relation between Task-Unrelated Media Multitasking and Task-Related Motivation." *Psychological Research*, Sept 2019: 1-15.

Ralph, Brandon C. W., Alyssa C. Smith, Paul Seli, and Daniel Smilek. 2019b. "Yearning for Distraction: Evidence for a Trade-Off between Media Multitasking and Mind Wandering." *Canadian Journal of Experimental Psychology* 74 (1) 56-72.

Ralph, Brandon C. W., David R. Thomson, James Allan Cheyne, and Daniel Smilek. 2014. "Media Multitasking and Failures of Attention in Everyday Life." *Psychological Research* 78 (5): 661-669.

Raschke, Carl A. 2003. *The Digital Revolution and the Coming of the Postmodern University*. 1. Publ. London [u.a.]: Routledge Falmer.

Redick, Thomas S., Zach Shipstead, Matthew E. Meier, Janelle J. Montroy, Kenny L. Hicks, Nash Unsworth, Michael J. Kane, D. Zachary Hambrick, and Randall W. Engle. 2016. "Cognitive Predictors of a Common Multitasking Ability: Contributions from Working Memory, Attention Control, and Fluid Intelligence." *Journal of Experimental Psychology. General* 145 (11): 1473-1492.

Reichertz, Jo. 2009. "Abduction: The Logic of Discovery of Grounded Theory." *Forum: Qualitative Social Research* 11 (1), Web.

Reis, Harry T., Shelly L. Gable, and Michael R. Maniaci. 2014. "Methods for Studying Everyday Experience in its Natural Context." In *Handbook of Research Methods in Social and Personality Psychology*, 373-403: Cambridge University Press.

Rice, Ronald E., Ingunn Hagen and Nicole Zamanzadeh. 2018. "Media mastery. Paradoxes in College Students' Use of Computers and Mobile Phones." *American Behavioral Scientist* 62 (9): 1229-1250.

Rideout, Victoria J., Ulla G. Foehr, and Donald F. Roberts. 2010. *Generation M2: Media in the Lives of 8- to 18-Year-Olds*. Kaiser Family Foundation.

Riessman, Catherine Kohler. 2005. "Narrative Analysis." In *Narrative, Memory & Everyday Life*, 1-7. Huddersfield: University of Huddersfield.

Riordan, Benjamin C., Jayde A. M. Flett, John A. Hunter, Damian Scarf, and Tamlin S. Conner. 2015. "Fear of Missing Out (FoMO): The Relationship between FoMO, Alcohol use, and Alcohol-Related Consequences in College Students." *Journal of Psychiatry and Brain Functions* 2 (1): 9.

Ritzer, George, Paul Dean, and Nathan Jurgenson. 2012. "The Coming Age of the Prosumer." *American Behavioral Scientist* 56 (4): 379-398.

Robinson, Helen R. 2017. "Individuals' Preference for Multiple Media use – Underlying Motives." *Qualitative Market Research: An International Journal* 20 (4): 435-451.

Rosen, Larry. 2010. *Rewired: Understanding the iGeneration and the Way they Learn*. 1. publ. New York: Palgrave Macmillan.

Rosen, Larry. 2012. *iDisorder*. 1. Ed. New York: Palgrave Macmillan.

Rosen, Larry. 2017. *Sleeping with Technology: Harming Your Brain One Night at a Time*. Huffpost Blog. Accessed Mar 15, 2020.

Rosen, Larry, Alex M. Lim, L. Mark Carrier, and Nancy A. Cheever. 2011. "An Empirical Examination of the Educational Impact of Text Message-Induced Task Switching in the Classroom: Educational Implications and Strategies to Enhance Learning." *Psicología Educativa* 17 (2): 163-177.

Rosen, Larry, Mark Carrier, Aimee Miller, Jeffrey Rokkum, and Abraham Ruiz. 2016. "Sleeping with Technology: Cognitive, Affective, and Technology Usage Predictors of Sleep Problems among College Students." *Sleep Health: Journal of the National Sleep Foundation* 2 (1): 49-56.

Rosen, Larry, Mark Carrier, and Nancy A. Cheever. 2013. "Facebook and Texting made Me do it: Media-Induced Task-Switching while Studying." *Computers in Human Behavior* 29 (3): 948-958.

Rotondi, Valentina, Luca Stanca, and Miriam Tomasuolo. 2017. "Connecting Alone: Smartphone use, Quality of Social Interactions and Well-Being." *Journal of Economic Psychology* 63: 17-26.

Rowlands, Ian, David Nicholas, Peter Williams, Paul Huntington, Maggie Fieldhouse, Barrie Gunter, Richard Withey, Hamid R. Jamali, Tom Dobrowolski, and Carol Tenopir. 2008. "The Google Generation: The Information Behaviour of the Researcher of the Future." *Aslib Proceedings* 60 (4): 290-310.

