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„The relationship between problematic Facebook usage, empathy and prosocial behavior“

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1 Introduction

This thesis is about the relationship between problematic Facebook usage, empathy and prosocial behavior. An overview about the field of Internet research will be given. One relevant model, the *Generalized Problematic Internet Use Model*, will be introduced especially in the context of problematic Facebook usage. Problematic Facebook usage refers to an addictive tendency, where Facebook-related cognitions and behaviors become compulsive and maladaptive, and eventually result in negative outcomes. This will be followed by a general introduction on the nature and history of Facebook, as currently one of the most popular social networking sites. As addiction can have negative outcomes on people's empathy, and as previous studies could additionally show especially in the context of Internet-related behaviors that empathic skills can be impaired, the assumption about a negative association between problematic Facebook usage and empathy will be stated based on the current research status of this field. It will also be reported, if and how empathy and prosocial behavior are related to each other. Further it will be explained, how the hypothesis was generated that as a result of reduced empathy, prosocial behaviors, such as helping others in need, should occur to a lesser extend among people showing problematic Facebook usage.

The recruitment and the sample will be described and all questionnaires used for the purpose of this study will be illustrated and their psychometric properties will be given. The procedure of the behavioral task of this experiment will be explained and possible confounding variables will be considered. All measured variables will be described, in particular empathy, prosocial behavior and problematic Facebook usage. All statistical analysis and procedures applied will be presented, followed by the statistical results of this study. Thereby descriptive as well as inferential statistics will be mentioned. The last section will address the discussion and interpretation of the results from a theoretical background as well as limitations of this study. Finally possible future perspectives will be discussed.

2 Theory

Since about twenty years researchers started to focus on problematic aspects of Internet usage (Lee, Cheung, & Thadani, 2011). Larose, Kim, and Peng (2010) mention that the attention of relatively little research addresses harmful effects of Internet consumption that is in a way excessive or compulsive. But there are obviously risks and bad outcomes that can be assumed, like for example addictive tendencies. For a coherent and deeper understanding, models of abuse and addiction can be applied theoretically and empirically to Internet-related behaviors.

2.1 Generalized Problematic Internet Use Model 2 (GPIU2)

One widely used model in the context of problematic Internet usage is the one by Davis (2001). He proposed a cognitive-behavioral model to explain addictive tendencies associated with the Internet and called it *Generalized Pathological Internet Use Model (GPIU)*. As defined by Davis (2001), generalized pathological Internet usage refers to multiple dimensions of Internet-overuse. It can be that the person has no clear objective while being online, but it can also involve a social aspect like dependence on Email or chat groups. Humans need and desire for social contacts can be obtained online and can result in a greater wish to maintain a virtual social life. When it comes to developing and maintaining such problematic behavior, procrastination plays a significantly important role. His model combines problematic cognitions and behaviors, but at the same time proceeds on the assumption that maladaptive cognitions cause problematic behaviors rather than vice versa. Those cognitions can involve rumination, self-consciousness, reduced self-worth, depressive thought patterns, reduced self-esteem, and social anxieties. Davis (2001) claims that individuals who have psychosocial problems in the first place, can show predispositions for maladaptive Internet-related cognitions and difficulties in behavioral impulse control, which can lead to different types of negative outcomes. Those negative outcomes are mainly problems in daily functioning resulting from the wasted time online. Responsibilities can be done delayed and pressure might therefore increase. The Internet plays an important role in the social life of people who suffer from this pathology, as it acts as their main source of communication. In extreme cases it can be seen as their only link to the real world. Davis (2001) does

not provide any cut-off, threshold of behavior or even threshold of cognitive functioning in his model. He rather sees pathological and healthy Internet usage on a continuum, where the individual decides to which amount he or she sees the Internet usage as adaptive or maladaptive. Since Davis (2001) first introduced his *Generalized Pathological Internet Use Model (GPIU)* researchers could investigate his theoretical construct and validate it. Caplan (2010) developed the *Generalized Problematic Internet Use Model 2 (GPIU2)* and found particular cognitive and behavioral constructs to be related to negative outcomes of Internet usage. The revised model and the associated constructs will be described in the following section, as Caplans (2010) updated model will be used for the purpose of this study. At this point it should be mentioned that Caplan (2010) replaced the word "pathological" with the word "problematic". In accordance to this change, "problematic" will be used synonymously to "pathological" in the following text.

The constructs that could be identified as being highly relevant in this model will be presented in the following section. *Preference for Online Social Interaction (POSI)* is one important construct assessed by the GPIU2 (Caplan, 2010). People with such a preference feel safer, more efficacious, more confident, and more comfortable with online interactions compared to face-to-face interactions. People who suffer from loneliness, social anxiety or who´s social skills are deficient tend to have higher *POSI* scores (Caplan, 2003). *Mood Regulation* is also a predictor of *negative outcomes* of Internet usage (Caplan, 2002). Caplan (2007) points out that socially anxious people may prefer online interactions because it facilitates the reduction of fears about self-presentation in interpersonal settings. *Deficient self-regulation* as part of the *GPIU* refers to diminished conscious self-control and this represents a state of deficient self-regulation (LaRose, Lin, & Eastin, 2003). It leads to problems with monitoring one's own usage, on judging one´s usage behaviors, and adjusting patterns of usage (Bandura, 1991). This construct represents the interplay between compulsive behavioral symptoms and obsessive cognitive symptoms. When there are several cognitive symptoms, this can lead to behavioral symptoms. *Cognitive preoccupation* refers to obsessive thought patterns concerning Internet usage. So understanding someone´s obsessive thoughts may help us to gain an insight as to how it leads to negative outcomes (Caplan, 2010). *Compulsive Internet Use* is then seen as a consequence of *deficient self-regulation* (Kim & Davis, 2009). Shapira et al. (2003) therefore define it as an impulse control disorder, which

is present when usage gets uncontrollable or when it interferes with activities of living (Kim & Davis, 2009). Figure 1 serves as a visualization to better understand the interplay of the different constructs that are related with negative outcomes associated with problematic Facebook usage.

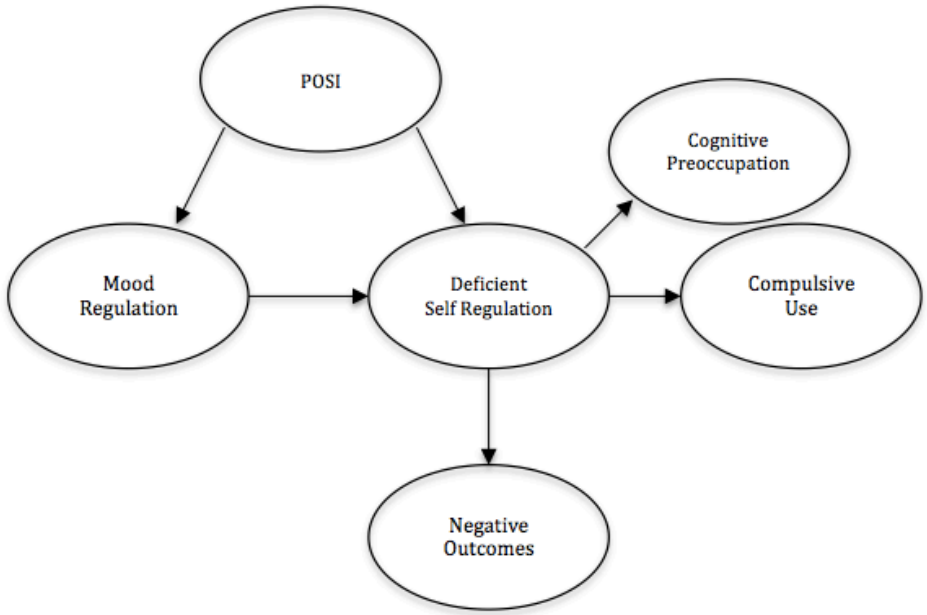

Figure 1. The Generalized Problematic Internet Use Model (Caplan, 2010)

What Caplan (2002; 2003) did when he worked with the cognitive-behavioral model by Davis (2001) and updated it, is developing a newer version of the questionnaire, the *Generalized Problematic Internet Use Scale 2 (GPIUS2).* The scale tends to assess very general and global problematic aspects of the World Wide Web. What is critical about a generalized and undifferentiated view on the Internet is that specific features of it are not considered separately. The Internet captures many possibilities of usage. It involves activities like social networking, messaging, gaming, downloading of media files, and online shopping, only to name a few. This is one reason why it seems rational to take a closer and deeper look on one feature in particular, in the case of this study, Facebook. Why this is of special interest will be defined in the following section, where social networking sites and in particular Facebook will be introduced.

2.2 Social Networking Sites and Facebook

Many studies that have been reported in the past didn´t distinguish between the big variety of online activities that could be described as problematic, addictive, or unregulated (Larose et al., 2010). For example, in the work of Caplan (2003), social networking sites weren´t included or mentioned at all. But exactly those are the Internet activities that are nowadays most commonly used. Larose et al. (2010) name the recent development of this social feature of the Internet as a possible reason for the relatively sparse research efforts on this topic. Social networking sites are becoming more and more popular (Boyd & Ellison, 2007), especially among college students (Larose et al., 2010), who are constantly considered and proven to be frequent and heavy Facebook users (Lee et al., 2011). So even if the medium is relatively new, because of its high relevance nowadays, research efforts should be expended by several disciplines.

Even if all social networking sites have a lot in common and a similar purpose, which is to make social interactions easier and less complicated, specific patterns of different social networking sites differ in many aspects (Boyd & Ellison, 2007) and therefore it is not possible to generalize from one social networking site to another. Ryan, Chester, Reece, and Xenos (2014) suggest that it would be better to focus on one particular social networking site rather than on social networking sites in general. Of special interest is Facebook, as it is one of the most popular social networking sites in Germany and worldwide. Mark Zuckerberg invented it in the year 2004. Facebook was primarily designed only for students of the Harvard college, but by the year 2005 it dramatically expanded and anyone in the world who had access to the internet could make an account from that time on (Boyd & Ellison, 2007). Registration is for free; the only requirement is a valid email address. In the year 2015 Facebook already had 1.65 billion active users per month, more than one billion of them log in every day and it has over 50% mobile users daily (Ryan et al., 2014), just to illustrate it´s massive purview. This brings many upsides, but also downsides. It could be shown, that the main motivation to be active on Facebook is to keep in touch with friends, to maintain bonds over distance, to reduce loneliness or to relieve boredom (Wilson, Gosling, & Graham, 2012), which is obviously beneficial for the user. Being on Facebook to pass time, to use it as a dating tool, to connect socially, for

entertainment, or for information seeking are named to be further benefits of the Website (Satici & Uysal, 2015). Compulsive use as a possible negative consequence on the other hand can be seen as one potential harmful effect. Even though the field of problematic Facebook usage is still lacking and insufficient, Caplans (2010) theory is considered as an appropriate model to apply to social networking site addiction. How that works out and how certain researchers implemented it, will be elaborated on the next section.

