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'Motives of traditional and cyberbullying in comparison and sensation seeking as a predictor'

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I Theoretical part

1. Introduction

With the rise of technological advancements, cyberbullying via the internet and mobile phones has increasingly become a problem. Cyberbullying has been linked to serious health issues such as depression, anxiety as well as somatic symptoms (Baier, Hong, Kliem, & Bergmann, 2018; Beckman, Hagquist, & Hellstörm, 2012; Ttofi, Farrington, Lösel, & Loeber, 2011). Victims often report suicidal ideations. Furthermore, suicides in a correlation to cyberbullying were reported (Hinduja & Patchin, 2010; Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Austria acknowledged the problem of cyberbullying in 2016 by declaring it a crime and punishing it with monetary penalties or a potential prison sentence of one year (Strafgesetzbuch, §107c).

For Austria and Germany the world health organization (WHO) found prevalence rates of 16% for girls and 20% for boys for being a victim of bullying in the last two months at age 11 in Austria and 11% for both boys and girls in Germany in their international report from 2009/2010. At age 15 9% of the girls and 19% of the boys of the austrian sample were bullied. Within the german sample 8% of the girls and 12% of the boys were victims of bullying. On the perpetrator side 11 year old Austrian girls had a prevalence rate of 7%, compared to boys with 16% in the last two months. 4% of the 11 year old German girls and 8% of the German boys were perpetrators. At age 15 perpetration rates increased for austrian children to 13% for the girls and to 32% for the boys. In the german sample prevalence rates of the 15 year olds were also higher then their 11 year old counterparts. 9% of the 15 year old german girls and 19% of the german boys bullied (Currie et al., 2012).

Among researchers it is still heavily debated whether cyberbullying is a new phenomenon or simply traditional face-to-face bullying in a new setting (Dooley, Pyżalski, & Cross, 2009; Slonje & Smith, 2008). This work deals with commonalities and differences between traditional bullying and cyberbullying and compares motives for bullying across the two settings. Understanding the motives behind bullying can help bullying prevention programs to detain bullying behavior in the first place. Therefore, the goal of this work is, to reproduce important findings about the classic

reactive and proactive aggression model and furthermore to discuss the Howard's quadripartite violence typology (QVT) of aggression. Based on the findings, the motives for bullying in both settings can be highlighted and an evaluation whether traditional and cyberbullying have the same or different underlying motives can be made. Furthermore, sensation seeking as a risk factor for bullying will be discussed as it has been linked to aggressive behavior (Howard, 2011).

2. Traditional bullying and cyberbullying

Commonly, cyberbullying is characterized based on definitions of traditional bullying (Del Ray et al. 2015; Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008). According to Olweus (2003) aggressive behavior has to meet three conditions to be defined as bullying. It needs to be a) a repeated aggressive act performed with b) the intention to harm the victim. In addition c) a power imbalance between victim and perpetrator has to make it difficult for the victim to defend itself against the bully. This power imbalance can originate for example in a difference in physical strength or social hierarchy. By this definition cyberbullying is a repeated aggressive act carried out through electronic devices with the intention to harm the victim. Superior technological knowledge or anonymity of the perpetrator can be identified as possible origins of power imbalance. This power imbalance makes it hard for the victim to stand up and defend itself (Del Rey et al. 2015; Smith et al., 2008).

Acts of cyberbullying can vary widely from hurtful text messages, harmful posts on social media or forums, distribution of embarrassing or altered photos up to identity theft (Perren et al., 2012; Willard, 2015). In contrast, traditional face-to-face bullying is categorized in three forms. First, it can express itself through verbal aggression like direct mean comments, threats or insults. Second, through indirect relational harassment by spreading rumors about the victim, social exclusion, manipulating relationships or humiliating the victim. Furthermore, it can be displayed in physical attacks against the victim, like pushing, kicking, beating or taking personal possessions from the victim (Compton, Campbell, & Mergler, 2014; Olweus, 2003; Slonje & Smith, 2008). Works by Gradinger, Strohmeier, and Spiel, (2012), Raskauskas and Stoltz (2007) and Smith et al. (2008) suggested, that cyberbullying and traditional bullying often co-occur. Some people engage in both cyber and

traditional bullying, while others are perpetrators in only one of the settings. This work will differentiate between pure traditional bullies, pure cyberbullies and combined bullies, who are perpetrators in both contexts.

