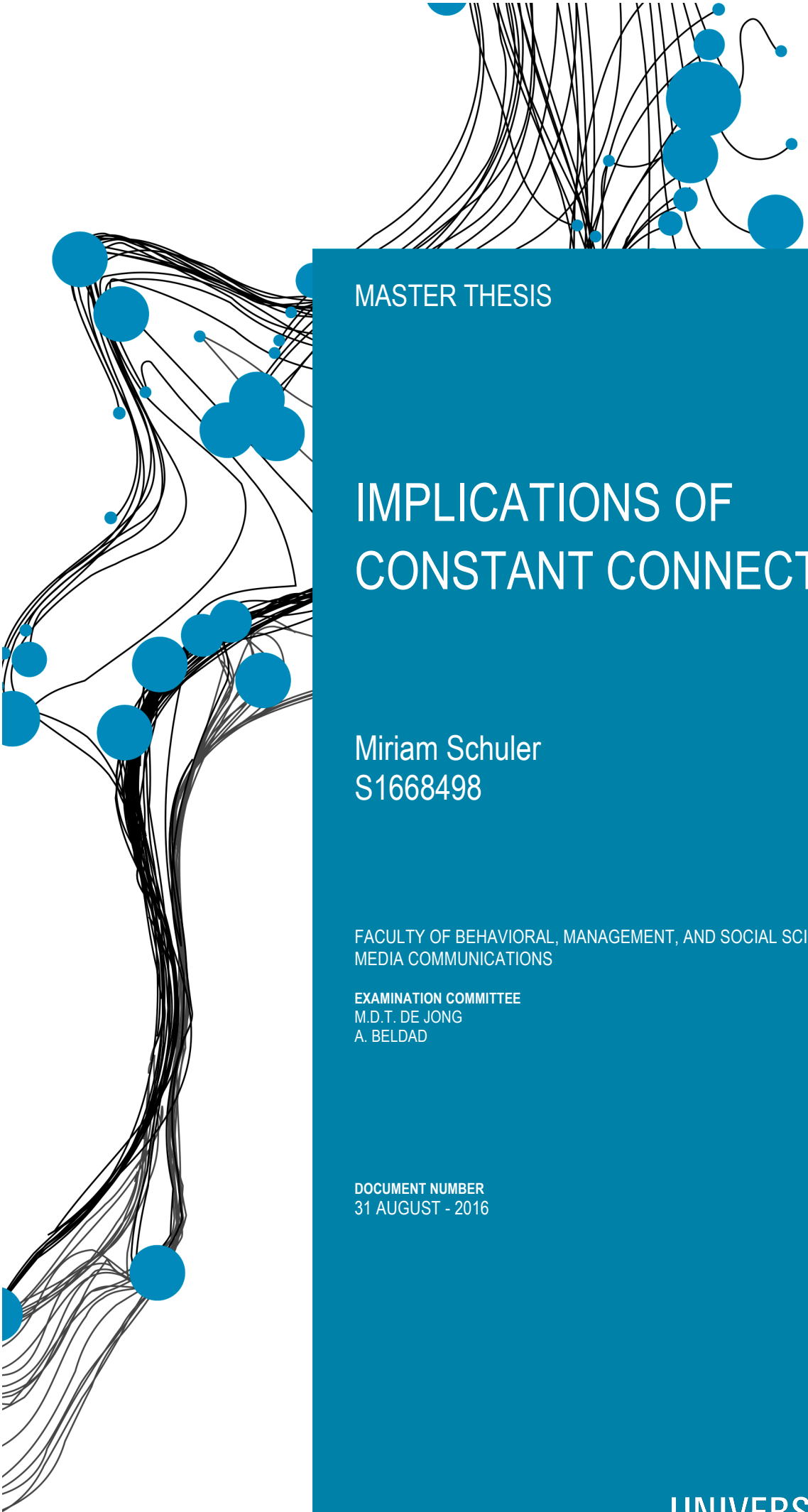

MASTER THESIS

IMPLICATIONS OF CONSTANT CONNECTIVITY

Miriam Schuler
S1668498

FACULTY OF BEHAVIORAL, MANAGEMENT, AND SOCIAL SCIENCES
MEDIA COMMUNICATIONS

EXAMINATION COMMITTEE
M.D.T. DE JONG
A. BELDAD

DOCUMENT NUMBER
31 AUGUST - 2016

UNIVERSITY OF TWENTE.

Implications of Constant Connectivity

Exploring Characteristics of a Constantly Connected Lifestyle and how Individuals Negotiate its Boundaries

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MIRIAM SCHULER

S1668498

UNIVERSITY OF TWENTE

GRADUATION COMMITEE:

M.D.T. DE JONG

A. BELDAD

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MASTER SPECIALIZATION	Media Communications
GRADUATION DATE	31. August 2016

ABSTRACT

The phenomenon of constant connectivity might have the power to affect almost any aspect of our lives. Yet, especially in the private context, a better understanding of its dynamics is needed. This article explores the complexity of the always-on lifestyle of 25 German individuals. The findings of qualitative in-depth interviews indicate a tendency of high connectivity potentially turning into the obligation to be always available and to react quickly. The process of defining one's optimal level of connectivity seems to be highly interrelated with the dynamics of the individual's network. In the context of interpersonal mediated communication a quest was expressed for more autonomy and self-determination. In relation to information consumption a more selective behavior was desired. Lastly, tensions in the context of particular connectivity levels were revealed as well as the strategies that individuals create to balance their personal connectivity needs with the demands of their environment. The findings of this study indicate a need to define some sort of connectivity personality to be better able to understand the effects of constant connectivity. More practically, better-designed services might help individuals to cope with the demands of constant connectivity. Limitations of this study are discussed.

KEYWORDS: constant connectivity, always-on, mediated communication, interpersonal communication, smartphones, qualitative research

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Introduction

When mobile phones came into existence, scholars first investigated *who* used mobile phones before they explored *how* these devices were used (Wirth, Von Pape, & Karnowski, 2008). By now, however, with mobile Internet-enabled devices being a firmly integrated part of a modern lifestyle, new issues need to be addressed (Kolb, Caza, & Collins, 2012; Vorderer & Kohring, 2013). It needs to be understood in what ways the use of smartphones and other devices may affect their users' lives, because they serve not only as a means for connection but also provide their users with a huge variety of tools for various aspects of their daily life (Balakrishnan & Raj, 2012; Böhmer, Hecht, Schöning, Krüger, & Bauer, 2011).

Thus far, it was shown that mobile devices had a major impact on our well-being (Harwood, 2014), relationships (Przybylski & Weinstein, 2012) and several other facets of our lives (Lepp, Barkley, & Karpinski, 2014). Critical aspects were investigated in the context of an increased smartphone use, such as addiction (Roberts, Yaya, & Manolis, 2014), stress (Y. K. Lee, Chang, Lin, & Cheng, 2014), or disruptive behavior when being with others (Karadağ et al., 2015).