2.3 Problematic Facebook Usage

Problematic Facebook usage is not officially a mental disorder in any diagnostic manual. But research in psychology and other scientific fields has raised concerns about problematic Facebook usage leading to undesirable suffering. It is important that the psychological processes that affect behavior and behavioral outcomes associated with this new age of media are understood (Anderson, Fagan, Woodnutt, & Chamorro-Premuzic, 2012). Just recently the American Psychiatric Association (APA) discussed and considered taking the diagnosis “Internet Use Disorder” in the appendix of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), but decided against it**.** Worth mentioning is though, that they recognized and included the term “Behavioral Addiction” in it. It was written in the appendix of the manual that Internet addiction, as a behavioral addiction, causes symptoms similar to those normally associated with substance-related addictions. These can be mood modification, increased salience, higher tolerance, and symptoms of withdrawal, resulting conflicts, as well as possible relapses (American Psychiatric Association, 2013).

Compulsive behaviors can occur in many different domains such as gambling, food disorders, compulsive buying, or alcoholism. They have several features in common, regardless of whether it is a substance related addiction or not. Similarities can involve for example dependence on psychological and/or even on a physical level, loss of control over the behavior and hence negative consequences in daily life (Anderson & Brown, 1984). Social networking site addiction was conceptualized as a difficulties to regulate usage, and as a result of that, negative outcomes in inter- and

intrapersonal settings (Larose et al., 2010). Even though the field of Internet related addictions is lacking greatly, some progress was done.

A review of Kuss, Griffiths, Karila, and Billieux (2014) demonstrated that there exists no measurement for the assessment of problematic Facebook usage that reaches the gold standard and also no theory about Facebook addiction or compulsive usage that is widely accepted by the research community. There are numerous measurements for assessing social networking site addiction; most of them have serious limitations and some instruments show dramatic validation lacks. Although there are some that are considered to be good. Especially the social skill model from Caplan (2010) is considered as being appropriate (Ryan et al., 2014) and will be used for the purpose of this study. Building on this model Lee et al. (2011) adapted the GPIUS2 for the investigation of problematic Facebook usage by replacing the word Internet with the word Facebook. They then tested the GPIUS2 model and the measurement particularly in the context of problematic Facebook usage. It turned out to be a valid new instrument for the assessment of problematic Facebook usage with good psychometric properties (Lee et al., 2011).

The results from Lee et al. (2011) support the model theoretically in a way that *Preference for Online Social Interaction (POSI)* and the use of Facebook for *Mood Regulation* could predict *Deficient Self-Regulation* (*like compulsive use* and *cognitive preoccupation*) of Facebook use. This in turn seemed to have a predictive influence on *Negative Outcome*. Detailed information on psychometric properties will be given in the measurement section. The next construct that needs to be operationalized below is empathy.

2.4 Empathy

Although most people have an idea of what empathy is, there is no generally accepted definition of this concept among researchers (Reniers, Corcoran, Drake, Shryane, & Völlm, 2011). Konrath, O'Brien, and Hsing (2011) also say that empathy as a research field suffers from definitional issues. One aspect that is widely discussed is, if empathy refers to a construct that involves sharing someone´s emotional state, or to a construct that refers to overtaking someone´s perspective, or

if it includes both. Accordingly to Davis (1983) empathy can be divided into two components. Affective empathy involves the recognition of another person's emotions, based on facial expressions, body gestures and voice prosody and is followed by an emotional response. Reniers et al. (2011) furthermore define affective empathy as the ability to be sensitive to and vicariously experience the feelings of others. It can on the one hand involve emotional contagion, which encompasses the automatic mirroring of the feelings of other people. On the other hand it involves proximal responsivity, which is the affective response given when witnessing the mood of others in a close social context, and peripheral responsivity, which encompasses the affective response when witnessing the mood of others in a detached social context.

For cognitive empathy it is implied, that information is kept in mind and manipulated. This leads to a working model, where the representation of someone´s cognitive or emotional state can happen on an explicit level or even on a level of implicit meta-representation (Davis, 1983). Correspondingly cognitive empathy is defined as the ability to construct a working model of the emotional state of others and includes perspective taking. Perspective Taking refers to a construct that is about intuitively putting oneself in another person´s shoes in order to see things from his or her perspective. It also includes online simulation, which is an effortful attempt to put oneself in another person´s position by imagining what that person is feeling and it is likely to be used for future intentions (Reniers et al., 2011).

Even though Problematic Facebook Use and empathy are constructs that suffer from unstandardized operationalizations, an association between them can be drawn, even if different studies used different measurements. The following section will address this relationship.

2.4.1 Empathy and Facebook

Due to limited research and ambivalent results on this topic, there is little evidence to support the existence of the link between Facebook and empathy. Some researchers found positive associations but some could already show a negative association.

For example Chan (2014) was able to show that empathic social skills tend to be reduced when Facebook usage is high. He defines empathy as an ability to recognize and share feelings another person is experiencing and empathic social skills as one key dimension of empathy. Empathic social skills are defined as skills of encoding, decoding and regulating communication (Riggio, Tucker, & Coffaro, 1989). In his study he also hypothesized that Facebook usage would reduce the positive relationship between extraversion and empathic social skills. Extraverts are to him outgoing, sociable, and warm. They seem to have a prosocial orientation that predisposes them with good social skills (Chan, 2014). What he then hypothesized is that people scoring high in neuroticism are less able to empathize. People scoring high on the neuroticism scale have little ability for developing a social repertoire to function comfortably in interpersonal settings (Stritzke, Nguyen, & Durkin, 2004). Hence he hypothesized that Facebook usage lessens the negative effect from neuroticism on empathic social skills. Chan (2014) measured extraversion and neuroticism with the Revised Neo Personality Inventory NEO-PI-R (Costa, & McCrae, 2008) and he measured empathic social skills with the Empathy Quotient (Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003). Facebook usage was only measured by number of friends and number of postings, which is probably not a very revealing source of information, but still gives some insights. Chan (2014) also surveyed the satisfaction with life scale (Diener, Emmons, Larsen, & Griffin, 1985~~).~~ The results concerning the first hypothesis were relatively clear, when Facebook usage was high; the positive effect of extraversion on empathic social skills was reduced. The results on the second hypothesis are more ambivalent. When Facebook usage was high, the negative relationship between neuroticism and empathic social skills was strong. When Facebook usage was low, the negative relationship was small (Chan, 2014). So Facebook usage seems to suppress empathic social skills in extroverted and neurotic individuals. The explanation the study provides is that high Facebook usage suppresses empathic social skills by replacing the real world with the online world, which has a bad impact on someone´s ability to show empathy towards others. So while it can act as a beneficial tool in complementing real life interactions, a strongly extended usage captures the risk of replacing face-to-face interactions and as a result weakens empathic responses towards others (Chan, 2014). The study has several limitations. One is that the data that were used are based on self-reports and that it is a cross-sectional survey,

rather than a longitudinal study that would allow drawing causal conclusions. The sample size was also relatively small. Additionally it must be mentioned that the methodology of how Facebook usage was measured was oversimplified. The author only included number of friends and time spend on Facebook in the analysis. Also no control or possible confounding variables were taken into consideration. Another relevant study addresses the relationship between Facebook usage and empathy and will be mentioned below, even if the sample is relatively uniform.

Wang, Ge, Zhang, Liu and Luo (2014) found out, that Internet addicted urban left-behind children in China showed impaired empathic responses towards the pain of others. Urban left-behind children are children where not the parents, but mainly nurses or for example other relatives take care of, and raise them. The study consisted of two groups of 15 children each; one group of Internet addicted left-behind children and one group of left-behind children without Internet addiction. All participants had to complete the pathological Internet use scale (Lei & Yang, 2007) and had to look at 102 images (51 pairs) of pain and non-pain related scenes. Additionally electrical brain activity was measured. There was a main effect for pain; the reaction time measured for non-pain stimuli was significantly shorter in the behavioral part of the experiment. Internet addicted left-behind children showed longer reaction times on average and less accurate responses than the control group for pictures with or without pain. This indicates that the ability to identify pain seemed to be impaired in the group of Internet addicted left-behin children. Thereby especially cognitive processing, and assessment, seemed to be impaired in the internet addicted left-behind children group as could be shown with the Event Related Potential (ERP) results. Automatic processing was not impaired, only cognitive processing seemed to be reduced (Wang, Ge, Zhang, Liu, & Luo, 2014). What limits this study in generalizing among the general population is the very small and special sample of urban Internet-addicted left behind children from China. An advantage is that physiological measurements are used instead of simple self-reports. Another investigation with a very different study design also postulates a negative association by pointing out that the change in social media clearly has an effect on our lives; it might alter interpersonal dynamics like for instance empathy.