Ruggiero, Thomas E. 2000. "Uses and Gratifications Theory in the 21st Century." *Mass Communication and Society* 3 (1): 3-37.

Saker, Michael and Jordan Frith. 2019. "From Hybrid Space to Dislocated Space: Mobile Virtual Reality and a Third Stage of Mobile Media Theory." *New Media & Society* 21 (1): 214-228.

Salas Guzman, Margarita. 2016. "Media Multitasking: Factors that Influence Audience use of Multiple Media Platforms at Once." *Journalist's Resource*, Apr 13, 2016.

Salvucci, Dario D. and Niels A. Taatgen. 2008. "Threaded Cognition: An Integrated Theory of Concurrent Multitasking." *Psychological Review* 115 (1): 101-130.

Salvucci, Dario D. and Niels A. Taatgen. 2010. *The Multitasking Mind*. Oxford, New York: Oxford University Press.

Salzberger, Nils. 2019. "The Rise of Media Multitasking: What Blasting Yourself with Multiple Media Streams is Doing to Your Brain." *NJlifehacks Blog*, Jul 15, 2019.

Sana, Faria, Tina Weston, and Nicholas J. Cepeda. 2013. "Laptop Multitasking Hinders Classroom Learning for both Users and Nearby Peers." Computers & Education 62: 24-31.

Sanbonmatsu, David M., David L. Strayer, Nathan Medeiros-Ward, and Jason M. Watson. 2013. "Who Multi-Tasks and Why? Multi-Tasking Ability, Perceived Multi-Tasking Ability, Impulsivity, and Sensation Seeking." *PloS One* 8 (1): e54402.

Saunders, Mark, Philip Lewis, and Adrian Thornhill. 2009. *Research Methods for Business Students.* 5. ed. ed. Harlow: Financial Times Prentice Hall.

Saykili, Abdullah. 2019. "Higher Education in the Digital Age: The Impact of Digital Connective Technologies." *Journal of Educational Technology and Online Learning* 2 (1): 1-15.

Schiffman, Leon G. and Joseph Wisenblit. 2015. *Consumer Behavior*. 11th global edition, Boston: Pearson.

Scholz, Roland, Eric Bartelsman, Sarah Diefenbach, Lude Franke, Arnim Grunwald, Dirk Helbing, Richard Hill, et al. 2018. "Unintended Side Effects of the Digital Transition: European Scientists' Messages from a Proposition-Based Expert Round Table." *Sustainability* 10 (6): 2001.

Schraw, Gregory and David Moshman. 1995. "Metacognitive Theories." *Educational Psychology Review* 7 (4): 351-371.

Schutt, Russell K. 2014. *Investigating the Social World: The Process and Practice of Research*. Sage Publications.

Scotland, James. 2012. "Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms." *English Language Teaching* 5 (9): 9.

Seale, Clive. 2012. *Researching Society and Culture*. 3. ed. ed. Los Angeles [u.a.]: Sage.

Selwyn, Neil. 2009. "The Digital Native – Myth and Reality." *Aslib Proceedings* 61 (4): 364-379.

Segijn, Claire M., Hilde A. M. Voorveld, Lisa Vandeberg, Sjoerd F. Pennekamp, and Edith G. Smit. 2017. "Insight into Everyday Media use with Multiple Screens." *International Journal of Advertising* 36 (5): 779-797.

Seitamaa-Hakkarainen, Pirita, Tarja-Kaarina Laamanen, Jemiina Viitala, and Maarit Mäkelä. 2013. "Materiality and Emotions in Making." *Techne Series: Research in Sloyd Education and Craft Science* 20 (3).

Severin, Werner J. and Jr James W. Tankard. 1997. *Communication Theories: Origins, Methods and Uses in the Mass Media*. Addison Wesley Longman, USA.

Shakya, Holly B. and Nicholas A. Christakis. 2017. "Association of Facebook use with Compromised Well-being: A Longitudinal Study." *American Journal of Epidemiology* 185 (3): 203-211.

Siewert, Charles. 2017. "Consciousness and Intentionality." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Web.

Singer, Judith D., and John B. Willett. 2003. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. Oxford university Press.

Smart, P. R., R. Heersmink, and R. W. Clowes. 2017. "The Cognitive Ecology of the the Internet." In *Cognition Beyond the Brain*, 2nd Edition, edited by S. J. Cowley and F. Vallée-Tourangeau, 251-282. Springer.

Snape, D. and L. Spencer. 2003. "The Foundations of Qualitative Research." In *Qualitative Research Practice*, edited by J. Ritchie and J. Lewis, 1-23.