Certainly, the introduction of mobile phones has also changed the way people communicate and connect with each other, as they offer the possibility to stay in perpetual contact (Katz & Aakhus, 2002). This perpetual contact was particularly facilitated by the means of text messaging (Murdock, 2013). It was found that, unlike other application types that were used predominantly at certain times of the day, communication applications were often used throughout most of the day (Böhmer et al., 2011).

Eventually, initial expectations might be outreached (Vorderer & Kohring, 2013), not only in regard to the potential options these modern devices create, but also in regard to the consequences that they have on our daily life. The question arises, what particular role the phenomenon of constant connectivity plays in this context, because by now, being online and connected via all sorts of devices to information and important others must not be considered an exception, but has rather become some sort of default condition (Madianou, 2016). As the existence of portable, Internet-enabled devices blurs the boundaries between being online and offline, individuals do not seem to distinguish between these two states anymore (Boyd, 2012; Madianou, 2014). Thus, an interaction with these devices "becomes seamlessly woven into other daily practices" (Madianou, 2016, p. 8). Bayer, Campbell, and Ling (2015) concluded that the frequency of communication technology use was not the most remarkable aspect, but rather the automaticity in the manner of use and the notion that connectivity had "become a societal norm and a personal habit" (p.1). In general, in recent research about technology use and its consequences, the notion of ubiquitous connectivity as a general underlying phenomenon seems to be present regardless varying contexts or research foci (Bayer et al., 2015; Madianou, 2014, 2016; Su, 2015).

Perceptions and effects of constant connectivity remain understudied (Waizenegger, 2015). This is true especially within the context of the private environment of individuals, outside organizational practices. Also, research has often focused on single attributes or only one device when the consequences of technology on individuals was explored (Haythornthwaite, 2005). As one of the first, this study addresses this research gap. By focusing on individuals' perceptions of their so-called always-on lifestyle it explores potential effects of this specific and complex phenomenon. This study aims to gain insights into how individuals actually integrate the

possibility of being constantly connected into their lives. The main research questions are:

- How do individuals experience the possibility of constant connectivity?
- What are the perceived consequences of this phenomenon?
- How do individuals manage to find and maintain their optimal level of connectivity?

Theoretical Framework

This section discusses previous research into consequences of high levels of smartphone use and constant connectivity. To understand why various aspects of life might be affected when people start to think, feel, live and act with the expectation of being permanently online and constantly connected (Vorderer, 2015), special attention is placed on the concept of mediated presence. A focus is also set on the two-fold nature of constant connectivity being a prominent characteristic of this phenomenon. In this study, in accordance with Wajcman and Rose (2011), the term constant connectivity is defined as being connected and available all the time and everywhere.

Presence in a Mediated World

Two phenomena that can be observed in the context of modern communication technologies are *absent presence* (Gergen, 2002) and *present absence* (Fortunati, 2002). Absent presence occurs in situations in which communication technology enables spatially separated individuals to feel connected. Present absence can be observed when people are physically present but effectively absent because their focus is set somewhere else (MacCormick, Dery, & Kolb, 2012). Gergen (2002), expected both, significant and multidimensional consequences of the expansion of the "diverted or divided consciousness invited by communication technology" (p.227). Because of

the quick developments in the field of mobile phones and the Internet, he anticipated great changes among cultural formations.

Licoppe (2004) referred to the concept of *connected presence* that can be observed when an "absent party renders himself or herself present by using multiplying mediated communication gestures" (p.135). In this context, the concept of *connected relationships* was studied, in which communication technologies "are exploited to provide a continuous pattern of mediated interactions" (p.136). Connected relationships were found to result in blurred boundaries between absence and presence (Licoppe, 2004).

More recently, in relation to the phenomenon of constant connectivity that entered the lives of individuals, Madianou (2016) introduced the term *ambient co-presence*. She defined this concept as "the increased awareness of the everyday lives and activities of significant others through the background presence of ubiquitous media environments" (p.1). The findings of her long-term ethnographic work on Filipino migrants in the UK show that due to a combination of the always-on lifestyle and the affordances of modern media environments, individuals could develop a strong sense of their significant others' routines and daily rhythms without having to interact directly. Instead, status symbols were used that revealed whether the other person was online or offline. Hence, these symbols could serve as meaningful indirect indicators of the activities of other people.

Madianou (2016) also compared ambient co-presence to the concepts of monitoring or surveillance, as it might also be associated with the development of conflicts. Examples are insecurities about the appropriate handling of relationships and privacy issues. The scholar suspected that constant connectivity could reveal potential problems more easily, concluding that ambient co-presence might, in general, affirm the

quality of a relationship. Thus, strong relationships might profit, whereas weak ones might suffer from ambient co-presence (Madianou, 2016).

Two-fold Nature as Characteristic of Constant Connectivity

One aspect of constant connectivity that was frequently highlighted in previous research and that seems to be one of the most striking characteristics of this phenomenon is its two-fold nature (Waizenegger, 2015). Davis (2011), for instance, observed the always-connected lifestyle of young people as being highly complex and containing a bunch of opportunities and drawbacks at the same time. Similarly, Licoppe (2004) had described the development of being able to reach everyone, anytime from anywhere as "a new resource and a new threat" (p.145).

Positive side of constant connectivity.

A rather functional positive aspect that is provided by constant connectivity is the perpetual access to knowledge and information (Maguth, 2013). In the organizational context of knowledge workers, the resulting ability to work anywhere and anytime was found to facilitate higher degrees of mobility, flexibility, and efficiency (Waizenegger, 2015).

Higher levels of flexibility and a resulting improvement of well-being were also found by Salvagno, Taylor, Bobeva, and Hutchings (2012). When investigating the relationship between the phenomenon of constant connectivity and well-being among university students, they also observed improvements of the daily workflow. Furthermore, students were better able to balance work, study and leisure time and perceived higher levels of support and reassurance (Salvagno et al., 2012).

Feelings of connectedness and closeness.

Licoppe (2004) observed that the form of mediated interactions, which he described as a "continuous flow of small communicative acts" (p. 154), provided individuals with a feeling of being connected. Furthermore, this kind of interaction could result in lower levels of formality and the reduction of the need to frame the interaction. Licoppe also emphasized that this development of being able to reach everyone, anytime from anywhere could enhance private conversations and make them more continuous.

Su (2015) explored how the tendency to be always-on may affect romantic relationships among Chinese lovers. Particularly, implications of constant connection were investigated. Su argued that, despite its short and quick character, this form of communication could be indeed of value for closeness, intimacy and the sense of being together in relationships.

Negative side of constant connectivity.

Apart from the positive aspects, an extensive amount of previous connectivity research has dealt with issues that were more related to the negative side of the phenomenon of being always online and always connected.

Smartphone addiction.