In one big cross-temporal meta-analysis that investigated dispositional empathy scores for some particular Interpersonal Reactivity Index (IRI) subscales

(Davis, 1983) among American college students of the 1970/80s and 1990/00, a dramatic decrease of empathy scores could be detected (Konrath et al., 2011). Following Davis' (1983) definition of empathy, as a tendency to react to other people's experiences, empathy captures the ability to relate to others in a cooperative and unified way, rather than with conflicts or isolation. The IRI (Davis, 1983) encompasses a multidimensional theory of empathy, where also two components, a cognitive and affective one, are assumed. In this study the authors correlated the mean scores of the IRI subscales with the year in which the data were collected and the sample size weighted for assessing changes over time (Konrath et al., 2011). Two of the scales are of special relevance here. The EC (Empathic Concern) scale is known to correlate high with prosocial attitudes and behaviors and also the PT (Perspective Taking) scale shows some relatedness to prosocial outcomes (Davis, 1983). The FS (Fantasy) scale and PD (Personal Distress) scale otherwise don't seem to be related to prosociality (Davis, 1983) and are therefore not relevant for further discussions in this context. Konrath et al. (2011) assume that young people are less involved in deep interpersonal social interactions and are more likely to act isolated in online environments. Milgram (1978) for example postulated that physically distant environments create a buffer between individuals because of their physically distant nature. This can make it easier to ignore the pain others are experiencing. An online environment falls in the category of being a physically distant environment and therefore the postulation of Milgram (1978) is transferable to this context The results of the study of Konrath et al. (2011) showed that American college students scored significantly lower on EC and PT scales between 1979 and 2009, primarily since 2000. Before 2000 the decline seemed to be relatively constant whereas after that, it strongly decreased. Konrath et al. (2011) are of the opinion that the effect sizes are high enough to predict future tendencies of empathy. The authors extensively discussed the fact, that a causal conclusion about the decrease cannot be drawn easily. But they speculated, adapted form previous studies and results, about parallel occurring societal processes that may be related. They point out that one contributor is personal technology and media use, especially social media use, which significantly increased around the year 2000, that keeps people from interacting in real life because the online reality replaces real life interactions. This could alter interpersonal dynamics like empathy, although it is not clear if the effect is a cohort or a time-period effect.

2.4.2 Empathy and Addiction

These aren't really surprising results when compared with findings on impaired empathy in other addiction disorders, although knowledge about empathic processes among addicted people is still lacking (Ferrari, Smeraldi, Bottero, & Politi, 2014). In the past empathic deficits could be found in several disorders such as Autism, Bipolar Disorder, Depression, Frontotemporal Dementia, and Schizophrenia (Lawson, 2013). Especially the cognitive component of empathy very often seems to be impaired in these disorders. One study examined empathy in alcohol addiction patients. In the article of Ferrari et al. (2014) also two components of empathy were postulated, an emotional/affective and a cognitive one. What they assessed is the empathic ability in patients with drug addiction and also if there occur any differences between the two components of empathy. The study included 62 participants with a control group of 40 volunteers without any psychiatric disorder or abuse problems. Questionnaires used were the empathy quotient (EQ) (Lawrence et al., 2004) and also the Wechsler adult intelligence scale (WAIS-R) (Wechsler, 2008). No correlations could be found between IQ and EQ. The group of drug addicts showed reduced emotional empathy scores, but no statistical significant difference could be found in cognitive empathy scores and social skill scores. Men in the group of drug addicts statistically had significantly lower scores on the EQ compared to the control group. This could not be found for females. The reason for this could be that women scored higher than controls on the cognitive empathy score but lower on the emotional one, which could balance out the results on a statistical level. But the impairments seem to be specifically stable among the emotional empathic component whereas the cognitive one seems to be preserved (Ferrari et al., 2014). The sample size is relatively small and the data are based on self-reports, which can be seen as a limitation of the study. It is also questionable if substance related and substance unrelated addiction are comparable. But still, the results make a two-component view of empathy more likely and strengthen the assumptions of a relationship between empathy and addiction. So does the study by Preller et al. (2014), which investigated mental perspective taking, emotional, and cognitive empathy in cocaine dependent or recreational patient. In their investigation one hundred cocaine users (of which 69 were recreational cocaine users and 31 were dependent cocaine users) were compared to a control group of 68 healthy participants. Emotional empathy was significantly reduced compared to the control

group whereas cognitive empathy didn´t show any significant differences. Dependent patients additionally had a higher error rate in mental perspective taking. Again the sample size is relatively small and a comparison between cocaine addiction and Internet addiction is questionable. But it underlines the theoretical assumption that addiction, no matter which kind, and empathy are likely to be related.

To summarize the described findings it can be said that while Facebook provides new opportunities for communication on the one hand, it captures the risk of reducing empathic responses towards others on the other, which is crucial for effective communication. The negative association between problematic Facebook usage and empathy could have an impact on prosocial behaviors, because as we know from extensive psychological research, empathy plays a crucial role in causing prosociality (Stocks, Lishner, & Decker, 2010; Batson, 2012)**.** Following this train of thought, problematic Facebook usage could have a negative impact on empathy and lead to less prosocial outcomes. For further discussions and analyses, the concept of prosocial behavior will be operationalized in the following section.

2.5 Prosocial Behavior

Prosocial behavior can be defined in multiple ways, there is not one widely accepted definition that the research community agrees on, but it is in accord with most definitions described as an action with the goal to voluntarily benefit others. One reason why people help or show prosocial behavior is likely to be related to certain empathic processes (Preston & de Waal, 2002). To have a closer look at the relationship between empathy and prosocial behavior, it is necessary to operationalize and standardize the construct. One could define two types of prosocial behaviors. First, formal prosocial behavior is seen as planned, not spontaneous and the receiving person is not present. Examples are giving money to charity, blood donations and volunteering at charitable institutions. Secondly, informal prosocial behavior is spontaneous, sudden, and unexpected, as well as on time and the receiving person is present. Examples to help a distant other are to give directions, or to give money to a homeless person. To help a close other one could help with housework or lend money (Einolf, 2008). How empathy and prosocial behavior are

associated with each other and why a positive relationship between them is assumed in this study, will be presented in the following section.

2.5.1 Prosocial Behavior and Empathy

Although the investigation of the relationship between empathy and prosocial behavior is also confronted with problems concerning inconsistent operationalization, concepts, and definitions, the positive association is reasonably valid. A large body of research found positive associations between empathy and different types of helping behaviors, just a few will be mentioned below. As we know from extensive psychological research, empathy plays a crucial role in causing prosocial behavior (Stocks et al., 2010). Batson (2012) postulated the empathy-altruism hypothesis, which basically explains that empathy evokes altruism, the goal of which is to provide the well-being of someone who evoked the empathic feeling (Batson, 2012). Stocks et al. (2010) also summarize in their study, that people who feel empathy towards another person in need, tend to help significantly more often than people with relatively little feelings of empathy. Wilhelm and Bekkers (2010) investigated empathy and helping behavior as well. They distinguish between dispositional empathic concern and principle of care. Thereby they see dispositional empathic concern as a tendency to feel concern, sympathy, or to show compassionate reactivity towards someone else in need. Principle of care is on the other hand understood as a moral construct, where someone would feel that they should help others in need (Wilhelm & Bekkers, 2010). Although these definitions differ from the concepts of affective and cognitive empathy, they show some relations. The authors point out that principle of care captures cognitive processing, while empathic concern captures an emotional response with little consciousness. In this context principle of care can be understood as equivalent to cognitive empathy, and empathic concern as equivalent to affective empathy. The authors used the items for helping behavior from the General Social Survey (GSS; Smith, 2003). They then tested the hypothesis that both components are related to helping behaviors, but also that principle of care is mediating the empathic concern – helping association. Because the investigation is based on a cross-sectional design, a causal conclusion can only be discussed from a theoretical point of view. With the results they identified that both constructs are related to helping behavior and principle of care showed stronger correlations. When

partially regressed out, it even weakened the association between empathy and helping. This wasn't the case the other way around. In general it can be concluded that the results replicate previous findings on a positive empathy-helping relationship. Critical is that the study was only based on self report-data (Wilhelm & Bekkers, 2010). Based on the literature and findings that were described so far, the pending research question of this study evoked.

2.5.2 Prosocial Behavior and Facebook

There is little to no research done on a relationship between Internet-related subjects and prosocial behavior in the strict sense. But a relatively closely related concept could be shown to be associated. Social capital has several of definitions and is seen both, as a cause and an effect (Ellison, Steinfeld, & Lampe, 2007). It has been defined the sum of resources one gets from relationships, which can then differ in form and function. Social capital seems in general to have several positive outcomes, of which prosocial behavior can be seen as one of them. As a contrary example it has been shown that when social capital declines in a society, that can cause negative consequences (Ellison et al., 2007). Helliwell and Putman (2004) reported for instance that a decrease of social capital leads to more social disorders, less civic activities and more distrust among community members. The better and greater social capital is, the more commitment to the community appears and the higher the ability to organize collective actions becomes, that have the goal to be beneficial in some ways. So in general it seems to have a positive effect on the interactions of people in social networks. There are studies, which have found negative relationships between social capital and Internet. Quan-Haase and Wellman (2004) point out that that online social contact can become intense and draw people away from their real life face-to-face interactions. It has been shown that weak online social ties seem to be increasing in number whereas strong offline social ties show a decrease (LaRose et al., 2003). Quan-Haase and Wellman (2004) name the time spend online as a reason why individuals do not pay as much attention towards their physical environment as they would do if they were not online. Putnam (2000) says that this technology can prevent people from participating in their immediate environments and as a consequence reduce social interactions and also civic engagement. It could therefore be assumed, that reduced social capital may have an

impact on prosocial outcomes and further that the extensive usage of the Internet reduceses prosociality. As mentioned above, no previous investigations studied a relationship between the Internet, or Facebook, and prosocial behavior.

2.6 Possible Confounding Variables

Former studies, which investigated gender differences in Facebook use, could show that women report to struggle significantly more with managing the amount of time spent on Facebook. They are more likely to suffer from sleep deprivation, they feel closer towards their Facebook friends than males do and they reported Facebook causing stress and also a feeling of being addicted to the website stronger than men did (Thompson & Lougheed, 2012). The study of Muscanell and Guadagno (2012) for example also investigated several differences between gender and found differences concerning the motivation to use Facebook, the usage of features and several more. McAndrew and Jeong (2012) as another example showed that women are stronger and heavier Facebook users than men. Also the construct of empathy differs among gender. When the method of assessment for empathy was based on self-reports, women and men showed significant differences with women scoring higher (Eisenberg & Lennon, 1983). Also Rueckert and Naybar (2008), Reniers et al. (2011), and Singer and Lamm (2009) investigated differences in empathy in men and women and reported among other things that men scored lower on empathy scales than women. Reasoning that gender could have an impact on the relationship between empathy and the other variables, it was decided to control for this variable. Although there is no great variety in education among all participants of the current investigations, it was decided to control this variable as well. Age was also controlled because it is known, that the features used and the users habits of Facebook differ among different age groups (McAndrew & Jeong, 2012). As social desirability is known to represent a bias, because it influences the tendency to answer questionnaires in a socially acceptable or favorable way, and also act different in behavioral experiments, this was also considered as a control variable in the partial correlation (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

3 Research Question

The pending research questions is derived from previous results that will be summarized shortly one more time. Individuals with lower social skills and reduced empathic abilities tend to use Facebook to a greater extend. This usage can even become problematic or compulsive. The causality is thereby unclear, problematic Facebook usage could reduce empathy but it could also be the other way around, that individuals with reduced empathy are more likely to get involved with Facebook excessively. Additionally there are findings that support the fact that addiction in general tends to lead to lower empathy; this makes it plausible to assume that problematic Facebook usage as an addiction lessens empathic abilities. Because empathy is important for prosocial behavioral outcomes, it can be assumed that individuals with reduced empathy due to problematic Facebook usage might show lower levels of prosociality. There are no studies that investigated the particular relationship between problematic Facebook usage and prosocial behavior; this thesis is therefore derived from theoretical assumptions as well as findings of decreased social capital among heavy Internet users. It is hence reasonable to ask, if there is a negative association between problematic Facebook usage and prosocial behavior that is mediated through empathy. This particular relationship has not been investigated in psychological research so far even though it´s relevance became obvious when considering the current state of research. As a result, the following hypotheses can be formulated:

H1: There is a negative association between problematic Facebook use and prosocial behavior that is mediated by empathy.