Soni, Ruchi, Ritesh Upadhyay, and Mahendra Jain. 2017. "Prevalence of Smart Phone Addiction, Sleep Quality and Associated Behaviour Problems in Adolescents." *International Journal of Research in Medical Sciences* 5 (2): 515.

Srivastava, Jatin. 2013. "Media Multitasking Performance: Role of Message Relevance and Formatting Cues in Online Environments." *Computers in Human Behavior* 29 (3): 888-895.

Srna, Shalena, Rom Y. Schrift, and Gal Zauberman. 2018. "The Illusion of Multitasking and its Positive Effect on Performance." *Psychological Science* 29 (12): 1942-1955.

Stanford, Matthew S., Kevin W. Greve, Jill K. Boudreaux, Charles W. Mathias, and Jennifer L. Brumbelow. 1996. "Impulsiveness and Risk-Taking Behavior: Comparison of High-School and College Students using the Barratt Impulsiveness Scale." *Personality and Individual Differences* 21 (6): 1073-1075.

Starks, Helene and Susan Brown Trinidad. 2007. "Choose Your Method: A Comparison of Phenomenology, Discourse Analysis, and Grounded Theory." *Qualitative Health Research* 17 (10): 1372-1380.

Statistics Finland 2017. "From Hand-Cranked Connections to Hands-Free Mobile Calls - History of Telecommunications in Finland seen through Statistics." *Finland 1917-2007. Tilastokeskus*. Accessed Mar 7, 2017.

Stavrinos, Despina, Benjamin McManus, Andrea T. Underhill, and Maria T. Lechtreck. 2019. "Impact of Adolescent Media Multitasking on Cognition and Driving Safety." *Human Behavior and Emerging Technologies* 1 (2): 161-168.

Steele, J. R. 1999. "Teenage Sexuality and Media Practice: Factoring in the Influences of Family, Friends, and School." *Journal of Sex Research* 36 (4): 331-341.

Steele, J. R. and J. D. Brown. 1995. "Adolescent Room Culture: Studying Media in the Context of Everyday Life." *Journal of Youth and Adolescence* 24 (5): 551-576.

Stifelman, Lisa J. 1994. *The Cocktail Party Effect in Auditory Interfaces: A Study of Simultaneous Presentation*. MIT Media Laboratory Technical Report.

Stone, Linda. 2009. *Continuous Partial Attention.* Linda Stone Blog. Accessed Mar 15, 2020.

Strauss, Anselm L. and Juliet M. Corbin. 1998. *Basics of Qualitative Research.* 2nd ed. Thousand Oaks [u.a.]: Sage.

Strayer, David L. and William A. Johnston. 2001. "Driven to Distraction: Dual-Task Studies of Simulated Driving and Conversing on a Cellular Telephone." *Psychological Science* 12 (6): 462-466.

Strayer, David L., Frank A. Drews, and Dennis J. Crouch. 2006. "A Comparison of the Cell Phone Driver and the Drunk Driver." *Human Factors: The Journal of the Human Factors and Ergonomics Society* 48 (2): 381-391.

Ström, Roger and Martin Vendel. 2015. *Digital Marknadsföring.* Stockholm: Sanoma utbildning.

Swedberg, Richard. 2012. "Theorizing in Sociology and Social Science: Turning to the Context of Discovery." *Theory and Society* 41 (1): 1-40.

Szumowska, Ewa, Agnieszka Popławska-Boruc, Jakub Kuś, Małgorzata Osowiecka, and Justyna Kramarczyk. 2018. "When Frequent Media Multitaskers Perform Worse and when they do Not: The Role of Self-Regulation Ability and Strategy Manipulation." *Computers in Human Behavior* 83: 184-193.

Taherdoost, Hamed. 2016. "Sampling Methods in Research Methodology; how to Choose a Sampling Technique for Research." *SSRN Electronic Journal* 5 (2): 18-27.

Tams, Stefan, Renaud Legoux, and Pierre-Majorique Léger. 2018. "Smartphone Withdrawal Creates Stress: A Moderated Mediation Model of Nomophobia, Social Threat, and Phone Withdrawal Context." *Computers in Human Behavior* 81: 1-9.

Tefficient. 2017. *Industry Analysis 2016: Unlimited Pushes Data Usage to New Heights.* Tefficient.

Thompson, John B. 1995. *The Media and Modernity*. 1. publ. in the USA ed. Stanford, Calif: Stanford University Press.

Thomson, S. B. 2011. "Sample Size and Grounded Theory." *JOAAG 5* (1): 45-52.

Thorén, Claes, Mats Edenius, Jenny Eriksson Lundström, and Andreas Kitzmann. 2019. "The hipster's dilemma: What is analogue or digital in the post-digital society?" *Convergence: The International Journal of research into New Media Technologies* 25 (2): 324-339.