Researchers agree that bullying has negative consequences for victims and perpetrators. Traditional bullying and cyberbullying have been linked to mental and physical health issues. Many studies (Baier et al., 2018; Bannink, Broeren, van de Looij-Jansen, de Waart, & Raat, 2014; Beckman et al., 2012; Hinduja & Patchin, 2010; Ttofi et al., 2014) reported that victims of bullying suffer from depression, anxiety, suicidal ideations and low self esteem. Baier et al. (2018) found that especially verbal and relational bullying have a strong impact on the psychological well-being of traditional bullying victims. Furthermore, they reported that psychological cyberbullying had the strongest influence on mental health. However, they found that physical bullying had little effect on mental well-being, especially for boys. They argued that the effect was particularly low for boys since they would engage in physical forms of confrontation more often than girls and might therefore be less likely psychologically distressed by it. Beckman et al. (2012) found no difference between both victims and bullies of traditional or cyberbullying regarding psychosomatic problems. They further discovered an equal risk for cyberbullies and cybervictims to develop mental health problems. Hinduja and Patchin (2010) found that both victims and bullies of cyberbullying or traditional bullying expressed suicidal ideations and were more likely to attempt suicide. However, this correlation was stronger among victims than offenders. Bannink et al. (2014) found a significant correlation between mental health problems and cyberbullying or traditional bullying among girls, but not among boys. However, they did not control for different subtypes of bullying, i.e. relational bullying. They further only found a correlation between traditional bullying and suicidal ideations but not for cyberbullying. Ttofi et al. (2011) found that being bullied during childhood is a risk factor for depression in later adult life. Therefore it is important to understand bullying and its underlying motivations to prevent bullying behaviour.

Researchers have not yet reached a common understanding of cyberbullying. Even though the most common definition of cyberbullying is based on the definition of traditional bullying as suggested by Olweus (2003), researchers are heavily

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debating if it can fully grasp the construct of cyberbullying. This discord has led to various definitions of cyberbullying which makes it hard to compare between studies. In the following section the unique characteristics of the cyber setting are discussed Furthermore, it will be examined whether cyberbullying and traditional bullying are fundamentally the same or different constructs.

2.1. Unique characteristics of the cyber setting. Even though cyberbullying is usually viewed as being traditional bullying in a different communication mode, unique context factors that accompany the different settings lead researchers to debate whether cyberbullying and face-to-face bullying are the same construct (Dooley et al., 2009; Slonje & Smith, 2008).

In contrast to cyberbullying, where the bullying happens in a cyber context, traditional bullying takes place in a setting where victim and perpetrator directly face each other (face-to-face). Important social cues like facial expressions, body language and the tone of the victims voice are missing in the cyber setting. These social cues moderate social interactions by giving the bully feedback on how its behavior is affecting the victim and thereby activating affective empathic responses. This intuitive empathic reaction can lead the bully to stop its harmful behavior earlier and even make the bully feel remorse for its actions (Runions, 2013). However, in the cyber context bullies often get no feedback about the victims feelings. This can give the perpetrator the impression that they were causing no harm which can subsequent in moral disengagement (Runions & Bak, 2015). Cyberbullies often report that they were just joking (Betts & Spenser, 2017) which shows a lack of empathic understanding for their victims (Steffgen, König, Pfetsch, & Melzer, 2011). Missing all these cues can further lead to a dehumanization of the victim (Suler, 2004).