To be able to distinguish being connected and online all the time from an excessive usage behavior, the aspect of smartphone addiction needs to be taken into account in the context of constant connectivity. In the past years, there has been much research on smartphone overuse and the issue of an "excessive use of smartphones, that interferes with the daily lives of the users" (H. Lee, Ahn, Choi, & Choi, 2014, p. 1), as smartphone addiction can be defined. Important factors that were found in relation to problematic usage behavior are self-identity, validation from others (Walsh, White, &

McD Young, 2010), limited self-control, and external triggers, such as notifications (U. Lee et al., 2014). Roberts, Pullig and Manolis (2015), who investigated the role of personality traits in this context, found that attention impulsiveness, emotional instability and materialism were positively related to cell phone addiction.

Besides the potential influential factors, scholars also investigated the consequences of smartphone overuse. Thus far it was associated with negative effects on various aspects, such as mental health (Thomée, Härenstam, & Hagberg, 2011), sleep quality, life-satisfaction, or academic performance (Gupta, Garg, & Arora, 2015; Harwood, Dooley, Scott, & Joiner, 2014; Y. K. Lee et al., 2014; Lepp et al., 2014). Moreover, Hadlington (2015) could show a link between self-reported cognitive failures and problematic mobile phone use or excessive Internet use.

Constant connectivity threatening interpersonal relationships.

Licoppe (2004) expected the new ways of handling interactions in relationships to have the power to transform interpersonal relations and sociability. He concluded that each incident of failed connection would indicate a lack of availability. As a result, individuals would either need to be available or renegotiate or justify their unavailability.

Also Pettigrew (2009), who investigated how texting was used and perceived by individuals, recognized text messages as an “important relational tool” (p. 711). He highlighted the risk of compromising personal interactions if technological alerts were not regarded as a potential but as an obligation for a response. In particular, he described high levels of curiosity that were created by incoming messages and a resulting temptation to look up their content and sender to evaluate its importance and personal relevance (Pettigrew, 2009).

The risk that mobile phone use might have negative effects on relationships is a concern that has vehemently been raised, for instance by Turkle (2012). One

manifestation of such a negative effect has been labeled as *phubbing* and was observed by Karadağ et al. (2015). The term phubbing—a portmanteau built of the words phone and snubbing—describes the phenomenon of individuals being immersed in their mobile phones while having a conversation with other people. A disrespectful attitude towards the communication partner, disregard, or the preference of a virtual environment over the reality are examples of the different dynamics in which the phenomenon of phubbing manifests itself (Karadağ et al., 2015). Roberts and Davis (2016), who investigated the phubbing behavior in the context of romantic relationships, found that so-called partner phubbing had, moderated by conflicts over cell phone use, an impact on relationship satisfaction and indirectly even influenced personal well-being and life satisfaction.

In an earlier study, Przybylski and Weinstein (2012) could show that for mobile phones having an impact on relationships, an actual interaction with the device was not even necessary. Empirical evidence was found that the mere presence of mobile phones had an influence on the quality of relationships. Closeness, connection and conversation quality was shown to suffer when mobile communication devices were present during face-to-face interactions. More specifically, the extent of empathy and understanding felt by the participants as well as the development of trust and closeness were reduced. This was especially true for discussions about personally meaningful topics in comparison to casual interactions (Przybylski & Weinstein, 2012).

Conflicts in romantic relationships.

Negative consequences of a constant availability were also investigated among couples in romantic relationships. It was found that real-time sharing via different forms of media could be perceived as demanding in terms of time and attention management (Su, 2015, p. 241). Hence, a growing distress might occur in situations in which the

partner is not available. Moreover, the waiting time that was perceived as acceptable seemed to be reduced to a minimum. This being a common cause of relationship conflicts, a negotiation of the "meanings of silence and contact" (Su, 2015, p. 241) seemed to become necessary.

Optimal Connectivity

Above considerations raise the question of the existence of an optimal connectivity level. A major part of research that deals with this issue has been conducted in the context of the workplace. Because of its impact on various aspects, such as productivity, job satisfaction or employee engagement, connectivity is considered a fundamental element of the organizational life (Matusik & Mickel, 2011; Mazmanian, 2013; Waizenegger, Remus, & Maier, 2014; Waizenegger, 2015). Therefore, scholars agreed in the need to strive for the state of optimal connectivity (Kolb et al., 2012; Wajcman & Rose, 2011). Optimal connectivity that is also referred to as requisite connectivity or connective flow has been located between insufficient connectivity (hypo connectivity) and information overload (hyper connectivity). Connective flow occurs when "communication is highly effective and highly efficient and balanced in accordance with our needs and the demands of the task or situation at hand" (Kolb, Collins, & Lind, 2008, p. 183).

Factors influencing optimal connectivity.

Kolb et al. (2012) highlighted that the understanding of the optimal state of connectivity could change from one person to another and must be defined individually. It depended for one thing on the particular situation, for another thing on its subjectivity. Kolb (2008) regarded the phenomenon as being "partially socially constructed and partially idiosyncratic and spontaneously determined by the individual actor" (p.186).

Finding flow could therefore be understood as a continuous process rather than an ideal state (Dery, Kolb, & MacCormick, 2014).

Dery, Kolb and MacCormick (2014) highlighted the tension between the individual free will and normative social pressure to explain the decision "if, when and how much to connect" (p.559). They also referred to Gidden's (1984) structuration theory. The grounding of this theory builds the "duality of structure" (p.25) that describes the relationship between human agency and social structures, whereas structural properties were seen as medium but also as outcome of the repeated practices of individual agents (Giddens, 1984).

Another approach that might assist in understanding this process of finding flow is taking into account the concept of appropriation. Also with a focus on the role of human agency (Orlikowski, 2008), appropriation can be understood as the process that "people actively select how technology structures are used" (DeSanctis & Poole, 1994, p. 129). Orlikowski (2008), for instance, stated that users of technology would "always have the potential to change their habits of use, and in this way change the structures they enact in their recurrent practices" (p.411). She thereby distinguished between processual, technological, and structural consequences that can result of the users' choices if and how to interact with technology (Orlikowski, 2008).

Negotiation of constant connectivity.

Within the organizational context, individuals' choices regarding their connectivity have been explored, such as the strategies, workers engage to negotiate the constant connectivity via communication media (MacCormick et al., 2012; Wajcman & Rose, 2011). Mazmanian (2013) found that the ways varied in which individuals engaged with a device and therefore with its capacity to provide connectivity. In relation to productivity at the workplace, Al-dabbagh, Sylvester, and Johnstone (2014) highlighted the

importance of ICT self-discipline, a concept that they defined as “the extent to which an individual can control his/her behavior towards ICTs” (p.6). In order to achieve such an ICT self-discipline, prioritizing incoming exchanges according to their duration and importance or improving ones channel choice were considered necessary strategies (Al-Dabbagh et al., 2014).