Thornton, Bill, Alyson Faires, Maija Robbins, and Eric Rollins. 2014. "The Mere Presence of a Cell Phone may be Distracting. Implications for Attention and Task Performance." *Social Psychology* 45 (6): 479-488.

Timmins, Lydia Reeves and Matthew Lombard. 2005. "When "Real" Seems Mediated: Inverse Presence." *Presence: Teleoperators & Virtual Environments* 14 (4): 492-500.

Treffner, Paul J. and Rod Barrett. 2004. "Hands-Free Mobile Phone Speech while Driving Degrades Coordination and Control." *Transportation Research Part F: Psychology and Behaviour* 7 (4): 229-246.

Turcotte, Jason, Chance York, Jacob Irving, Rosanne M. Scholl, and Raymond J. Pingree. 2015. "News Recommendations from Social Media Opinion Leaders: Effects on Media Trust and Information Seeking." *Journal of Computer-Mediated Communication* 20 (5): 520-535.

Twenge, Jean M. 2017. "Have Smartphones Destroyed a Generation?" *The Atlantic.* Sept 2017.

Uhls, Yalda T., Minas Michikyan, Jordan Morris, Debra Garcia, Gary W. Small, Eleni Zgourou, and Patricia M. Greenfield. 2014. "Five Days at Outdoor Education Camp without Screens Improves Preteen Skills with Nonverbal Emotion Cues." *Computers in Human Behavior* 39: 387-392.

Uncapher, Melina R., Lin Lin, Larry D. Rosen, Heather L. Kirkorian, Naomi S. Baron, Kira Bailey, Joanne Cantor, David L. Strayer, Thomas D. Parsons, and Anthony D. Wagner. 2017. "Media Multitasking and Cognitive, Psychological, Neural, and Learning Differences." *Pediatrics* 140 (Suppl 2): S6-S66.

Uncapher, Melina R., Monica K. Thieu, and Anthony D. Wagner. 2016. "Media Multitasking and Memory: Differences in Working Memory and Long-Term Memory." *Psychonomic Bulletin & Review* 23 (2): 483-490.

Vahvanen, Pekka. 2018. *Kone Kaikkivaltias*. Keuruu: Atena.

Vaidhyanathan, Siva. 2012. *The Googlization of Everything: (And Why we Should Worry)*. 1st ed. Berkeley: University of California Press.

Vaidhyanathan, Siva. 2018. *Antisocial Media*. US: Oxford University Press.

van Ark, Bart. 2016. "The Productivity Paradox of the New Digital Economy." *International Productivity Monitor* (31): 3-18.

van der Schuur, Winneke A, Susanne E. Baumgartner, Sindy R. Sumter, and Patti M. Valkenburg. 2015. "The Consequences of Media Multitasking for Youth: A Review." *Computers in Human Behavior* 53: 204-215.

van der Schuur, Winneke A, Susanne E. Baumgartner, Sindy R. Sumter, and Patti M. Valkenburg. 2018. "Media Multitasking and Sleep Problems: A Longitudinal Study among Adolescents." *Computers in Human Behavior* 81: 316-324.

van Deursen, Alexander Johannes Aloysius Maria, Colin L. Bolle, Sabrina M. Hegner, Sabrina Hegner, and Petrus A. M. Kommers. 2015. "Modeling Habitual and Addictive Smartphone Behavior: The Role of Smartphone Usage Types, Emotional Intelligence, Social Stress, Self-Regulation, Age, and Gender." *Computers in Human Behavior* 45: 411-420.

van Dijck, José. 2009. "Users Like You: Theorizing Agency in User-Generated Content." *Media, Culture & Society* 31 (1): 41-58.

Van Maanen, John. 1979. *Qualitative Methodology*. Sage Publications.

Van Maanen, John. 2006. "Ethnography then and Now." *Qualitative Research in Organizations and Management* 1 (1): 13-21.

Van Maanen, John. 2011. "Ethnography as Work: Some Rules of Engagement." *Journal of Management Studies* 48 (1): 218-234.

Vandewater, Elizabeth A. and Sook-Jung Lee. 2009. "Measuring Children's Media use in the Digital Age." *American Behavioral Scientist* 52 (8): 1152-1176.

Viitanen, Maria, Stina Westman, Teemu Kinnunen, and Pirkko Oittinen. 2012. *Features of Media Multitasking Experiences*. Next Media Research Report.

Voorveld, H. A. M. and M. van der Goot. 2013. "Age Differences in Media Multitasking: A Diary Study." *Journal of Broadcasting & Electronic Media* 57 (3): 392-408.

Voorveld, H. A. M., C. M. Segijn, P. E. Ketelaar, and E. G. Smit. 2014. "Investigating the Prevalence and Predictors of Media Multitasking Across Countries." *International Journal of Communication* 8: 2755-2777.