To test this mediation model the following three hypotheses need to be confirmed.

H2: There is a negative association between problematic Facebook use and prosocial behavior.

H3: There is a negative association between problematic Facebook use and empathy.

H4: There is a positive association between empathy and prosocial behavior.

A causal conclusion cannot be drawn easily, because people with lower empathy could tend to show problematic social networking site usage in the first place. But due to the fact that research in this particular field is lacking and in it´s early stages, this study has an exploratory character and possible influential variables will be discussed from a theoretical and empirical background.

4 Procedure

This cross-sectional study consists of several questionnaires and socioeconomic data collection, followed by two tasks to assess actual prosocial behavior. Measurements used are the Questionnaire of cognitive and affective empathy (QCAE; Reniers et al., 2011), the modified version of the Generalized Problematic Internet Use Scale 2 for Facebook usage (GPIUS2; Lee et al., 2011), the Facebook Intensity Scale (FBI; Ellison et al., 2007) and the questions derived from the General Social Survey (GSS; Smith, 2003) concerning the frequency of specific formal and informal prosocial behaviors (Einolf, 2008). Also the Social Desirability Scale-17 (SDS-17; Stöber, 2001) and the Toronto-Alexithymia-Scale 26 (TAS-26; Kupfer, Brosig, & Brähler, 2001) were assessed. To close the experiment the participants were informed about the concrete intention of the study.

4.1 Sample

All participants were recruited at *Freie Universität Berlin* via E-Mail. G-Power was calculated and led to a recommended sample size of at least 64 participants. One including criterion is that participants need to be older than 18. Due to the recruitment at a university, the study contains mostly students between the ages of 18 and 27. As psychology students are given “Versuchspersonenstunden” in exchange for their participation, they are overrepresented in this experiment.

For the purpose of collecting general information about the circumstances of all participants, several questions were asked. These address age, gender, education, employment, and nationality. The original sample consisted of 92

participants. Of those 92, one person chose not to specify gender and was therefore not included in further analysis, which lead to a final sample of 91 participants. Of which 80% are female and 20% male. The mean age was 25 years, ranging from 18 to 63 years (*SD* = 8.12). The great majority of people taking part in this study are Germans (81%); the remaining 19% are from Austria, Bulgaria, Italy, Ecuador, Japan, Latvia, Russia, Uzbekistan or China. All participants have finished school at the level of “Matura” (general qualification for university entrance), 14% already have a Bachelor´s degree and 8% a Master´s degree or an equivalent. 92% of them study psychology, the remaining 8% study architecture, German, art history, business economics or process engineering. 47% of the participants are unemployed, 25% are marginally employed, 14% work part time, 3% full time and the remaining 7% reported to do something different.

Additionally Facebook related user habits were assessed. Students are known to be frequent and heavy Facebook users (Lee et al., 2011), which makes this group especially interesting. In this sample the majority of participants has a Facebook account (86%) and answered all related questionnaires. 14% of the participants reported not to have an account. Of those who have an account, 55% have had it for more than five years, 32% since about four years, 6% since three, 4% since two and about 3% for less than a year. Ten percent log in on Facebook more then 10 times per day, 19% do it 6 to 10 time per day, the majority with 40% logs in 2 to 5 time per day, 6% log in on Facebook once a week and 3% less than once a week. Each time participants log in on Facebook, about 76% spend less than 15 minutes on the website, 17% spend 15 to 30 minutes, 4% spend 0,5 to 1 hour, 1% spend 2 to 3 hours and 1% spend more than 5 hours per log in on Facebook. The remaining five items of the FBI intend to measure emotional connectedness to this website and its integration into daily activities as well. Their mean and standard deviations should be at least mentioned (*M* = 15.97, *SD* = 5.12), but these scores are not relevant for further analyses.

4.2 Variables

The outcome variable of this study is prosocial behavior (Y). This will be calculated separately for the self-report questions from the General Social Survey

(GSS; Smith, 2003; Einolf, 2008), which represent continuous variables (an interval variable), and also for the actual behavioral task, which is binary (yes – showed helping behavior or no – didn't show helping behavior). The independent variable is problematic Facebook use (X), it is also an interval variable. The mediator variable is empathy (Z), also interval scaled. Affective and cognitive subscales will additionally be considered separately. The mediation model is presented in Figure 2.

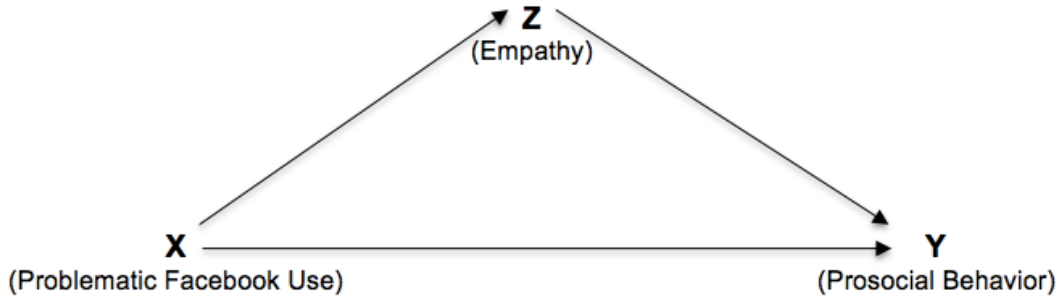

Figure 2. The mediation model

4.3 Measures

4.3.1 Helping behaviors

The questions concerning the different types of helping behaviors are derived from the study of Einolf (2008), who himself used questions from the General Social Survey to assess helping behaviors. The General Social Survey is a survey for demographic data collection, including an altruism module (Smith, 2003). Participants have to rate how often they have shown informal and formal helping behaviors in the past year by choosing one of the following 5 possible answer categories: more than once a week, once a week, once a month, two or three times in the past year, once in the past year, and not at all during the past year. In total this part of the survey involves 13 questions. Questions are for example: "How often have you been volunteering for charity in the past 12 months?" and "How often have you offered your seat on a bus or in a public place to a stranger who was standing?" or "How

often during the past 12 months have you spent time talking with someone who was a bit down or depressed?". Because two of the questions were used as a basis for the behavioral task, they needed to be excluded from the questionnaire. Those questions concerned giving money to charity and allow someone to cut ahead in line. Not to exclude those questions would have captured the risk of making the behavioral tasks obvious to the participants. The points then have to be awarded as stipulated in the manual. After summing the points, a total score can be calculated (Einolf, 2008). All questions concerning helping behaviors will be listed in the appendix.

4.3.2 The Questionnaire for Affective and Cognitive Empathy (QCAE)

The Questionnaire for Affective and Cognitive Empathy (QCAE) was constructed to measure cognitive and affective empathy (Reniers et al., 2011) . The items of the QCAE were derived from the Empathy Quotient (EQ; Baron-Cohen et al., 2003), the Hogan Empathy Scale (HES; Hogan, 1969), the Empathy sub-scale of the Impulsiveness Venturesomeness Emapthy Inventory (IVE; Eysenck & Eysenck, 1978) and the Interpersonal Reactivity Index (IRI; Davis, 1983). The authors picked that many other measurements to construct the QCAE to benefit from the strengths of already well-validated questionnaires. The QCAE includes 31 items, which can be rated on a 4-point Likert-Scale ranging from "strongly agree" to "strongly disagree", each one of them measuring cognitive or affective empathy.

Cognitive empathy refers to the ability to construct a working model of emotional states of others. This contains the subcomponent perspective taking, and refers to putting oneself in someone else´s shoes to be able to see things from their point of view. An example would be "I can easily work out what another person might want to talk about". Likely to be used for future intentions is the second subcomponent, online simulation, and refers to putting oneself in the position of another person by imagining his or her feelings. An example would be "Before criticizing somebody, I try to imagine how I would feel if I was in their place" (Reniers et al., 2011). Affective empathy is defined as the ability to be sensitive to and vicariously experience someone else´s feelings. This contains the subcomponent emotion contagion, which refers to the automatic mirroring of the feelings of another

person. An example item would be “I am happy when I am with a cheerful group and sad when the others are glum”. Proximal responsivity as the second subcomponent refers to the aspect of responsiveness of empathy and is an affective response towards the mood of another person. An example item is “It pains me to see young people in wheelchairs”. This takes place in a close social context whereas peripheral responsivity, which is the last subcomponent, takes place in a detached context. “I usually stay emotionally detached when watching a film” is one item example. It was important to also address a distinction between self and others in those definitions (Reniers et al., 2011). A total empathy score can be calculated by summing the scores of all items. Calculating the sum of the subscale scores for perspective taking and online simulation produces a cognitive empathy score. The sum of the subscales emotion contagion, proximal responsivity, and peripheral responsivity provides a score for affective empathy (Reniers et al., 2011). The questionnaire shows good convergent validity when correlated with the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006). For cognitive empathy a significant correlation with r = .62 and for affective empathy with r = .76 was found and also the required values for construct validity could be met by identifying moderate and strong correlations with several relevant other measurements (Reniers et al., 2011). With the permission of the original test-authors, in this study a German version of the QCAE, provided and translated by Dr.Marc Shipper from the University of Bremen, will be used.