In the context of romantic relationships, Su (2015) referred to a relational paradox that required individuals to rely on “personal strategies to negotiate their accessibility” (p. 244). Ames (2013), who explored iPhone use among college students, observed that the majority of the participants engaged in what she called techno-resistance, the act of boundary setting or disconnecting as a balance to the competing desire of constant connection.

To increase the usefulness of the respective communication channel and to enhance the feeling of connectedness within personal interactions, Pettigrew (2009) highlighted the benefits of applying specific strategies, such as using personalized ringtones or creating personal rules.

Methodology

To acknowledge the complexity that is inherent to the daily interactions with digital media (Davis, 2011), the data collection in this study was conducted by the means of 25 semi-structured in-depth interviews between March and June 2016.

Instrument

An interview guideline had been developed. Previous research of Waizenegger, Remus, and Maier (2014) were taken as guidance regarding the questions about the optimal connectivity level and the different stages of connectivity. The interview

guideline was pretested (Berg, 2007) and applied in two trial interviews that eventually were included within the final sample. Due to the explorative approach of the present study the interview questions were formulated rather broadly and referred to both the way participants were connected to the Internet and to other people. The interview guideline contained the following questions:

- In general, to what extent would you describe yourself as someone who is almost always online and always connected to others?
- What do you find positive about being highly connected?
- What do you find negative about being highly connected?
- What are the consequences of your highly connected lifestyle for your personal relationships?
- How quickly do you respond to messages in general and do you expect that the others are as available and responsive as you are?
- How does your highly connected lifestyle affect the time you spend with others?
- Can you think of situations in which you suffered from too much connection?
- Can you think of situations in which you suffered from too little connection?
- How do you define your personal optimal level of connectivity?
- What are your strategies to find and maintain your optimal level of connectivity?
- What kind of difficulties do you experience in relation to these strategies?
- What are situations in which you disconnect?
- A recent trend is called digital detox, meaning that people limit their time spent online or go offline completely. What do you think about this?
- Applications exist that assist their users in reducing their online behavior by tracking phone usage or limiting the time you can access your applications. What do you think about this?

Participants

A convenience purposive sampling approach was followed to recruit participants. Beginning in the environment of the researcher at the University of Twente, individuals were asked whether they considered themselves as highly connected. Later, also some sort of snowball sampling was applied in which participants introduced the researcher to other individuals, who were leading an always-on lifestyle. When they were first addressed the potential participants were informed about the purpose of the study and were then invited to be interviewed, in case they identified themselves as being highly connected, thus meeting the criterion of being connected and available all the time and everywhere. Table 1 provides an overview of the demographic distribution of the participants.

Table 1 Demographic Distribution of Participants

	Participants (N=25)			
	Mean	**SD**	**Min**	**Max**
Age	24.4	2.7	20	31
Gender	**Male**	**Female**		
	10	15		
	Students (n=20)		**Employees (n=5)**	
Education level		**Education level**		
Undergraduate	7	No degree	1	
Postgraduate	13	Undergraduate	4	
	20		**5**	

Procedure

The participants of this study were interviewed either at their homes or in a quiet, enclosed environment at the University of Twente. Prior to the interviews, all participants were orally briefed about the purpose and the method of the study, and written informed consent was obtained. The participants were also asked to provide

demographic information and data about their average daily Internet use (see Table 2). This approach served the purpose of making the participants considering their own online behavior and at best, getting them into a reflective mood for the time of the interview. The interviews that were audio-recorded lasted approximately between 30 minutes and one hour, with an average duration of 38 minutes. The audio-recordings were then transcribed verbatim. All interviews were conducted in German language to assure that participants were able to express themselves as desired without any translation issues interfering their trains of thought.

Analysis

The iterative data analysis of the interviewees' responses was performed in three steps. First, the interview transcripts were repeatedly read to achieve a familiarization with the data (Burnard, 1991). After a first cycle of structural and descriptive coding a second cycle of pattern coding (Saldaña, 2015) was performed to identify themes that emerged during the interviews (DeSantis & Ugarriza, 2000). If dealing with more than one theme, several codes were assigned to one sentence or paragraph. Also statements that were perceived as remarkable were highlighted, using ATLAS.ti. At last, the themes that emerged from the coded data were selected and assigned to categories. This procedure of coding and recoding was repeated until the codes and categories had become more defined (Saldaña, 2015) and a "reasonably exhaustive category system" (Burnard, 1991, p. 462) had been created. This process resulted in the coding of 1,668 quotation units across interviews and a list of 25 categories that entailed a total number of 213 codes. Using this coding scheme, a second coder check-coded a sample of approximately 10 percent of the transcripts. An intercoder agreement of 63 percent was calculated. Taking into consideration the large number of

different codes and the exploratory nature of this research, this result can be considered as acceptable (Campbell, Quincy, Osserman, & Pedersen, 2013; Krippendorff, 2004).

Results

Although participants were specifically asked to consider their highly connected lifestyle in general, in their answers they primarily—sometimes exclusively—referred to their smartphone. In general, the smartphone turned out to be the main device that facilitated the participants' current state of constant connectivity. The following section presents the results of the considerations that participants provided during the interviews regarding their high level of smartphone use and their always-on lifestyle.

Various Dimensions of Being Online

Participants experienced difficulties when they were asked to indicate their average Internet or smartphone use prior to the interviews. These struggles were expressed with utterances, such as "this is really hard to say" or "this is probably all wrong". The various dimensions of how to interpret being online could be considered a reason for this inability to gauge the own online behavior in quantitative terms.

Distinction between active and passive Internet use.

As a result of the modern always-on lifestyle the difficulty of defining one's actual online state emerged. One of the participants argued: "When saying, I am eight hours a day online, it does not mean that I spend eight hours on the Internet but that I am available eight hours via the Internet". Also the fact that smartphones were used not only for communication or information purposes but also served as camera, alarm clock, fitness tracker, and music player, made a clear indication of the total online time

difficult. A general difference was pointed out between active and passive Internet use. How differently participants interpreted the status of being online and available is reflected in the huge variation in their data (see Table 2). The total online time, for instance, ranged between 2.5 hours and 24 hours per day.

Table 2 Self-reported Average Usage Data

	Participants (N=25)			
	Mean	**SD**	**Min**	**Max**
Smartphone checks*	61.8	57.7	9	300
Hours online*	11.5	6.5	2.5	24
Hours unavailable*	5.7	4.4	0	12
Minutes until reading a message	24.3	19.3	1	60

* per day

Distinction between on and always-on.

During the interviews participants encountered a dissonance between aspects of the always-on lifestyle and aspects that could also be experienced in relation to lower levels of connectivity. A participant expressed the resulting confusion as follows: “I cannot quite interpret the difference between Internet and being always-on. I could also take the computer and just switch on the Internet”.

When talking about social media, for instance, having a constant access to these was not considered crucial, as a participant concluded: “No, it is actually not the fact that you are able to be always online but rather the fact that you have access to all these platforms; that these platforms exist”.