Voorveld, H. A. M. and V. Viswanathan. 2015. "An Observational Study on how Situational Factors Influence Media Multitasking with TV: The Role of Genres, Dayparts, and Social Viewing." *Media Psychology* 18 (4): 499-526.

Wallis, Claudia. 2006. "genM: The Multitasking Generation." *Time*, Mar 27, 2006.

Wallis, Claudia. 2010. *The Impacts of Media Multitasking on Children's Learning & Development*. Joan Ganz Cooney Center.

Walter, Scott R., Ling Li, William T. M. Dunsmuir, and Johanna I. Westbrook. 2014. "Managing Competing Demands through Task-Switching and Multitasking: A Multi-Setting Observational Study of 200 Clinicians Over 1000 hours." *BMJ Quality & Safety* 23 (3): 231-241.

Wang, Yiran, Melissa Niiya, Gloria Mark, Stephanie Reich, and Mark Warschauer. 2015. "Coming of Age (Digitally)." *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*: 571–582, ACM.

Wang, Zheng and John M. Tchernev. 2012. "The "Myth" of Media Multitasking: Reciprocal Dynamics of Media Multitasking, Personal Needs, and Gratifications." *Journal of Communication* 62 (3): 493-513.

Watson, Jason M. and David L. Strayer. 2010. "Supertaskers: Profiles in Extraordinary Multitasking Ability." *Psychonomic Bulletin & Review* 17 (4): 479-485.

Waytz, Adam and Kurt Gray. 2018. "Does Online Technology make Us More Or Less Sociable? A Preliminary Review and Call for Research." *Perspectives on Psychological Science* 13 (4): 473-491.

Webster, James G., Lawrence W. Lichty, and Patricia F. Phalen. 2000. *Ratings Analysis.* 2. ed. Mahwah, NJ [u.a.]: Erlbaum.

Wellner, Alison. 2000. "Generation Z." *American Demographics* 22 (9): 60-64.

Wellner, Galit. 2011. "Wall-Window-Screen: How the Cell Phone Mediates a Worldview for Us." *Humanities and Technology Review* 30: 87-103.

Wescott, Kevin. 2018. *2018 Media and Entertainment Industry Outlook*. Deloitte Center for Technology, Media and Telecommunications.

West, Richard L. and Lynn H. Turner. 2014. *Introducing Communication Theory: Analysis and Application*. 5th ed. New York, NY: McGraw Hill.

Widyanto, Laura and Mark Griffiths. 2006. "'Internet Addiction': A Critical Review." *International Journal of Mental Health and Addiction* 4 (1): 31-51.

Wilmer, Henry H., Lauren E. Sherman, and Jason M. Chein. 2017. "Smartphones and Cognition: A Review of Research Exploring the Links between Mobile Technology Habits and Cognitive Functioning." *Frontiers in Psychology* 8: 605.

Wiradhany, Wisnu and Mark Nieuwenstein. 2017. "Cognitive Control in Media Multitaskers: Two Replication Studies and a Meta-Analysis." *Attention, Perception, & Psychophysics* 79 (8): 2620-2641.

Wolf, Maryanne and Mirit Barzillai. 2009. "The Importance of Deep Reading." *Educational Leadership*, Mar 1, 32.

Wolniewicz, Claire A., Mojisola F. Tiamiyu, Justin W. Weeks, and Jon D. Elhai. 2018. "Problematic Smartphone use and Relations with Negative Affect, Fear of Missing Out, and Fear of Negative and Positive Evaluation." *Psychiatry Research* 262: 618-623.

Wood, Eileen, Lucia Zivcakova, Petrice Gentile, Karin Archer, Domenica De Pasquale, and Amanda Nosko. 2012. "Examining the Impact of Off-Task Multi-Tasking with Technology on Real-Time Classroom Learning." *Computers & Education* 58 (1): 365-374.

Wood, Wendy and David T. Neal. 2007. "A New Look at Habits and the Habit-Goal Interface." *Psychological Review* 114 (4): 843-863.

Wu, Jiun-Yu. 2015. "University students' Motivated Attention and use of regulation strategies on social media." *Computers & Education* 89: 75-90.

Wu, Jiun-Yu. 2017. "The Indirect Relationship of Media Multitasking Self-Efficacy on Learning Performance within the Personal Learning Environment: Implications from the Mechanism of Perceived Attention Problems and Self-Regulation Strategies." *Computers & Education* 106: 56-72.

Wu, Jiun-Yu and Tzuying Chen. 2019. “Who is better adapted in learning online within the personal learning environment? Relating gender differences in cognitive attention networks to digital distraction.” *Computers & Education* 128: 312-329.