4.3.3 Generalized Problematic Internet Use Scale 2 (GPIUS2) for Facebook

This scale originally assesses cognitive-behavioral aspects of problematic Internet use (in this study Facebook use) and is a 15-item questionnaire with a 5-point Likert-scale ranging from 1 = ”strongly disagree” to 5 = ”strongly agree”. The five sub-scales are Preference for Online Social Interaction (POSI), Mood Regulation (MR), Cognitive Preoccupation (CP), Compulsive Use (CU), and Negative Outcome (NO) (Caplan, 2010). Barke, Nyenhuis, & Kröner-Herwig (2012) translated the items into German and validated it, finding good psychometric properties. They tested the questionnaire in an online (ON; 1,149 participants) and offline sample (OF; 841 participants). Internal consistency for the ON sample showed a Cronbach´s alpha of α = .86 and for the OF sample α = .91. The retest reliability was *rtt* = .85. The

confirmatory factor analysis supported the postulated factor structure; the model fit was good. Also the convergent validity showed good results. Correlations with the Internet Addiction Test (IAT; Barke, Nyenhuis, & Kroner-Herwig, 2012) were *r* = .78 for OF and *r* = .82 for ON (Barke et al., 2012). To summarize the German version could reach well to satisfactory psychometric properties.

For the purpose of the investigation of problematic Facebook usage, the word Internet was replaced with the word Facebook by Lee et al. (2011). It was then tested on a sample of 200 US Facebook users. Their scale showed good psychometric properties. Convergent validity, which indicated how the items of scales which are related in theory, are also related in reality, was measured with composite reliability (CR) and average variance extracted (AVE). All CRs were ranging from .91 to .92, which is above the recommended critical value of .70 and therefore appropriate. All AVEs were ranging from .69 to .79, which is above the recommended critical value of .50 and therefore also appropriate. So all values fulfilled the recommended levels. Discriminant validity, which refers to the degree to which a measurement is not reflected by other variables, was measured using the square root of AVE. The results showed that the square root is greater than the correlations between them and all other constructs. Therefore adequate discriminant validity for all measures can be assumed. Also the structural model fit requirements have been met. Every structural path was statistically significant in the research model and therefore the hypothesis concerning the adaption of the GPIUS2 model for the problematic usage of Facebook are fulfilled. Exogenous variables could explain 56% of the variance of negative outcome. Deficient self-regulation has an impact on negative outcome. POSI and mood regulation could in turn explain 35% of the variance of deficient self-regulation. POSI could also explain mood regulation. Item examples for POSI are “I am more confident socializing on Facebook than I am offline” or “I am more comfortable with Facebook than people”. Mood Regulation was for example assessed with “I have used Facebook to talk with others when I was feeling isolated” or “I use Facebook to make myself feel better when I´m down”. Deficient self-regulation items would be “I have attempted to spend less time on Facebook but have not been able to” or “I am preoccupied with Facebook if I cannot log on for some time”. Items assessing negative outcome would be for example “I have missed classes or work because of visiting Facebook” or “I have missed social engagements because of visiting Facebook”. A total score of problematic Facebook usage can be calculated by

summing all item scores. Ryan et al. (2014) are of the opinion that the modified version of GPIUS2 is probably the best option for the assessment of Facebook addiction. But it also has limitations because there is no cut-off provided and also the duration since when problems related with Facebook persist is not considered. There are some more limitations to the measurement, like the fact that the sample on which it was tested is relatively small and that there was no test-retest reliability reported (Lee et al., 2011).

4.3.4 Facebook Intensity Scale (FBI)

This scale was created to measure Facebook usage (Ellison et al., 2007). Facebook Intensity was thereby operationally defined, without providing a conceptual definition, by the number of Facebook friends, the amount of time spent on Facebook on a typical day, and several Likert-scale questions to assess emotional connection to this social networking site as well as the extent of integration into daily life. Item examples of this measurement are “Facebook has become part of my daily routine”, “Facebook is part of my everyday activity”, or “I feel out of touch when I haven’t logged onto Facebook for a while”. They can be rated on a Likert-scale with response categories ranging from 1 = “strongly disagree” to 5 = “strongly agree”. Cronbach´s alpha is α = .83, which can be seen as appropriate (Ellison et al., 2007). The authors provided to use the scale for free. For the purpose of this study the items were translated into German by Anna Kollermann, then re-translated into English by Anna Cholewa. This procedure resulted in a German version of the Facebook Intensity Scale. This scale is added to the current study to get insights into users behavior; it will simply be used for descriptive statistical purposes.

4.3.5 Social Desirability Scale-17 (SDS-17)

An adapted German version of the Social Desirability Scale-17 (SDS-17; Stöber, 2001) was used to control tendencies towards social desirability among all participants. It refers to a tendency to respond to questions in a way that is assumed to be socially desirable. The scale consists of 17 items that can be either rated with “true” or “false”. The questionnaire showed satisfactory reliability and convergent

validity. The internal consistency ranged from .72 to .75, the test-retest reliability was good with .82. The external consistency ranged from .67 to .74, which is a satisfactory result. After the points are supplied following the rules in the manual, the points are summed and a total score can be calculated. Item examples are “I always admit my mistakes openly and face the potential negative consequences”, “In conversations I always listen attentively and let others finish their sentences” or “There has been at least one occasion when I failed to return an item I borrowed”.

4.3.6 Toronto-Alexithymia-Scale 26 (TAS-26)

The Toronto-Alexithymia-Scale 26 (TAS-26; Kupfer et al., 2001) was added to control alexithymia among all participants. Alexithymia refers to the inability to perceive feelings properly, to express them verbally and therefore to process them functionally on a mental level. It is nowadays a commonly used scale to measure this construct. For the purpose of this study the German version of the TAS-26 will be used. The questionnaire consists of 26 items that can be rated on a 5-point-Likert scale ranging from 1 = “strongly disagree” to 5 = “strongly agree”. The measurement originally consists of four scales, but the scale for reduced daydreaming will not be calculated, because the authors of the German version argue that this scale is incompatible with the concept of alexithymia. Of the remaining three, the first refers to difficulties in identifying feelings, the second refers to difficulties describing feelings, and the third is labeled as an external oriented style of thinking. Internal consistency and reliability were satisfactory for the second scale with Cronbach´s alpha α = .69 and Split-Half-Reliablity of .70, satisfactory for the third scale with Cronbach´s alpha α = .67 and Split-Half-Reliability of .65, and good for the first scale with Cronbach´s alpha α = .84 and Split-Half-Reliablity of .84. Construct validity was also good when correlated with related constructs. A total score can be calculated by summing the scores of each item. The questionnaire is standardized and offers comparable norm values of the German population. Item examples are “I often don´t know why I am angry.”, “Being in touch with emotions is essential.”, “When I´m upset, I don´t know if I´m sad, frightened, or angry.” and “I am able to describe my feelings easily.” (Kupfer et al., 2001).

4.3.7 Procedure Behavioral Task

Participants were recruited via E-Mail at *Freie Universität Berlin*. The information given in the recruitment included the expected duration and location of the experiment, as well as the requirements that participants need to meet to take part in the experiment. The participants were not informed about the actual aim of the study and the behavioral tasks included in the experiment. Instead the study was described as part of a master thesis in the field of clinical psychology with a focus on empathy. Once the experiment was completed, the participants were informed about the actual intention of the study and the behavioral tasks. As an exchange for their participation they were offered 1,5 “Versuchspersonenstunden”, as well as the chance to win 3x20 Euro Amazon Vouchers. To run the experiment a room had to be booked at university and for each participant one hour time to finish the experiment was provided.

4.3.7.1 Behavioral Task

When a participant entered the room, he/she was informed about what was going to happen next. They were told that the survey consisted of two parts. First he/she had to fill out several questionnaires, which would approximately take 30 to 60 minutes. After that, a break of five minutes was planned, which was followed by the second part. In this part the participants were told to fill out several more questionnaires for approximately 15 to 30 minutes. The break is actually the part, where the two behavioral experiments were taking place. For reasons of randomization the sequence of the two tasks were rotated, also the sequence of the investigators is randomized. This results in four different scenarios: Investigator 1 Formal helping behavior task/Informal helping behavior task; Informal helping behavior task/Formal helping behavior task and Investigator 2 Formal helping behavior task/Informal helping behavior task; Informal helping behavior task/Formal helping behavior task. When it was one investigators turn to conduct the experiment, the other person performed as the stranger and vice versa. After participating in the two behavioral tasks the participant was informed about the study aim and the content of the experiment. The exact procedure of the behavioral tasks will be described in the following sections.

4.3.7.2 The Formal Helping Behavior Task

The formal task refers to formal prosocial behavior, where the receiving person is not present and the behavior is planned rather than spontaneous (Einolf, 2008). The invitation email contained information about the possibility to make a donation~~.~~. In the invitation it said: “Due to a request for support for humanitarian aid of the care center for incoming refugees in Berlin, you will have the possibility to donate money during the experiment if you want to.” The investigator then gave the participant an envelope and an information sheet, which said again what the donation would be for. The investigator explained that the donation was totally voluntary and optional. To avoid effects of social desirability and pressure, the investigator left the room for about one minute to give the participant private sphere. When the investigator entered the room again, the envelope was laid aside. After the participant was informed about the experiment, he/she got the opportunity to take the money back. If not, the envelope stayed with the investigators until the study was finished and was donated to one care center for refugees in Berlin. In the end the total amount of 167,55 Euros was donated.

4.3.7.3 The Informal Helping Behavior Task

The informal task aims to asses informal helping behavior, which is spontaneous, sudden, unexpected as well as on-time and the receiving person is present (Einolf, 2008). The stranger was informed by the investigator by text message when to enter the room. The stranger then knocked on the door, stepped in, and asked if it was okay to take part first, and cut ahead in line due to a very important presentation, where more preparation time would be needed. The investigator answered that it is up to the participant to decide. All participants had planned 1,5 hours for the experiment, which would be always enough time left to let the stranger cut ahead in line, because the questionnaires only take a maximum of 45 minutes to complete. If the participant said no, the stranger left. If the participant said yes, the investigator pretended not to be able to stop the survey without loosing

all the data and offered the stranger a new appointment, in which case the stranger also left.

4.3.8 Confounding Variables

Possible confounding variables could be gender, age**,** time of the day, education, and the setting in which the experiment took place. The lines spoken by the investigator and the stranger were constantly the same, there even was a script for the whole procedure, and the setting in the room was standardized. If a participant stated that he/she was aware of the two behavioral tasks being part of the experiment, this was considered as a confounding variable. Additionally to these variables that need to be considered particularly in the context of this experiment, questionnaires for social desirability and alexithymia had to be completed by all participants.