While in the offline context bullying stops when the victim is out of the reach of the perpetrator, in the online context victims cannot seek shelter from the attacks and are constantly vulnerable. They can be targeted at any given time on their smartphones, social media or on any other online platform regardless of their whereabouts. Additionally, while traditional bullying can only be seen by people that are nearby, the cyber setting gives the impression of a huge audience that is always

present. This further increases the power imbalance between victim and bully and allows the bully to humiliate the victim in front of a large crowd at all times (Slonje & Smith, 2008).

Furthermore, the criterium for bullying that the harmful act has to be repeated might, in the case of cyberbullying, already be fulfilled after a single incident (Del Rey et al., 2015). Not only can one post be read multiple times by the victim and spectators, but also its content can be shared to others and may haunt the victim repeatedly even long after the initial culprit has deleted the harmful post or stopped the bullying entirely. This can make a single act of cyberbullying a permanent source of suffering for the victim (Dooley et al., 2009). Patchin and Hinduja (2015) claim, that redistribution of a harmful post or the mere knowledge by the perpetrator of the visibility of a harmful post to bystanders can already be seen as a fulfilment of the repetition criterion. Furthermore, while in the offline context memory of the incident becomes vague after some time, hurtful text messages, online posts and other forms of cyberbullying can be repeatedly viewed in their original form in every detail by the victim and cause pain over and over again (Runions, Shapka, Dooley, & Modecki, 2013). This is supported by findings that children's perception of cyberbullying does not include repetition as a relevant criterion as a study from Betts and Spenser (2017) suggests. They interviewed 11 to 15 year olds in focus groups. The children defined an act of aggression as cyberbullying if it affected the victim regardless whether it was repeated or not.

Additionally, the setting of the cyberspace allows bullies to act anonymously. Therefore, the victim often doesn't know who it's bully is, which makes it even harder for the victim to fight back (Dooley et al., 2009). Because of this anonymity bullies can act without the fear of consequences which furthermore can lead to a disinhibiting effect on potential perpetrators (Dooley et al., 2009). Moreover it is easy for the bully to shift the blame away from itself if there is a danger of being caught (Patchin & Hinduja, 2006). In addition, many acts of cyberbullying are not yet prosecuted by the law. For the bully, the lack of consequences regarding punishment if being caught leads to spontaneous encroachments simply for the sake of entertainment. Overall there are less factors that inhibit the impulse of perpetrators to bully in the cyber setting than in the offline setting.

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3. Motivation for aggression

Since bullying causes intense suffering for the victims, which often forces them to switch schools and sometimes even leads to victims committing suicide (Baier et al., 2018; Bannink et al., 2014; Beckman et al., 2012; Hinduja & Patchin, 2010; Ttofi et al., 2014), researchers are investigating the motives of perpetrators to prevent harassment in the future. The majority of research has focused on explaining bullying behavior in terms of proactive or reactive aggression.

3.1. Proactive and reactive aggression. The model of proactive and reactive aggression (Dodge & Coie, 1987) is the current and most commonly used model to explain aggressive behavior and therefore is also used to explain bullying.

Proactive aggression, also called instrumental aggression, is defined as an unprovocted, intentional and planned aggressive act that is goal-oriented. The perpetrator is seeking a reward in the form of social status, power or resources. The aggression is utilized to gain the desired reward and is accompanied by a positive affect. Proactive aggression is associated with positive outcome expectations that are often learned from family or peer role models (Dodge, Lochman, Harnish, Bates, & Pettit, 1997).

In contrast *reactive aggression* is impulsive and unplanned and carried out after a person has been provoked. It is a reaction to a perceived or real provocation or frustration and has the goal to reduce negative emotions by retaliating (Dodge & Coie, 1987). Anger is the dominant emotion that causes reactive aggression.

However, this theory fails to explain other aggressive behaviors like the concept of revenge or aggression for fun seeking (Brad & Anderson, 2001; Howard, 2011; Runions, Bak, & Shaw, 2017). It cannot account for impulsive aggression that is accompanied by positive affect or a planned but delayed aggressive act out of anger. Therefore Howard (2011) suggests a model that separates affect and impulse control to cover four types of aggression motivation: The *Quadripartite violence typology* (QVT).