Wägar, Mats. 2018. "Har Du Svårt Att Koncentrera Dig? Stäng Skärmen Och Börja Handarbeta!" *Svenska Yle*. Aug 26, 2018.

Xu, Shan, Zheng (Joyce) Wang, and Prabu David. 2016. "Media Multitasking and Well-being of University Students." *Computers in Human Behavior* 55: 242-250.

Xu, S. and Z. Wang. 2017. "Media Multitasking." In *The International Encyclopedia of Media Effects*, edited by P. (Ed). Rössler: San Francisco, CA: Wiley-Blackwell.

Yap, Jit Yong and Stephen Wee Hun Lim. 2013. "Media Multitasking Predicts Unitary Versus Splitting Visual Focal Attention." *Journal of Cognitive Psychology* 25 (7): 889-902.

Yau, Yvonne H. C. and Marc N. Potenza. 2015. "Gambling Disorder and Other Behavioral Addictions: Recognition and Treatment." *Harvard Review of Psychiatry* 23 (2): 134-146.

Yeykelis, Leo. 2019. "Switching Every 19 Seconds: How our Brains Multitask with New Media.". *Forbes Blog*. Accessed Oct 17, 2019,

Yeykelis, Leo, James J. Cummings, and Byron Reeves. 2014. "Multitasking on a Single Device: Arousal and the Frequency, Anticipation, and Prediction of Switching between Media Content on a Computer." *Journal of Communication* 64 (1): 167-192.

Yeykelis, Leo, James J. Cummings, and Byron Reeves. 2018. "The Fragmentation of Work, Entertainment, E-Mail, and News on a Personal Computer: Motivational Predictors of Switching between Media Content." *Media Psychology* 21 (3): 377-402.

Young, Kimberly S. 1998. "Internet Addiction: The Emergence of a New Clinical Disorder." *CyberPsychology & Behavior* 1 (3): 237-244.

YouTube and TV in the Nordics. 2014. *YouTube and TV in the the Nordics: Split between Denmark, Norway, Sweden and Finland*. TNS Gallup and Google.

Zajchowski, Chris A. B., Keri A. Schwab, and Daniel L. Dustin. 2017. "The Experiencing Self and the Remembering Self: Implications for Leisure Science." *Leisure Sciences* 39 (6): 561-568.

Zhang, Lingzi and Weiyu Zhang. 2012. "Explicating Multitasking with Computers: Gratifications and Situations." *Computers in Human Behavior* 28 (5): 1883-1891.

Zell, Ethan and Mark D. Alicke. 2011. "Age and the Better-Than-Average Effect." *Journal of Applied Social Psychology* 41 (5): 1175-1188.

Zhang, Weiyu, Se-Hoon Jeong, and Martin Fishbein. 2010. "Situational Factors Competing for Attention." *Journal of Media Psychology: Theories, Methods, and Applications* 22 (1): 2-13.

Zwier, J., V. Blok, and P. Lemmens. 2016. "Phenomenology and the Empirical Turn: A Phenomenological Analysis of Postphenomenology." *Philosophy & Technology* 29 (4): 313-333.

APPENDIX 1. INSTRUCTIONS FOR MEDIA DIARY 2014

Bäste mediedagboksskribent,

Under vecka 12, dvs. 16-22 mars kommer du att skriva en **elektronisk mediedagbok** där du reflekterar över din **mediekonsumtion**. Dagboken är en del av marknadsförings-grundkursens projekt 4 (i samarbete med YLE). Både YLE och EDGE Research Group (http://blogs.abo.fi/edge) vill också gärna använda dagboken i sin forskning kring ungdomars mediekonsumtion. Dagboken hanteras anonymt i forskningen och inga namn, metrikelnummer eller andra personuppgifter ges ut. Vill du inte att din dagbok används i forskningsändamål så meddela om detta per mail till johanna.lindstrom@abo.fi.

Ange följande bakgrundinformation i din dagbok:

- Kön
- Ålder
- Var har du vuxit upp?
- Hur ofta lyssnar du på radio? (Alla dagar? Varje vecka? Mer sällan? Aldrig)
- Vilken radiokanal lyssnar du oftast på? Varför?

Då du redogör för din medieanvändning, dela in ditt dygn i fyra delar:

- **MORGON** (kl. 06.00 - 12.00)
- **DAG** (kl. 12.00 - 18.00)
- **KVÄLL** (kl. 18.00 - 24.00)
- **NATT** (kl. 24.00 - 06.00)

Observera och dokumentera följande saker:

- **VAD**: Vad konsumerar du? Vad för slags innehåll är det i huvudsak du kollar?
- **HUR**: Genom vilken medieplattform konsumerar du innehållet i fråga (tryckt form så som papperstidning, via dator, med mobilen,

tv, tablett/surfplatta osv.?)