4.3.9 Socioeconomic data

Socioeconomic data were assessed by a questionnaire including questions concerning profession, course of study, highest completed level of education, age, sex, place of residence, and relationship status.

5 Results

For all statistical analysis the program SPSS 23.0 was used. Whenever a scale of a questionnaire showed missing values, these were replaced with the mean of the particular subscale. All hypotheses were tested two-sided. Whenever the requirements were met and it was possible, parametric methods were used instead of non-parametric. With reference to the behavioral task it can be summarized that about 48% showed formal prosocial behavior and about 56% showed informal

prosocial behavior in the behavioral task. Of those, about 26% showed both prosocial behaviors, 52% at least one of them and 22% did not show any prosocial behavior. In Table 1 means and standard deviations of all relevant variables are presented for descriptive statistical purposes.

Table 1

Means and standard deviations

	M	*SD*
QCAE	98.92	10.30
COG	62.14	6.63
AFF	36.77	5.54
GPIUS2	24.46	8.48
GSS	171.45	111.82
SDS17	9.22	4.13
TAS26	41.31	7.46

Note. QCAE – Questionnaire for Affective and Cognitive Empathy General Empathy Score; COG – Subscale Cognitive Empathy Score; AFF – Subscale Affective Empathy Score; GPIUS2 – Generalized Problematic Internet Use Scale for Facebook; GSS – General Social Survey; SDS17 – Social Desireablity Scale 17; TAS26 – Toronto Alexithymia Scale 26

Correlational analyses were calculated and will be presented in the following section. The results of the partial correlational analysis are presented in Table 2, where gender, education, age and social desirability are regressed out.

Table 2

Correlation coefficients (r) of the partial correlation between all relevant variables

	QCAE	COG	AFF	GPIUS2	GSS	TAS26	TASKG	TASKF	TASKIF
QCAE	1.00								
COG	.88***	1.00							
AFF	.78***	.39***	1.00						
GPIUS2	.14	.09	.15	1.00					
GSS	.23*	.30*	.03	.20	1.00				
TAS26	-.11	-.20	.04	.29*	.23	1.00			
TASK	-.01	-.01	-.01	.01	-.10	.06	1.00		
TASKF	-.05	-.03	-.06	.08	-.06	-.03	.72***	1.00	
TASKIF	.03	.02	.04	-.07	-.09	.11	.73***	.05	1.00

Note. Age, gender, education and social desirability are regressed out; *p**: significant relationship with $p \leq .05$; *p*****: significant relationship with $p \leq .01$; *p**** significant relationship with $p \leq .001$. QCAE – Questionnaire for Affective and Cognitive Empathy General Empathy Score; COG – Subscale Cognitive Empathy Score; AFF – Subscale Affective Empathy Score; GPIUS2 FB – Generalized Problematic Internet Use Scale for Facebook; GSS – General Social Survey; TAS26 – Toronto Alexithymia Scale 26; TASK – Behavioral Task Total; TASKF – Behavioral Task Formal; TASKIF – Behavioral Task Informal.

To highlight the significant results again with their exact p-values, they will be listed below. There is a significant correlation between cognitive empathy and the general empathy score $r = .88$ ($p = .00$) and between affective empathy and the general empathy score $r = .78$ ($p = .00$). There is also a significant association found between affective empathy and cognitive empathy $r = .39$ ($p = .00$). The score of the General Social Survey, which represents formal and informal helping behaviors reported by the participants, correlates with cognitive empathy $r = .29$ ($p = .01$) and with the general empathy score $r = .23$ ($p = .05$). Between alexithymia and problematic Facebook usage a significant relationship is found $r = .29$ ($p = .01$) as well. There are also significant results found between the general score of the

helping behavior task and the task for formal helping behavioral $r = .72$ ($p = .00$) and the task for informal helping behavior $r = .73$ ($p = .00$).

6 Discussion

6.1 Summary

The original purpose of this study was to test the hypotheses, if the relationship between problematic Facebook usage and prosocial behavior was mediated by empathy. The results were not significant and therefore only correlational analyses could be computed. Control variables that were regressed out are age, gender, education and social desirability. It could be shown that the total score of the QCAE is associated to both affective and cognitive empathy, those two are also positively correlated with each other. The total score of the QCAE and cognitive empathy subscale show a positive correlation with the total score of the GSS, but GSS does not correlate significantly with affective empathy. The TAS26, which assesses alexithymia, is positively correlated with the total score of the GPIUS2 for Facebook, but the total score of the GPIUS2 for Facebook is not associated with any other variable. The two behavioral tasks correlate significantly with the general task score, but not with the GSS or any other variables. The possible meaning of the results will be related to literature and discussed with a research-based background.

6.2 Interpretation of the Results

The positive relationship between the total score of the QCAE and the sub-scale for cognitive empathy and between the total score of the QCAE and the sub-scale for affective empathy is not surprising, when considering that affective and cognitive empathy are subscales of the same measurement and belong to the same factor. They are meant to correlate high with each other and also with the general empathy factor that the QCAE provides. The instrument is well validated and reliable.

In the test construction the QCAE total score and the cognitive empathy score correlated with $r = .87$ ($p < .01$) (Reniers et al., 2011), which is very similar to the findings of the current study with $r = .88$ ($p < .01$). The QCAE total score correlated with affective empathy at a level of $r = .72$ ($p < .01$) in the test construction and it was also very similar in this study with $r = .78$ ($p < 0.1$). A significant association could also be found between affective empathy and cognitive empathy. The correlation between the subscales is actually higher $r = .42$ ($p < .01$) than what Reniers et al. (2011) investigated in their construct validation of the measurement, where they could only identify a moderate correlation with $r = .31$ ($p < .01$). In the study of the authors they mention that a moderate association between the constructs represents that affective and cognitive empathy are related, but that they are at the same time referring to different concepts, which confirms the theoretically hypothesized assumptions. The fact that the constructs seem to correlate higher in the current study could be interpreted in a way, that in this particular sample the constructs of affective and cognitive empathy could not measure as distinctively two different things, as they could do in the sample of the original validation study. The sample of Reniers et al. (2011) can probably represent the general population better with being considerably bigger, but participants were also recruited from a university and an employee sample. The test authors already pointed out that a replication study of the construct validation of the QCAE would be desirable. Another limitation of their study is that it was online based and therefore a self-selection bias could have occurred. It could be that people were more likely to join the study if they were interested in social sciences in the first place, especially in empathy. What Reniers et al. (2011) also mention in their discussion section, is the fact that empathy is a construct that is socially desirable and therefore could specifically cause a socially favorable tendency in answering the questionnaire. In line with that, Hofmann, Gawronski, Gschwendner, Le, and Schmitt (2005) also assume for some topics to have a stronger risk of evoking social pressure. The current study solved that issue by controlling for social desirability, which can be seen as a great advantage. Several significant results got insignificant after controlling for that confounding variable.

The GSS correlates with the QCAE total score and with cognitive empathy but not with affective empathy. The fact that no association could be found between prosocial behaviors assessed with the questions derived from the GSS and with affective empathy is surprising. As Wilhelm and Bekkers (2010) pointed out, both

constructs are related to empathy and support the existence of an empathy-helping relationship. But they actually got ambiguous results, when considering that principle of care, which is similar to the concept of cognitive empathy, had stronger correlations with the questions from the GSS concerning prosocial behaviors, than did empathic concern, which refers to affective empathy. Even more, when partially regressed out, principle of care decreased the relationship between empathic concern and prosocial behavior significantly. A mentionable downside of their study was that it was only based on self-reports, which is especially in such a sensitive issue a disadvantage. Confounding variables like social desirability could become especially strong in such socially favorable subjects like helping behavior and empathy. Anyway, there are also very contrary results to that, for example reported by Edele, Dziobek, and Keller (2013). In their investigation, affective empathy seems to play a crucial role in explaining altruistic sharing behavior, but cognitive empathy doesn´t. That is exactly the opposite of what the current study found. Einolf (2008) for example already suggested the idea of a reevaluation of the relationship between an individual's predisposition to empathy and several helping behaviors, which seems reasonable considering the inconsistent results. Although empathy very often seems to be related to prosocial behavior, this association does not necessarily occur. Empathy does not have to cause a helpful response (Cuff, Brown, Taylor, & Howat, 2014). It is additionally required to take into consideration how empathy is associated with other personality traits, values, and moral dispositions that could cause certain helping behaviors (Einolf, 2008). Usually it is difficult to determine, if a prosocial act is motivated by feelings of empathy, sympathy, personal distress, or some other factor. In the review of Eisenberg and Miller (1987) they could show that the strength of a relationship between empathy and prosocial behavior seems to vary a lot depending on the method used to measure empathy. Hence, such an association seems for example especially likely and strong when empathy is measured using self-report questionnaires. They further point out that the object of someone´s empathy when measuring empathy and the object that is actually receiving an empathic response in an actual situation is not the same in most studies, which makes it not really comparable. Just because someone experiences an empathic reaction in one situation towards someone doesn´t inevitably mean he/she would do so in a different situation towards someone else (Eisenberg & Miller, 1987). When summarized, it can be said, that despite all inconsistencies and the great variety of results, a positive

relationship can be assumed. It seems as if especially cognitive empathy could play an important role in regard to some particular prosocial behaviors. Taken together, an association between empathy and prosocial behavior could only partially be confirmed, which is unsurprisingly when one looks at prior studies and their inconsistent results.

The GSS does not correlate significantly with any other variables. Hence there is no association found with Facebook usage, which is not by all means in line with former study results, because negative and positive associations were reported. Putman (2001) reported a negative association between Internet and social capital, but prior findings are paradoxical. As postulated in the introduction it could replace face- to-face interactions, but Hampton and Wellman (2003) have pointed out that computer mediated communication has positive effects on interactions in a community, involvement in community activities, and on social capital. Ellison et al. (2007) found a significant and positive relationship between frequent and heavy Facebook usage and measures of social capital among college students. That's also why Ellison et al. (2007) say that online interactions don't seem so keep people away from their offline world, instead it seems it even can be used to strengthen those relationships. The Internet hence seems to be linked to increases and decreases in social capital. The reason for the insignificant results in this current study could be due to the fact that social capital and prosocial behavior are not related close enough and can therefore not be compared. But maybe an interaction between Facebook usage and prosocial behavior is ambiguous or just not there.