3.2. Quadripartite violence typology. The quadripartite violence typology of aggression distinguishes four motives along two dimensions. These dimensions separate motivational valence (appetitive vs. aversive) from the regulative process of self-control (impulsive vs. controlled). By combining these dimensions four motives each with distinct goals result: impulsive-appetitive (*entertainment*), controlled-appetitive (*reward*), impulsive-aversive (*rage*) and controlled-aversive (*revenge*) (*Figure 1*; Howard, 2011).

Figure 1. The four motives of the Quadripartite violence typology (Howard, 2011).

	positive < affect > negative	
impulsive ^ impulse control v controlled	'Entertainment' **Impulsive-Appetitive**	'Rage' **Impulsive-Aversive**
	'Reward' **Controlled-Appetitive**	'Revenge' **Controlled-Aversive**

Impulsive-appetitive aggression is unprovoked and impulsive and is led by the wish to generate thrill and excitement. This is accomplished by hurting or humiliating others and accompanied by a positive affect. *Controlled-appetitive* aggression is deliberate, unprovoked and planned. Bullies that use it seek to gain a material, social or emotional reward. It is driven by the anticipation of a positive outcome. *Impulsive-aversive* aggression is a spontaneous impulsive reaction to a perceived or real provocation. It has the goal to reduce negative feelings like anxiety, frustration or stress that were caused by the perceived provocation. *Controlled-aversive* aggression is commonly known as revenge. It is a planned delayed reaction to a perceived provocation with the goal to settle the score. The negative affect of the initial incident is balanced out by taking revenge (Howard, 2011).

3.3. Bullying and impulsive-appetitive aggression (entertainment). The entertainment motive has been neglected in the bullying research so far, since it is not a part of the commonly researched model of proactive and reactive aggression. Elbert, Moran, and Schauer (2017) as well as Gudjonsson and Sigurdsson (2007)

showed that is a common human motive for violent behavior. Elbert et al. (2017) described appetitive aggression as biologically driven and characterized by the gain of a positive affect. They say that it is part of the human nature and not limited to some extreme individuals. They support that claim with examples of people reporting that they felt positive affect during periods of hunting, fighting and killing in wars. In general, they found a higher appetitive violence among men than among women. Furthermore, impulsive-appetitive aggression has often been regarded as a main motive for violent offenders (Gudjonsson & Sigurdsson, 2007).

In Fluck's (2017) and Compton's et al. (2014) studies entertainment has been named as one of the main motives for bullying and especially cyberbullying. Fluck (2017) asked german middle school students for their perceived motives for both traditional and cyberbullying. Bullies and victims named sadism, a form of fun seeking, as one of the main motives. Fluck describes sadism as a 'feeling of joy that is being drawn from watching another person suffer'. However the sadism scale in Fluck's work contained both items concerning the avoidance of boredom and the seeking for fun, though students attributed fun seeking more often than boredom to sadism. Compton et al. (2014) asked focus groups of students, teachers and parents to evaluate reasons for bullying. Only the group of teachers mentioned fun or boredom as a motive for traditional bullying whereas students and parents perceived fun and boredom to be the main motive for cyberbullying. However, teachers did not think fun or boredom were a relevant motive for cyberbullying.

Furthermore, cyberbullying has been linked to aggressive humor, a form of maladaptive humor that is being used to make oneself laugh without regard for the potential impact on others, i.e. by making peers angry or by humiliating them (Martin, Pujlik-Doris, Larsen, Gray, & Weir, 2003; Sari, 2016). The concept of aggressive humor has similarities to the impulsive-appetitive motive. Bullies that name the impulsive-appetitive motive also seek to generate a positive affect e.g. by hurting or humiliating others (Howard, 2011). This similarity between aggressive humor in the cyber context and the impulsive-appetitive motive supports that the entertainment might be a main motive for cyberbullying.