- **NÄR & HUR LÄNGE**: Tiden du tillbringar med mediet/ medierna uttryckt i minuter? Vilken tid eller när på dygnet?
- **VARFÖR**: Orsaken till att du konsumerar mediet/medierna i fråga och orsaken till varför just med hjälp av den medieplattform som du valt att använda?
- **LÄGG SPECIELLT MÄRKE TILL** vad du gör under din lediga ”**MIKROTID**”, dvs. korta tidsintervall då du t.ex. väntar på bussen, väntar i kön, väntar på att en föreläsning ska börja osv.

Tänk på:

Hur definierar du media? Läsa böcker, dagstidningar och tidskrifter. Titta på tv. Lyssna på radio och lyssna på musik med t.ex. en mp3- eller skivspelare. Nyheter, social media, tv-program, spel, musik osv. via dator, mobiltelefon eller tablett/surfplatta. Spela spel med en spelkonsol eller annan apparat. Något annat som du tolkar som media? Din dagbok ska omfatta allt sådant som du definierar som media.

Vi rekommenderar att du gör inlägg i dagboken fortlöpande under dagen, då allt ännu är i färskt minne (inte t.ex. endast på kvällen). Du får gärna också **fritt reflektera över dina mediekonsumtionsmönster** och andra tankar som väcks hos dig gällande din egen mediekonsumtion. Dessutom kan din dagbok innehålla en **bild av den mest typiska/vanligaste mediekonsumtionssituation under morgon, dag, kväll och natt (totalt 4 bilder)**.

Hur du lägger upp och strukturerar din dagbok avgör du själv, men vi vill helst att dagboken lämnas in som en word-fil. Dagboken fylls i under sju (7) hela dagar 16-22 mars. **Efter att du slutfört din dagbok skickar du in din filen via Moodle senast på måndag 23.3, kl. 12.00**.

Om du har frågor så kontakta Johanna (johanna.lindstrom@abo.fi)**! TACK!**

APPENDIX 2. INSTRUCTIONS FOR MEDIA DIARY 2017

Bästa mediedagboksskribent!

Under **vecka 4, dvs. 20-26 januari** kommer du att skriva en **elektronisk mediedagbok** där du följer med och reflekterar över **din egen mediekonsumtion**. Dagboken är en del av marknadsföring i praktiken-kursen.

Forskare inom ämnet internationell marknadsföring vill gärna använda din dagbok i sin forskning kring ungdomars mediekonsumtion. Din mediedagbok är en del av fortlöpande datainsamling som startat 2011. Dagboken hanteras anonymt i forskningen och inga namn, matrikelnummer eller andra personuppgifter ges ut eller syns någonstans. Deltagande i forskningen är frivilligt. Om du inte vill att din dagbok används i forskningssyfte kan du meddela om detta per mail till anna-greta.nystrom@abo.fi.

Din dagbok ska innehålla följande delar:

1. Bakgrundsinformation
2. Redovisning av din medieanvändning
3. Reflektioner över din medieanvändning

1. BAKGRUNDSINFORMATION *OBS! Uppge inte namn eller matrikelnummer i dagboken!*

- Kön
- Ålder

2. REDOVISNING AV DIN MEDIEANVÄNDNING

Dela in ditt dygn i fyra delar:

- **MORGON** (kl. 06.00 - 12.00)
- **DAG** (kl. 12.00 - 18.00)
- **KVÄLL** (kl. 18.00 - 24.00)
- **NATT** (kl. 24.00 - 06.00)

Observera och dokumentera följande saker:

- **VAD**: Vad konsumerar du? Vad för slags innehåll är det i huvudsak du kollar på?
- **HUR**: Genom vilken medieplattform konsumerar du innehållet i fråga (tryckt form så som papperstidning, via dator/laptop, med mobilen, tv, tablett/surfplatta osv.?)
- **NÄR:** Vilken tid eller när på dygnet konsumerar du media?
- **VAR**: I vilka situationer? Hemma/på studieplatsen/på bussen/i bilen/på gymmet osv.?
- **HUR LÄNGE**: Tiden du tillbringar med mediet/medierna uttryckt i minuter/timmar?
- **VARFÖR**: Orsaken till att du konsumerar mediet/medierna i fråga och orsaken till varför just med hjälp av den medieplattform som du valt att använda?
- **LÄGG SPECIELLT MÄRKE TILL** vad du gör under din lediga ”**MIKROTID**”, dvs. korta tidsintervall då du t.ex. väntar på bussen eller någon vän, står i kö, väntar på att en föreläsning, ett TV-program eller sportträningen ska börja osv.