It is furthermore worth mentioning, that there was no relationship found between the self-report in the GSS and the actual behavioral tasks. It is not comprehensible on the first glance to assume a gap between actual and reported helping behaviors (Wilhelm & Bekkers, 2010). It could be expected that there is a correlation between implicit attitudes and explicit measures because they have their origin in the same socialization experience. But it seems those two involve different processes and therefore the correlation was insignificant. It is especially likely to find differences when it comes to socially sensitive topics, of which prosocial behavior can be seen as one of them. A self-report involves at least to some extend explicit and conscious evaluation, whereas when a behavior is shown spontaneously, like this was the case in at least one of the two behavioral tasks, it is likely that implicit

attitudes influence the action. There might not be the opportunity to reflect sufficient or it could be that the participant is just not motivated enough to deliberate. Although the authors point out that there is evidence for implicit measures to have predictive validity (Dovidio, Kawakami, & Beach, 2008). To summarize, researchers found evidence that very often implicit and explicit measures show no correlations with each other. Hofmann et al. (2005) point out a couple of reasons that could be responsible for that. Causes that are considered relevant are mentioned below. First, it could be that an explicit self-report is under the influence of social desirability, whereas an implicit measurement is by trend not influenced by any motivational factors. It is furthermore mentioned, that especially when it comes to socially sensitive topics, this effect could appear stronger (Hofmann et al., 2005). That is likely to be especially true for socially favorable topics like empathy or helping behavior. As a second possible cause it is mentioned that it could emerge that method-related factors cause low or even no correlations between the implicit and explicit measures. As an example they point out that the reason for low correlations could become present because the self-report questionnaire is only indirectly related to what is assessed by the implicit measure (Hofmann et al., 2005). In this experiment the two behavioral tasks are acts that were originally questioned in the GSS as well. Because questions concerning exactly the content of the behavioral task would have been obvious indicators of the behavioral task itself, they were left out. Maybe that makes the two measures not really comparable. Even though both address the subject of prosocial behavior, letting someone cut ahead in line and donating money must not be definitely comparable to questions about blood donations, lending items or offering someone a seat in public transport vehicles. As a slightly radical thought, but possible, Hofmann et al. (2005) point out that it could be that the constructs that are actually assessed by the two measurements are independent. Although it is not likely to assume that the two tasks and the questionnaire are absolutely unrelated. It is rather reasonable to assume that people like to present themselves in a socially favorable way.

To continue with discussing the remaining results, the empathy scores didn´t correlate significantly with the Facebook measurement GPIUS2. The results don´t seem to fit prior findings on impairments of the components of empathy and addiction. As mentioned in the theory part of this study Ferrari et al. (2014) investigated both components among a small group of alcohol dependent patients.

They found that patients scored significantly lower than controls only in emotional empathy but not in cognitive empathy and also not on social skills scores. Preller et al. (2014) studied the variables mental perspective taking as well as emotional and cognitive empathy in cocaine users and could show that emotional empathy was reduced compared to the control group while cognitive empathy stayed unchanged. On the contrary, the current study could not find similar results, neither with affective nor with cognitive empathy significant correlations could be found. It is very questionable though how far one can compare alcohol or cocaine addiction to Facebook addiction. Even if substance related addiction could be compared to behavioral addictions, that doesn´t mean this has to be the case in every aspect. No study could be found addressing the relationship between empathy and substance unrelated addictions though. Above all it is questionable how good the measurement GPIUS2 for Facebook is, maybe it doesn't measure Facebook addiction at all but only heavy usage, which isn´t necessarily maladaptive. As Davis (2001) introduced his model he didn´t provide a cutoff in the measurement, because he was of the opinion that individuals are on a continuum between healthiness and pathology. Neither Caplan (2010) nor Lee et al. (2011) questioned this assumption or adapted it. It would be of advantage though if such a cutoff would be provided. Other Facebook addiction measurements do, like for example the Bergen Facebook Addiction Scale (BFAS) of Andreassen, Torsheim, Brunborg, and Pallesen (2012). If the theoretical background speaks of pathology this should also be measured in that account. A clear cutoff would provide a clear understanding about if someone suffers from a particular pathology or not. Additionally to that, Facebook is so easily integrated into daily life, it costs nothing, one can use it mobile on the smartphone. So it might only interfere with daily life a little. Besides results that investigated addiction and empathy, the current study results also don´t seem to fit former investigations on empathy and internet-related subjects. It was mentioned already in the introduction, but just to point it out again, that Konrath et al. (2011) for example could find that the scores in empathic concern (EC) and perspective taking (PT) showed a decrease, especially around the year 2000, which is known as the time, where social media arose and usage increased (Konrath et al., 2011). Chan (2014) was able to show that empathic social skills tend to be reduced when Facebook usage is high and Wang et al. (2014) found out, that Internet addicted urban left-behind children in China showed impaired empathic responses towards the pain of others. But none of

these results could be supported by the current study. Actually the GPIUS2 for problematic Facebook usage only showed significant correlations with one other variable.

Between the TAS26 and GPIUS2 for problematic Facebook usage a significant relationship is found $r = .29$ ($p = .01$). Sifneos (1973) operationalized alexithymia as a failure in identifying and describing ones own feelings, as a tendency to have fewer fantasies and dreams, and a more externally oriented and concrete cognitive style. It refers to impairments in emotional and cognitive processes and adjustments. A positive association between alexithymia and problematic Facebook usage is not surprising and in line with previous findings addressing this topic. Craparo (2011) explored the association between alexithymia and Internet-addiction. They have shown that Internet addicted individuals scored higher on the alexithymia scale than the control group and they were also more susceptible to alexithymia. Even though Internet-addiction and problematic Facebook use aren´t referring to the exact same construct, it is likely that they are related. De Berardis et al. (2009) found out that people who score above the cutoff score of alexithymia seem to have more dissociative symptoms, less self-esteem, and also score higher on obsessive-compulsive symptoms. The could also show that they are at higher risk for Internet addiction if compared to people without alexithymia and are also more often actually affected by Internet addiction. As we know Alexithymia is a disorder where the identification, understanding and description of emotions is impaired (Kupfer, Brosig, & Brähler, 2001). As mentioned before it could be shown in previous studies, that Alexithymia seems to be higher in Internet-addicted individuals (De Berardis et al., 2009; Craparo, 2011). Since that is the case it seems reasonable to conclude that they would show damaged empathic capacities. It is questionable if one can reason from Internet-addiction to problematic Facebook usage, although those are very related constructs. So the results of the current study are in this regard in line with what prior research investigated. Although no study could be found that is particularly focusing on social networking site addiction and its association with alexithymia. The results of the current study can hence be seen as a first step of exploring this relationship. Further investigations are necessary for a better and deeper understanding of the interplay of those two variables.

As a last significant result it should be mentioned that there are significant results found between TASKG and TASKF $r = .72$ ($p = .00$) and TASKIF $r = .73$ ($p = .00$). This is not surprising due to the fact that both tasks measure some sort of prosocial behavior. The two tasks on the other hand do not show a significant association with one another, which makes a differentiated view reasonable. So the informal helping behaviors and formal helping behaviors of this behavioral task are not associated with each other. Therefore it is likely to assume that they don´t measure the same construct but instead two different things. High inter-correlations would suggest that both refer to the same type of helping behavior.

6.3 Future Implementations, Limitations and Criticism

Besides the interpretation and discussion of the significant results of this thesis, other aspects will be reviewed. Some downsides are associated with the sample of the current study. A disadvantage of this investigation is that only Facebook members were assessed and not compared to non-Facebook users. Due to the fact that the proportion between people who have an account and those who haven´t is very unbalanced among the participants of this study, those two groups couldn´t be compared and contrasted with one another, but only differences within the Facebook group were investigated. Also there is not much diversity in ethnicity among all participants, the majority was German. This doesn´t allow us drawing conclusions about a broader population. The fact that most participants are students, most of them psychology students, around the age of 25, they show low variance in education, and the fact that they are mainly female, also limits the possibility of transferring conclusions upon the general population. Psychological research undertaken by psychology students is very often limited in a way that access to participants is restricted to other psychology students. In this study psychology students were rewarded with “Versuchspersonenstunden” for participation, which obviously constitutes a bias. Just as an example to underline this statement, about 73% of articles reported in the Journal of Abnormal and Social Psychology and about 86% of articles reported in the Journal of Experimental Psychology in the early sixties used samples consisting of college students that were enrolled in psychology (Smart, 1966). Schultz (1969) suggests that using a sample consisting of people from the

field of psychology is not adequate. They are to him not selected randomly, not assigned randomly, they are not representative for the general population, they might not be naive, and could be suspicious or distrustful towards social science research and researchers. So it is reasonable to assume that due to frequent former experiences in taking part in psychological research and experiments there could occur a learning effect and/or at least some sort of bias. People could get suspicious of the actual study aim for example. Especially at *Freie Universität Berlin* that problem could occur strongly because all psychology students there have to collect 30 “Versuchspersonenstunden”, which provides them with a lot of experience. By the time procedures or questionnaires might get more and more transparent to them. It was tried to reduce that bias in the case of the behavioral tasks by asking participants if they were aware of the task. None of them answered with yes, but this doesn´t reduce the risk completely.

Also worth mentioning is that multiple alternative methodologies, especially for assessing Facebook usage, could have been applied. That could have been for example some sort of online assessment via Facebook, profile capture and analysis or any other tool that´s especially provided due to a medium that captures so many different possibilities (Wilson et al., 2012). Even within the social networking site Facebook, the variety of possibilities how and what to use is extensive. It ranges from posting pictures, liking them, video calls, chats, gaming, joining groups, and many more. Concerning the Facebook research there are in general many deficits among conceptualizations, operationalization and measurements that could cause those insignificant results. As for example Ross et al. (2009) criticized that the number of Facebook users is constantly growing but investigations and research is not increasing proportionally. The fact that the current study used self-report questionnaires was in this particular case not very innovative. Also a prosocial task could have been developed that suits the novelty of the medium Internet better. Future studies should consider using Facebook as their research platform, invent online helping tasks, and investigate actual users’ behavior.