Gradinger et al. (2012) found support for the conjunction of cyberbullying and the impulsive-appetitive motive. They found that 'fun' was the second most relevant

motive for pure cyberbullies and a relevant motive for combined bullies (perpetrators who act in the cyber setting as well as face-to face). However, fun as a motive was rarely mentioned by pure traditional bullies in comparison to the motive of anger.

Therefore, within this work the impulsive-appetitive motive is expected to be more relevant for the cyber context then the traditional context.

3.4. Bullying and controlled-appetitive aggression (reward). Controlled-appetitive aggression equals the concept of proactive aggression (Howard, 2011; Runions et al., 2017). Dodge et al. (1997) discovered that chronicle assaultive youth often learned to use instrumental aggression from family or peer role models. Of their sample only the adolescents that anticipated positive outcomes for aggressing made use of proactive goal-oriented aggression.

Fluck (2017) distinguishes between the motive of instrumental violence as a way to gain material rewards and the motive of power which is seen as a form of instrumental aggression with the aim to improve or maintain a social status. Those two motives are combined into the concept of controlled-appetitive aggression within Howard's (2011) work. In Fluck's work both victims and bullies thought, that instrumental violence was not a common motive for bullying. However, victims often claimed that they thought power was one of the main motives for bullying.

In the study of Compton et al. (2014) the gain of power and status was believed to be the most important motive for traditional bullying by the focus groups of students, parents and teachers. For these focus groups the gain of power and status was not a relevant motive for cyberbullying.

Gradinger et al. (2012) found that the motive was relevant for combined bullies and was named far less than other motives by pure bullies. They distinguish 'power' and 'affiliation', which both fall under the 'reward' category in Howard's model.

3.5. Bullying and impulsive-aversive aggression (rage). Impulsive-aversive aggression equals the concept of reactive aggression (Howard, 2011; Runions et al., 2017). In the offline setting, misinterpreted interactions between people can lead to reactive aggression. Dodge (1980) found that the interpretation of the 'provokers'

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intention is a relevant predictor for retaliatory behavior. Children that attribute hostile intentions to ambiguous behaviors tend to react aggressively more often than children that attribute benign intentions. In line with these hostile attributions, Avilés (2006) found, that bullies often claim to have been provoked by their victim and therefore justify their aggressive behavior as retaliation. In addition Camodeca, Goossens, Terwogt, and Schuengel (2002) found that 7-8 year old stable bully/victims (victims which were also perpetrators themselves) and stable victims were more reactively aggressive than occasional victims or bully/victims. Furthermore, Dodge et al. (1997) showed that for chronically assaultive youth experiences of abuse, problems in peer relations and inadequate problem solving behaviors are linked to reactive aggression.

In the study by Gradinger et al. (2012) impulsive-aversive aggression ('anger') was named most often as a motive for both pure cyber and traditional bullies as well as combined bullies. However, for pure traditional bullies 'anger' was by far the most important motive, whereas for pure cyberbullies impulsive-appetitive aggression ('fun') was also very relevant. Kwak and Oh (2017), found that impulsivity was a main predictor for traditional bullying, however not for cyberbullying. Furthermore, they found that combined bullies were most aggressive, had less social support, less self control and more exposure to violence than other groups of bullies and people, that were un-involved in bullying.

3.6. Bullying and controlled-aversive aggression (revenge). Revenge is a delayed aggressive response to a real or perceived provocation and accompanied by strategic thinking (Howard, 2011). Since the majority of research focused on the model of proactive and reactive aggression of which delayed revenge is not a part, research on revenge as a motive for bullying is scarce (Frey, Cynthia, & Cohen, 2015).

Yeager, Trzesniewski, Tirri, Nokelainen, and Dweck (2011) found that merely the thought of taking revenge can be used as an emotional relief from a prior perceived injustice. Furthermore, they found that aggressing out of retaliation is widely accepted by peers. However, even though taking revenge might not lead to as

much disapproval from peers as proactive aggression would, retaliators often engage in a vicious cycle of being victimized and retaliating thereafter over and over again.