Tänk också på:

Hur definierar du media? Läsa böcker, dagstidningar och tidskrifter. Titta på tv. Lyssna på radio och lyssna på musik med t.ex. en mp3- eller skivspelare. Nyheter, social media, tv-program, spel, musik osv. via dator, mobiltelefon eller tablett/surfplatta. Spela spel med en spelkonsol eller annan apparat. Något annat? Din dagbok ska omfatta allt sådant som du själv definierar som media.

Vi rekommenderar att du gör **inlägg i dagboken fortlöpande under dagen**, då allt ännu är i färskt minne (inte t.ex. endast på kvällen eller sista dagen av perioden, för då glöms mycket bort och dagboken ger inte en realistisk bild av din medieanvändning). Gör t.ex. anteckningar i din mobiltelefon och dokumentera gärna genom snapshots, bilder osv.

Din dagbok får därmed mycket gärna innehålla **bilder** på typiska mediekonsumtionssituationer under morgon, dag, kväll och natt.

3. REFLEKTIONER ÖVER DIN MEDIEANVÄNDNING

Reflektera **fritt över din mediekonsumtion** och tankar som väcks efter att du fört dagbok under en hel vecka. Överraskningar? Fördelar? Nackdelar? Finns det faktorer eller personer som påverkar din mediekonsumtion? Upprepar du samma saker vid samma tidpunkter eller ställen under dagen? Osv.

Reflektera också över **om du använder flera medier samtidigt** (t.ex. tittar på TV och använder mobiltelefon samtidigt, scrollar sociala medier osv.), i vilka sammanhang och i vilket syfte.

Lämna in din dagbok som Word-fil. Du kan använda mallen (se bilaga) eller strukturera din dagbok själv. Dagboken fylls i under sju (7) hela dagar, 20-26 januari. Efter att du slutfört din dagbok skickar du in din fil **via Moodle senast fredag 27.1 kl. 23.55.**

Bilaga 1. Mall för mediedagboken (frivillig)

1. BAKGRUNDSINFORMATION

Jag är____ år gammal.

Jag är kvinna ___ man ___ annat___ (ange med kryss X)

2. REDOVISNING AV DIN MEDIEANVÄNDNING

Dela in ditt dygn i fyra delar:

- **MORGON** (kl. 06.00 - 12.00)
- **DAG** (kl. 12.00 - 18.00)
- **KVÄLL** (kl. 18.00 - 24.00)
- **NATT** (kl. 24.00 - 06.00)

Observera och dokumentera följande saker:

- **VAD**: Vad konsumerar du? Vad för slags innehåll är det i huvudsak du kollar på?
- **HUR**: Genom vilken medieplattform konsumerar du innehållet i fråga (tryckt form så som papperstidning, via dator/laptop, med mobilen, tv, tablett/surfplatta osv.?)
- **NÄR:** Vilken tid eller när på dygnet konsumerar du media?
- **VAR**: I vilka situationer? Hemma/på studieplatsen/på bussen/i bilen/på gymmet osv.?
- **HUR LÄNGE**: Tiden du tillbringar med mediet/medierna uttryckt i minuter/timmar?
- **VARFÖR**: Orsaken till att du konsumerar mediet/medierna i fråga och orsaken till varför just med hjälp av den medieplattform som du valt att använda?
- **LÄGG SPECIELLT MÄRKE TILL** vad du gör under din lediga ”**MIKROTID**”, dvs. korta tidsintervall då du t.ex. väntar på bussen eller någon vän, står i kö, väntar på att en föreläsning, ett TV-program eller sportträningen ska börja osv.

Fredag 20.1	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför?				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (20.1)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar.

Lördag 21.1	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför?				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (21.1)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar.

Söndag 22.1	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför?				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (22.1)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar.

Måndag 23.1	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför?				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (23.1)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar.

Tisdag 24.1	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför?				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (24.1)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar.

Onsdag 25.1	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför?				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (25.1)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar.

Torsdag 26.2	Morgon	Dag	Kväll	Natt
Vad?				
Hur?				
När?				
Var?				
Hur länge?				
Varför				
Anteckningar kring mikrotid				
Övriga anteckningar				
Övriga anteckningar				

Bilder (26.2)
Ange även datum och tidpunkt för när bilden är tagen och beskriv kort vad bilden symboliserar

3. REFLEKTIONER ÖVER DIN MEDIEANVÄNDNING

Reflektera över **vad media är**.

Reflektera **fritt över din mediekonsumtion** och tankar som väcks efter att du fört dagbok under en hel vecka. Överraskningar? Fördelar? Nackdelar? Faktorer eller personer som påverkar din mediekonsumtion? Upprepar du samma saker vid samma tidpunkter eller ställen under dagen? Osv.

Reflektera också över **om du använder flera medier samtidigt** (t.ex. tittar på TV och använder mobiltelefon samtidigt, scrollar sociala medier osv.), i vilka sammanhang och i vilket syfte.

Längd: max 750 ord

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