Evaluation of constant connectivity

When they were asked about advantages of being always online and always connected, participants tended to refer directly to aspects that were quite functional in nature. One of the key attributes that emerged was the possibility to have immediate

access to a wide range of information. This condition was linked to the feeling of independence, secureness, and autonomy.

Advantage of staying in touch.

Notably, all of the interviewees referred to the topic of mediated communication being a general positive aspect of constant connectivity. Besides its cost-effectiveness and the low effort that was required to establish such frequent interactions, the possibility of staying in contact with important others was highlighted. The chance to keep in touch with family, friends, and other contacts was emphasized, mostly with a reference to geographical distance. As a result, feelings of connectedness and a greater level of closeness were reported.

Among the participants interviewed, some fully embraced these positive aspects and indicated that they would never suffer from their highly connected lifestyle. Others, in turn, seemed to hold a fundamentally critical opinion. In the further process of the interviews, however, none of the participants completely adhered to such a one-sided view.

Negative aspects of constant connectivity.

Compared to the perceived advantages, however, the reported disadvantages of high connectivity levels covered a greater variety of characteristics. Also in this regard, functional aspects were among the first that participants referred to. A perceived message overload, the disturbing behavior of focusing on one's phone in the presence of others, and a general feeling of being distracted were the themes that emerged prominently.

Message overload.

In the context of a perceived message overload it was often referred to the group chat feature of the mobile instant messenger WhatsApp. Participants consistently

highlighted the high number of messages they received. Especially, simultaneously incoming messages from different groups and the need to catch up with the conversation after not having participated in it from the beginning were perceived as overwhelming. A participant explained: “Messages are often simply overlooked. A lot of things also quickly disappear if many people send texts at the same time and you only read the most recent ones”. Also identifying relevant information within the huge amount of rather unimportant messages was something participants struggled with.

Confirming such a negative image do the association of messages with work and the feeling of duty towards being responsive and available, as stated in the following remark: “When checking your phone after two or three hours and you’ve got umpteen messages, then you sometimes feel stressed by having to work them off.”

Notifications cause distraction.

Participants also referred to the behavior of frequently checking one’s phone for new messages. Participants particularly highlighted the link between the reception of notifications and the practice of checking one’s phone numerous times per day. Getting notified about messages via vibration, sound, or a blinking light was perceived as an undesired distraction from the actual activity. Due to longer interaction sessions that were triggered by these notifications, concentration issues and a perceived waste of time were reported as negative result.

A general preference to silence one’s phone and to rely on less obtrusive notifications via vibration or visible cues emerged. Nevertheless, the following explanation of a participant shows, how the various types of notifications can be used to maintain a high level of connectivity:

> I actually switch on the sound if I know I won't be checking the phone for a while (….) Thus, if someone wants to reach me, he will. However, when sitting at my desk I silence it because I check it constantly anyway.

Consequences of Constant Connectivity

The negative consequences that were reported in relation to high connectivity levels clearly outnumbered their positive complements.

Extension of networks and possibilities.

An example for positive consequences that were described is the existence of better-maintained and extended personal networks. Individuals reported that only thanks to modern communication technologies, they would be able to keep their network of friends and acquaintances, as indicated in the following remark of a participant:

> Especially with friends from other studies or from school (…), with whom I normally would not be in touch anymore, [a high connectivity level] facilitates texting each other more often, updating about what is happening or arranging an appointment: things that would not have happened in the past.

One of the participants even traced his decision to go abroad back to the awareness of being able to stay in constant connection with important others:

> It makes things easier and I also think that more people are encouraged to go somewhere else, to work or study in another country, because it is not a big problem anymore. You always keep in touch with the people you know.

Addiction and misuse.

In the context of a tendency to check one's phone and notifications with a high frequency, participants often referred to the threat of getting addicted to smartphones or an associated level of constant connectivity. One participant referred to the importance of the smartphone, stating: "I once forgot it at home and (…) I already had light withdrawal symptoms". Similarly another interviewee expressed: "I know that I am somehow addicted to it. That it is difficult to leave it aside". Apart from these acknowledgements of negative experiences with their high connectivity level, participants tended to refer to other people in their environment. According to the principle of *others are worse*, they denoted others as "smartphone junkies" or regarded the behavior of others as unhealthy.

Furthermore, a general confusion could be observed regarding the identification of addiction or misuse, as indicated in the following quote: "It is like a drug. Not really a drug but an internal desire that arises in your head. It is not normal that you cannot control it yourself". The term addiction was often relativized, dismissing the own behavior as a bad habit. A participant recognized: "It also can be a habit, I do not know. I cannot tell the line between habit and addiction".

Conflicts between generations.

The huge number of different topics that were addressed during the interviews shows the magnitude of the impact that a high connectivity level can have on the daily lives of individuals. Among the considerations that went beyond the functional aspects of constant connectivity were observations of conflicts between different generations. During the interviews, participants addressed differences between their own online behavior and the online behavior of older generations, the generation of their parents,

for instance. In this context, a lack of online experience or a different preference of communication channels emerged as common themes.

Interestingly, the interviewees, whose age ranged between 20 and 31 years, also expressed the concern about a threatening generation conflict with younger individuals. One of the participants, for instance, referred to differences in the understanding of mediated communication:

> I believe that for the younger generation this kind of communication is the real communication. They do not make a difference. For me, there is somehow a difference in quality. Certainly, the personal communication is something else.

Another participant perceived the need to prevent the loss of social values:

> Some people do have media competence while others do not have it (….) And that is what one should actually start with. Above all, in the case of children and adolescents, because they are testing themselves and, although they have the possibilities, they were somehow not taught how to behave on these platforms.

Difficulties with uniting the offline and the online world.

In the context of such consequences on the social life and with regard to younger generations, a distinction between the online and the offline, the *real-world* was emphasized. Remarkably, whenever such a distinction was made, the reference to the online world had a negative connotation. One participant, for instance, pointed out observations he made as a sports coach of teenage boys: “Then you realize, they do not have a real life, they are somewhere in the virtual world”. A more general statement

was made by another participant, who claimed: „Well, the more you are online, the less you are in your real life“.

Participants also reported that they tried to integrate the online world into the offline world. Showing pictures or referring to information found online was even considered a possibility to expand the experience of the personal contact. In other situations, however, it was often regarded a necessity to justify what one was doing online, to prevent a potential conflict. A participant declared: “Eventually, it is about carrying the connectivity into the daily life and the daily life into the connectivity without invoking conflicts”.

Connectivity as constant disruptive factor during personal meetings.