Experimental interventions as a methodological tool would have allowed it and would have made it easier to draw causal claims. A pre and post-test design for example would have provided the possibility of exposing individuals to an empathy evoking stimulus and then assess prosocial behavior. Or the experiment could have

involved exposing the individual to Facebook and then assess empathy. Concerning the original hypothesis it should be mentioned that usually in a mediation model one should manipulate variable X and measure the changes in variables Y, and Z. Another aspect is that it is not clear, is if empathy can be seen as a trait that's mostly stable, or if it refers to a state variable that is specific for the particular situation. Although it is likely to assume that empathy is a construct that is flexible rather than an all-or-none occurrence (Singer & Lamm, 2009). Also a longitudinal design would have captured the possibility of making more statements. Measuring empathy on a one-time basis is not ideal, but most researcher do that (Eisenberg et al., 1987). Additionally not only empathy related research, but also Facebook as a research field suffers from definitional issues (Konrath et al., 2011). This doesn´t allow the research community to have a standardized examination of the construct, it makes it difficult to compare different studies, and captures the risk of misunderstandings. Future studies should operationalize and standardize these concepts better.

As this is the case for many other studies, the current examination suffers from limitations of self-report questionnaires. The behavioral task can be seen as an advantage though to help overcoming retrospective, self-report measures. Despite this approach, there was no significant association revealed. The relatively small sample size could be one main reason for those insignificant results. The behavioral task itself captures several risks and biases. As a particular confounding variable in the behavioral task an in-group and out-group effect could have become present. People tend to favor others that seem similar, which represents the in-group, over others that are perceived as different, which represent the out-group. Such an effect can occur as involuntary automatic responses towards others, like for example in empathy for pain (Campbell & De Waal, 2011). To all participants it was obvious that in the informal task the help-receiving person was also a student (in-group) and in the formal behavioral task the help-receiving person was a refugee (out-group). That is where an additional bias becomes relevant, the implicit racial bias. Thereby individuals might be under the influence of automatically triggered unconscious racial prejudice. Even if this is rejected consciously, it still triggers a bias in behavior (Amodio, 2009). As reported, there were no remarkable differences in the behavior participants showed in the two tasks. But this bias could have affected helping tendencies.

Future studies should also consider the costs that would come with helping behavior. It could be that the amount of time a participant thought he/she would have had to wait (30-45min), if he/she had agreed to let the stranger cut ahead in line, was probably too long. High costs could have led highly empathic individuals towards a non-prosocial behavior and probably caused the insignificant results (Paciello, Fida, Cerniglia, Tramontano, & Cole, 2013). It also wasn't surveyed in particular, if the participant realized that the stranger was really in need of help in the informal task and if the participant realized that he/she had the capability to help and reduce the stranger's stress. Various other confounding variables could influence the results. In social psychology an unwanted third variable or confounding variable is very often self-selection. So it is sometimes hard to conclude if an outcome was influenced by a treatment, or by individual differences that made someone decide to participate in the experiment in the first place. Also, even if a study takes place in a naturalistic field, that doesn´t necessarily mean it causes good external validity. Every context has got limited generalizability (Reis & Judd, 2000). Another problem with within-subject-designs is that temporal stability is assumed. That means, it is assumed, that the response a participant is giving, is time-independent. Another confounding variable could be causal transience, which refers to the assumption that an effect of a treatment or measurement doesn´t persists over time. So for example, if someone takes part in one behavioral task and then a second one, it is assumed that there is no influence from the first upon the second (Reis & Judd, 2000). It is questionable though, if the participant physically and psychologically gets back to a baseline level.

The process of completing questionnaires in general also captures some possible confounding variables. As one model of many Tourangeau, Rips, and Rasinski (2000) agreed on at least four components of a response process when participating in a study or survey. The first one addresses comprehension, which refers to a process of attending to the question and the instructions, relate a meaning to them, and identifying the given key information (Tourangeau et al., 2000). It could happen that a participant doesn´t pay attention, isn´t bothered to read the instructions, misses part of the question, or maybe an unfamiliar word comes up. Retrieval is mentioned as a second process that needs to be discussed. Especially retrieval for factual questions captures the risk of a bias. Participants have to recall facts from their long-term memory and that might not be accurate (Tourangeau et al., 2000). When asked how often in the last 12 month an event occurred, they could

maybe only recall a regular pattern and then use that as a base to estimate for the full 12 months. But also retrieval, and judgment for attitude questions, not only factual questions, captures a risk for bias. Researchers often assume that if someone has an attitude towards something, he/she also has a preexisting judgment about it. When the participant is then asked about those attitudes in the questionnaire, those preexisting judgments become active to answer the question. Whereas in fact, some people might have an attitude that is already well articulated, and others might not have formed an opinion on a specific subject. As a last component of the process that is undertaken to fill out questionnaires, the reporting and response selection was mentioned (Tourangeau et al., 2000). This refers to processes like mapping an answer to a scale or response option and then edit the response for consistency, acceptably, or any other relevant or important criterion. Someone could have a good idea of an answer in his/her head, but just doesn´t know how to report it. They might wonder if they should pick strongly agree or agree, or seldom, or often. People might additionally even differ in their strategies for selecting an answer. Some might work hard to find the best possible answer and some would just pick the first one that feels acceptable.

Taking together the results of this study, a lot remains unclear. Problematic Facebook usage only seems to be related to alexithymia. Maybe a bigger sample size would lead to more significant results but for now, it can be summarized that there seems to be no association between empathy, prosocial behavior and problematic Facebook usage. A relationship between prosocial behavior and empathy could be supported one more time and also a gap between actual behavior and self-report measurements. The research field around Internet-related subjects is still in its early stages, its relevance is not increasing proportionally to that. As a first step, future studies should develop valid and reliable measurements, or improve existing ones. The field is wide, it captures many different aspects that would be worth studying, and technology and interventions are still developing fast. Facebook and other social networking sites are part of our every day life and this is an unstoppable trend.

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10 Appendix A

Abstract

The purpose of this study was to investigate the relationship between problematic Facebook usage, empathy and prosocial behavior. Problematic Facebook usage refers to a concept of maladaptive cognitive and behavioral attitudes towards the most popular social networking site, Facebook. Negative outcomes, like interpersonal problems in daily life or reduced empathic skills, are seen as the consequence. Problematic Facebook usage was shown to be negatively related to social capital, addiction is proven to be negatively related to empathy, and empathy plays an essential role in causing prosocial behaviors. On this basis the research question came up, if empathy mediates the negative relationship between problematic Facebook usage and prosocial behavior. Several questionnaires had to be completed by all 91 participants. Additionally two behavioral tasks were designed to assess actual prosocial behavior. The results concerning the mediation model were insignificant; the hypothesis could not be confirmed. As an alternative, partial correlations were computed. Problematic Facebook usage only correlated significantly with alexithymia (r = .29; p = .01) but no other variable. Whereas a positive relationship between emapthy and prosocial behavior has been confirmed (r = .23; p = .05), no significant correlation between the behavioral task and the questionnaire for prosocial behavior was found. The results concerning problematic Facebook usage remain unclear and further investigations are necessary. Most importantly the concept of problematic Facebook usage needs to be operationalized and standardized. Future implementations include using Facebook as a research platform; developing online tasks for prosocial behaviors, and investigating actual users´ behavior.

Keywords: problematic Facebook usage, empathy, prosocial behavior, helping behavior, Internet addiction

Zusammenfassung

Das Ziel der vorliegenden Studie war es die Beziehung zwischen problematischer Facebook Nutzung, Empathie und prosozialem Verhalten zu untersuchen. Bei problematischer Facebook Nutzung handelt es sich um maladaptive kognitive und behaviorale Einstellungen gegenüber Facebook, die negative Konsequenzen, wie interpersonelle Probleme im Alltag oder verringerte empathische Fähigkeiten, zur Folge haben können. Facebook ist die beliebteste soziale Netzwerkseite weltweit. Die bereits bestehende Literatur zeigte einen negativen Zusammenhang zwischen problematischer Facebook Nutzung und sozialem Kapital, zwischen Suchtverhalten und Empathie, und einen positiven Zusammenhang zwischen Empathie und prosozialem Verhalten. Basierend auf diesen Ergebnissen wurde die Hypothese generiert, dass Empathie die negative Beziehung zwischen problematischer Facebook Nutzung und prosozialem Verhalten beeinflusst. Neben der Beantwortung von Fragebögen nahmen die 91 Versuchspersonen an zwei Verhaltensexperimenten teil, welche tatsächliches prosoziales Verhalten erfassen. Die Ergebnisse des Mediationsmodells erwiesen sich als nicht signifikant, weshalb als Alternative partielle Korrelationen berechnet wurden. Problematische Facebook Nutzung korreliert positiv mit Alexithymia (r = .29; p = .01), aber keiner anderen Variable. Während ein positiver Zusammenhang zwischen Empathie und prosozialem Verhalten bestätigt werden kann (r = .23; p = .05), erweist sich der Zusammenhang zwischen dem Verhaltensexperiment und dem Fragebogen zu prosozialem Verhalten als nicht signifikant. Die Forschung sollte als nächsten Schritt problematische Facebook Nutzung ausreichend operationalisieren und standardisieren. Zukünftige Studien sollten Facebook als Forschungsplattform nutzen, Verhaltensexperimente online kreieren und tatsächliches Nutzerverhalten untersuchen.

Keywords: problematic Facebook usage, empathy, prosocial behavior, helping behavior, Internet addiction

11 Appendix B

Questions from the General Social Survey (GSS; Smith, 2003; Einolf, 2008)

During the past 12 months, how often have you done each of the following things:
(A) Donated blood
(B) Given food or money to a homeless person
(C) Returned money to a cashier after getting too much change
(D) Allowed a stranger to go ahead of you in line [this question was not used in this study]
(E) Done volunteer work for a charity
(F) Given money to a charity [this question was not used in this study]
(G) Offered your seat on a bus or in a public place to a stranger who was standing
(H) Looked after a person's plants, mail, or pets while they were away
(I) Carried a stranger's belongings, like groceries, a suitcase, or shopping bag
(J) Given directions to a stranger
(K) Let someone you didn't know well borrow a item of some value like dishes or tools

During the past 12 months, how often have you done any of the following things for people you know personally, such as relatives, friends, neighbors or other acquaintances?
(A) Helped someone outside of your household with housework or shopping
(B) Lent quite a bit of money to another person
(C) Spent time talking with someone who was a bit down or depressed
(D) Helped somebody to find a job References