Although no severe conflicts were reported in this study, the phenomenon of being immersed in one’s phone while spending time with others clearly emerged as a disruptive factor of high connectivity levels. There seemed to be great variations of both, the perceived gravity of the disruption and the particular reaction to it. Examples of the factors crucial to the individual assessment of the disruptive act were the group-size, the importance of the particular topic discussed, and the duration of the interaction with the phone. A participant, who before had admitted that he checked his phone also during personal interactions, reasoned as follows: “I think there is a difference. When being in twos, I leave the other person completely alone. When being in a group of people and I check my phone, then the other person always has the possibility for other interactions”.

The majority opinion that emerged was giving priority to the personal conversation as a matter of politeness and respect, whereas a quick glance on the phone was mostly regarded as acceptable. A participant argued “the personal, direct

communication shall take precedence over the virtual communication. The virtual communication is only an aid".

Feelings of uncertainty.

Another reason that was given for a general aversion against others being constantly absorbed in their mobile devices was the resulting feeling of uncertainty. How this feeling is able to create irritation is reflected in the following statement of a participant:

> You do not know exactly what the person is doing on the phone. This is a problem (….) It is possible that it is something very important, stress in the relationship or something within the family, then it would be okay - but you do not want to talk about it, you just leave the people.

All in all, the feeling of uncertainty emerged as an overarching aspect in the context of constant connectivity, with a resulting desire to get as much information as possible. Besides the general motive to be on top of the latest news and to know what others are doing with their phones, the factor of uncertainty also seemed to play a role regarding the own and others' reactivity, as expressed by one of the participants:

> Sometimes, you also need some time for yourself and you shall consciously take this time. And I find it okay, if others do it. The only bad thing is, that you do not know about it. I mean, you do not let others know about you putting the phone away for one hour.

Diverse reactivity expectancies cause conflicts.

Besides the feeling of uncertainty, also the perceived importance of a message was identified as a factor, influencing the expectancy participants had regarding one's reactivity. Interestingly, the urgency of the response seemed to be more crucial than the matter of the subject itself. In such a case the absence of an answer was described to be more annoying than a reaction time of several days to a question about less timely things. Additionally, the expectancy about the communication partner's reactivity often resulted either from a projection of the own connectivity or it was based on what was known of the communication partner's online behavior from previous interactions. One participant reflected:

> If he has read it and does not reply, although he usually always does, then I know that something has changed. However, in general, if someone needs two hours or a day, then this is not a problem, then you just have to adapt on it.

Participants tended to deal better with a longer reactivity time, which they could anticipate, than with an unexpected alteration of another persons' usual behavior. Interestingly, individuals more often reported internal conflicts or the assumption of a conflict than actual occurrences of interpersonal conflicts. However, because these perceptions still resulted in the pressure to react immediately, individuals frequently stated to evaluate this expectancy in a negative was. A participant argued as follows:

> Definitely a negative aspect is that you're practically almost afraid to open and read a message. Especially when not having the time to answer it. Because you think, other people expect you to reply directly, I'd say.

In context of the varying reactivity expectancy, participants referred to a relatively new WhatsApp feature—two blue check marks—that revealed to others, whether a message had been read. Interestingly, both, having this knowledge and its absence were interpreted quite differently. While some denied being influenced by it altogether, others appreciated this extra piece of information. Others again were quite critical and disliked the notion of monitoring each other. The following remark of a participant illustrates this skepticism: “No, I switched it off on purpose. Also for my own good, so I cannot say ‘you were online, why do you not answer?’, so that I cannot say it, nor can my counterpart”. Then again, not revealing this piece of information was perceived either as mechanism for self-protection or it gave rise to additional suspicions. A participant admitted: “Well you already know the tricks how to circumvent it. You perhaps check the messages only in the preview, you get used to things like this”.

Need for justification.

In combination with a feeling of obligation to react promptly, also the practice of justifying one’s own unavailability was perceived as a negative consequence of high connectivity levels. A person belonging to the group of employees stated: “I also caught myself and wondered why I apologized for being at work. Later you realize that there is no reason to apologize, but you still do it somehow”. One of the students addressed this issue as follows: “If I said I was working, this would be a reason others would accept, but if I said I’ve been at home, I mean, I am a student and I have got nothing to do anyway. I think that is why people have these expectations”.

Participants even reported positive feelings when others believed that they were not available. This clearly emphasized the critical role that the expectancy of others and their knowledge about one’s availability plays.

Perceived Optimal Connectivity

Interpretations of optimal state of connectivity.

Obviously, every participant defined the personal optimal degree of connectivity differently. In regard to a constant free WiFi connection, for instance, some interviewees were wishful thinking about this being the case: “It would be indeed practical having perfect WiFi all the time. Then you could do much more. You could watch videos when sitting in the train”. Others instead stated that they would, on the contrary, embrace these very rare moments of disconnection: “I find it somehow pleasant that there are still situations, in which you do not have Internet, because it forces you to manage without it. And it also works”.

Whereas some participants seemed to be at ease with their momentary level of connectivity, others still struggled in finding their balance. The following three statements provide an idea about character and magnitude of this variation:

> “I try to consciously seek for something I can benefit, getting an added value from. I acquire knowledge or I buy a ticket but I do not just surf the Internet, for example.”

> “I find it alarming doing so much with the phone, the fact that you always need to check everything instantly (….) I wish I would do it less, but actually I do not do anything against it”.

> The first step to improve yourself is realizing your mistakes, and to do so you have to reflect on yourself. This also includes my online behavior, but at the moment I do not see anything that I could change to get a more relaxed and fulfilled life.

Interdependencies and dynamics.

Participants often referred to their environment that made them maintain their high state of connectivity. Be it the characteristics of their current occupational situation or the contact with important others, participants seemed to be aware of the fact that not the technology itself but the interdependencies and dynamics within their network caused such a perception, as the following quote illustrates: “I think we are all dependent on it, also because of peer pressure. Therefore I think we cannot get out of it”. Similarly, another participant stated: “I think, you do it yourself and you are dragged into it”.

Participants indicated to fear social isolation or negative implications related to their jobs, for instance, if they drastically reduced their connectivity level. A participant explained: “I’ve got a degree of connectivity that is structure-dependent. If I now reduced this degree manually, it would have negative consequences on my work that I have to do or my social connections, I’d say”.

Connectivity changes outside daily routines.

A general phenomenon that could be observed was a change of the individuals’ connectivity state in situations outside the patterns of their everyday life. Individuals, who acknowledged the fear of missing out on important messages in their daily life and a resulting high frequency of interaction, stated that their phone would not play a major role when being on holidays. Instead, they would enjoy the relaxation that was linked to a lower level of their availability. Some sort of credo emerged that during holidays one should enjoy and relax without sticking to the phone. One participant stated: “You’re going on holidays and you want to have a great experience there and then the phone actually plays a secondary role”.

Aspects facilitating a conscious handling of connectivity.

In general, participants indicated to strive towards a reflected, self-disciplined, autonomous and selective online lifestyle. Meaningless switches between different social media platforms, the struggle of catching up with a bunch of missed messages, and the constant distraction initiated by incoming messages were identified as major hurdles on this way to the optimal level of connectivity. Participants also expressed their wish for better structures that could assist in distinguishing between important and irrelevant information and that facilitated the channel choice for any communication act. Additionally, also a better agreement with others was sought to avoid confusion. In general, a shared understanding about the online behavior, how to integrate phones into personal conversations, or with what frequency to connect via which channels seemed to be crucial to the process of finding balance between different connectivity states. Often, tensions and conflicts were perceived in situations where such a shared understanding was absent. One of the participants even reported different connectivity needs being the reason for a relationship breakdown, as it was referred to in the following statement:

> And if the person who means much to me and with whom I interact on a daily basis cannot [set boundaries], then you cannot have a relationship, then you fail again and again when it comes to this online life.

Practices of negotiating constant connectivity.

A variety of strategies were reported that participants applied in the process of finding balance between different connectivity states. In regard to the handling of messages, postponing the moment to reply, changing the communication channel, or creating certain time slots for working off the messages were listed. In order to keep a

better overview, messages were intentionally left unopened, so one would not forget to answer them. One person relied on a special smartphone feature that provided some sort of hub, in which all messages from different channels were collectively displayed: ”You can see it at one glance. You do not have to open WhatsApp specifically, you can open [the message] and respond to it there and then directly open the next email without having to change the application”.

A limitation of the own connectivity manifested itself also in the form of rather small steps, such as consciously leaving the phone aside for some time to focus on watching a movie, for instance. One participant even indicated having chosen a special smartphone that did not support gaming applications to limit this kind of temptation completely. For the sake of convenience, activating the flight mode was preferred over switching off the phone. Correspondingly, while some participants used special programs that limited parts of their online activities, a complete online detox mostly seemed to be out of question.

During personal interactions various ways were found to face the always-on lifestyle of different parties, ranging from making demands in a funny way up to banning the phones completely. Also in regard to the mediated communication, individuals tried to balance different connectivity personalities, for instance, by educating one’s opponent. One of the participants stated: “If people are permanently responsive and text you way too much, then you educate them in a manner of purposively needing ten minutes to respond and at some point it sorts itself out".

Throughout the interviews the perspective emerged of regarding one’s optimal level of connectivity neither as a state that could be chosen arbitrarily nor achieved automatically. Instead, participants seemed to be aware that they themselves had to

take action and decisions in order to reach and maintain this state. A participant reflected:

> At the moment I do not have the possibility to choose my optimal level of connectivity, anyway (….) My optimal connectivity degree might be a fluctuating one; that I am not available for some time and then very available for a while. That is actually the optimum and you have to make sure not to stretch the time of high availability for too long, otherwise you'll get very very tired.

Conscious reconsideration.

In some cases, such a reflected perspective was traced back to a state of extreme connectivity that triggered a conscious reconsideration of the own online behavior: be it a phase of heavy online gaming activity or a conflict that resulted from a mismatch of various connectivity personalities. One of the participants also referred to the experience of being without a phone that triggered a reconsideration of the own online behavior:

> I think about it indeed, whether I might do it too much. When I had lost my phone, I did not have one for two weeks and it was really strange (….) It was a new experience that showed me that I might have to change it.

In other cases this kind of consideration was regarded a normal reaction to the general trend of an increasingly connected environment, as another participant stated:

> We have not yet reached the maximum of being online. Although we are online already a lot now, I think we will be do much more online in the future and of

course we have to learn to deal with it. This goes for everything. The kids grow up with it whereas we grew into it.

Discussion

Through its wide focus and qualitative in-depth exploration, this study gave insights into the complex interrelations that can be found concerning the always-on lifestyle of individuals. In the following section the main findings of this research are discussed.

Main Findings

Participants generally struggled in gauging their average online behavior in a quantitative way. The resulting inaccuracy of such data was already shown by Tossell, Kortum, Shepard, Rahmati, and Zhong (2012), who compared self-reported data with real logging data. Their findings demonstrated a significant underestimation of the actual use. Furthermore, the mere usage time was not considered a reliable indicator of overuse, addiction, or other negative effects related to smartphone use (Ahn, Wijaya, & Esmero, 2014), but rather the nature of use and the relationship an individual had to the device (Harwood, 2014). Also among the participants in this study the topic of smartphone addiction was addressed. However, although these discussions were related to a waste of time and the undesired practice of checking one's phone too often, the amount of time or other numbers were not considered the most crucial factor. Instead, being selective and seeking for additional value, were identified as characteristics of a healthy online behavior. In the context of communication with others, autonomy and self-determination turned out as important attributes that contributed to a balanced always-on lifestyle. These attributes match the characteristics

of dynamic connectors, who are at ease with balancing their connectivity as described by MacCormick et al. (2012). Such a perspective is also in line with the findings of Lee et al. (2014), who reported a limited self-discipline as one of the factors associated with an addictive usage behavior. Furthermore, the present study echoes well the findings of Larose, Connolly, Lee, Li, and Hales (2014). They found that insufficient self-control over one's connection behavior was a likely reason for connection overload in the context of Social Media. This research indicates that their findings might also hold true in the context of high connectivity in general.

During the interviews, participants tended to categorize themselves and their connectivity needs, using expressions such as "It is more that I check things that others send me than being active myself" or "there are actually people who text everyone everyday, but I am not the type for this". Statements like these suggest defining some kind of connectivity personality to explain differences in connectivity needs and behavior between individuals. Similarly, with a focus on connectivity technology use and adoption at the workplace, Matusik and Mickel (2011) clustered individuals based on their reactions to responsiveness-accessibility expectations. They identified the categories enthusiastic, balanced, and trade-offs. They also found that individuals' reactions and usage patterns were strongly affected by social influences, what again supports the findings of this research. MacCormick et al. (2012) categorized workers along a connectivity continuum into hypo-connectors, dynamic connectors, and hyper-connectors.

Also the extensive discussions of participants about one's expectancy towards the own and other's online behavior provided enlightening insights. According to these considerations, the behavior of individuals seemed to be influenced by some kind of reciprocal awareness about one's respective connectivity state. This again could result

in a tendency to justify the own unavailability. Individuals often based their expectations and actions on their knowledge of the communication partner's connectivity. Concurrently, they also seemed to be well aware what kind of connectivity image others had of them, a factor that again influenced their own behavior. These observations correspond to the findings of Ames (2013), who explored iPhone use among American college students. Although by the time her study was conducted, students communicated mainly via SMS, calls, and emails, a similar awareness of the other's availability was observed. The present research findings emphasize, how the affordances and the widespread use of mobile instant messengers have reinforced this phenomenon. Applications that provide their users with the actual connectivity status of their communication partner facilitate monitoring and controlling behavior and might therefore also induce higher levels of pressure. Contrary to what described by Ames (2013), however, no pecking order of any kind was observed in the present study. Thus, participants did not openly judge others based on how responsive they were. In case such judgments existed, they were made subconsciously or remained unexpressed. Instead, participants highlighted the desire to concede everyone the personal freedom of not being constantly available.

The objective of this research, to explore how individuals experience the possibility of constant connection, can be answered as follows: A tendency was revealed towards regarding a high connectivity level as an obligation of the everyday life. Certainly, this development is interrelated with blurred boundaries between private and working life (Köffer, Anlauf, Ortbach, & Niehaves, 2015). However, the research findings show that this point of view also manifested itself within the private context of individuals. Participants referred to messages that had to be worked off, the speed of reactivity that was expected, and an environment that assumed them to be online and

to receive information promptly. Overall the findings of this research provide an idea of the strong interdependencies in the individuals' networks that affect the personal connectivity level.

This article could provide the impression that the negative consequences of connectivity overshadow its positive implications. An interpretation that seems to be more likely, however, is that constant connectivity has indeed become the normal state in the lives of individuals. Overall, a fading distinction between the status of being offline and being online became apparent, which is in line with the considerations of other scholars (Elwell, 2013; Madianou, 2014). Under this condition, negative events might become more remarkable whereas the positive aspects of constant connectivity are taken for granted. This phenomenon that negative aspects play a greater role in the process of forming an overall evaluation, is also referred to as negativity effect (Kanouse, 1984).

A general amplification of the sentiments towards the own online lifestyle seems also possible. Hence, the notion of constancy of one's connectivity might result in higher levels of stress and pressure for those who already associate negative feelings with their high connectivity level. Those, by contrast, who are able to disengage from such a feeling of pressure, might succeed in reaching a positive state in which moments of disconnection do not interfere with the notion of the always-on lifestyle. A similar amplifying character of smartphones in the context of work engagement behavior was observed by MacCormick et. al (2012). Furthermore, they reported a growing tendency of individuals acknowledging their own responsibility to balance their connectivity, a perspective that was also expressed by participants in the present study.

Practical Implications

The conversations with the participants of this study gave the impression that moments of coerced disconnection were also used as opportunity to take a break from the obligation to be constantly available and connected. These findings could provide valuable assistance for the touristic industry, offering an approach how to better meet the needs of its customers. By facilitating their process of disconnection, for instance, new offerings could be created that allow for the experience of modern forms of relaxation.

The findings of this study can also be of use for policy makers. They might base their future decisions on the indication that only individuals who are able to actively set boundaries to their constant availability might profit from the trend towards an even higher WiFi coverage and the elimination of roaming charges in Europe (Milligan, 2016).

Similarly, government decision-makers may feel the need to revise the curriculum of the next generations. Because the trend of enabling better infrastructure is unlikely to be stopped, it becomes necessary to provide individuals with some sort of assistance. This is particularly true, if one regards the ability to balance one's connectivity states as a modern skill. Participants in this study repeatedly expressed concerns for coming generations. It might therefore be worth consideration integrating this aspect when teaching technology use in school.

Lastly, findings of this research also help service providers develop better-designed applications and products. The different practices individuals apply to manage their information input to avoid suffering from overload or distraction, and the difficulties they face during this process, highlight the need for improved services that facilitate a more deliberate handling (A. R. Lee, Son, & Kim, 2016) rather than impede such a behavior.

Theoretical Implications

The considerations that were made by the participants about their desired smartphone and online behavior contribute to the understanding of Internet or smartphone addiction. Findings of this study suggest that Internet misuse or overuse should also include the question whether the need for autonomy and self-determination in regard to the interpersonal communication is satisfied, and whether the consumption process contains of selective, value added actions that are in line with the individuals' gratification needs.

The results of this research indicate that the concept of a connectivity personality might be highly interrelated with other components of the person's personality. A more consistent conceptualization that assists and facilitates further investigation of the always-on lifestyle of individuals is needed. Yet, findings of this study already serve as a useful basis to explain the occurrence of tensions and interpersonal conflicts.

This research adds to the understanding of online connectivity as a fast paced and highly complex phenomenon. Surprisingly, it was observed that the participants already perceived a growing generation gap between the own age group and younger individuals. Participants in this study can be considered as belonging to the last generation that has grown up without smartphones and other Internet-enabled devices being a fixed part of their daily life. Their considerations about how this fact has coined their connectivity needs contribute not only to the field of connectivity research but can also be of value for scholars investigating differences between generations.

Limitations

As any cross-sectional research, this study is limited by the characteristics of the participants. A generalization to other individuals than those who participated in this

study is not claimed. With one exception, all participants were either students or obtained an undergraduate degree. Their rather reflected perspectives about factors constituting to a maladaptive Internet use, for instance, could be related to such a high level of education. Naturally, also general limitations of qualitative research apply to this study. It is therefore limited due to the fact, that the process of coding must be regarded an “interpretative act” (Saldaña, 2015, p. 4), in which the data are reduced. Qualitative data analysis always relies on the perspectives, assumptions and experiences of the respective researcher that might induce some bias.

Additionally, the convenience, purposive research sampling strategy did not allow for great variation across the interviewees regarding their age, social background or educational level. Twelve out of the twenty-five German participants were students at the University of Twente, located in the Netherlands in close distance to the German border. This group of participants therefore lived or studied outside their country of origin, an aspect that might have influenced the findings.

Future research is needed to verify and extent the findings of this study. Other scholars should, for instance, repeat the gathering and analysis of rich qualitative data among other populations and age groups. This way, insights about variations between different cultural, socio-economic, and educational backgrounds could be obtained. Also long-term studies are required to achieve reliable results that are not influenced by the current mood of the participants or external factors.

In this study, interviews were the only means of data collection. Therefore, a triangulation approach is needed to verify the present findings. More attention should be given to obtain real usage data. The analysis of such data, possibly in addition to self-reported qualitative data, is needed to provide a context to the descriptions and indications of individuals.

Conclusion

The possibility of constant connectivity has become a normal state in the lives of individuals that is characterized by its complexity. Because the phenomenon of constant connectivity is also defined by the individuals' network, its processes and interrelations can have major implications. Thus, the question how much to connect cannot be answered detached from a person's environment and contacts. Individuals depend not only on other people in their network but also on its particular structures. Just going offline does not seem to be a solution. Instead, by actively striving towards the own optimal level of connectivity it can be possible to find one's role within the modern networked world. A requirement for this, however, seems to be the constant process of reflecting and evaluating on the own online behaviour. This process of finding a personal balance might have become indeed a modern skill that needs to be trained.

To conclude, not being afraid of a disconnection but rather embracing or even deliberately creating moments in which we do not keep up with the amount and the high speed of information might be a good path towards the acknowledgement of some sort of uncertainty that seems to be inherent to this modern age. Thus, by distancing ourselves from the desire to know everything about others when not being with them, we might even enjoy the personal contact even more. Seeing constant connectivity as a chance rather than an obligation could become a credo to make fruitful use of the ample and exciting possibilities that the technology provides us with.

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