4. Sensation seeking

Additionally, this work investigates sensation seeking as a risk factor for bullying behavior. Sensation seeking is defined as an urge for new, diverse, complex and intense experiences and sensations even at the cost of physical, social, legal and financial risks (Zuckerman, 1979). It therefore has often been linked to problematic behaviors especially during adolescence like unprotected sex, drunk driving, speeding, drug abuse and binge drinking (Steinberg, 2007). During adolescence sensation seeking spikes. This is biologically based and caused by changes in brain areas that are needed for impulse control and reward prediction. For example, the presence of peers activates the ventral striatum including the nucleus accumbens and orbitofrontal cortex in adolescents (Chein, Albert, O'Brien, Uckert, & Steinberg, 2011). Furthermore, sensation seeking is often linked to impulsivity. Many instruments confound these two constructs by measuring them together (Steinberg, Albert, Cauffman, Banich, Graham, & Woolard, 2008). However, sensation seeking and impulsivity have a different neurological basis and go through distinct changes in their respective brain areas separately during adolescence. Between age 10 and 15 sensation seeking increases and starts to decline or remains stable thereafter, whereas impulsivity is declining constantly from age 10 (Antoniadou, Kokkinos, & Markos, 2016; Chein et al., 2011; Steinberg, 2007; Steinberg et al., 2008). This increase in sensation seeking is based on an increase in dopaminergic activity in the socioemotional system during adolescence which causes an increase in sensitivity to rewards. At the same time the cognitive control system has not yet matured. Self-regulation, which allows impulse control, develops with the maturation of the cognitive control system over the course of the adolescence (Steinberg, 2007). Furthermore, man tend to have a higher degree of sensation seeking than women (Antoniadou et al. 2016; Steinberg et al., 2008).

A connection between sensation seeking and aggression is not surprising. Sensation seeking and impulsivity often coincide and impulsivity plays a major part in some forms of aggression. Furthermore, fun seeking is the main goal of both,

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impulsive-appetitive aggression and sensation seeking. It is therefore not unexpected that Howard (2011) found a positive correlation between appetitive-impulsive aggression and sensation seeking. Howard claims that arousal and excitement seeking are motives for violence. Furthermore, a negative correlation between appetitive-controlled (instrumental violence) and sensation seeking was found.

Antoniadou et al. (2016) found a positive correlation between traditional bullying and several dimensions of sensation seeking namely experience seeking, disinhibition and boredom susceptibility, while cyberbullying was positively correlated with only boredom susceptibility. However, Kelly, Newton, Stapinski, and Teesson (2018) did not find a connection between traditional bullying perpetration and sensation seeking when using the Substance Use Risk Profile Scale (SURPS), a scale which contains the subscales impulsivity, sensation seeking, anxiety sensitivity and hopelessness, to assess sensation seeking. Kokkinos, Antoniadou, and Markos (2014) on the the other hand found both cyberbullying and cybervictimization to be positively correlated to two dimensions of sensation seeking: experience seeking and disinhibition.

5. Summary and research questions

In this work the underlying aggression motivation of bullying in the face-to-face context is compared to the cyber context and sensation seeking as a risk factor for engaging in bullying is investigated.

Earlier studies focused on the established model of proactive and reactive aggression. This model however fails to explain delayed revenge or spontaneous aggression with the goal to seek fun and entertainment. Howard (2011) expands the established model by two additional motives in his QVT-model. Therefore a general comparison of the four motives of the QVT-model in both the cyber and the face-to-face context will be made in this work. Especially entertainment seeking (the impulsive-appetitive motive) is expected to be a relevant motive for cyberbullying, because of the disinhibiting effects (e.g. anonymity, missing facial cues) of the cyber setting and the lack of consequences for bullying in the cyber setting (Dooley et al., 2009; Runions & Bak, 2015). Furthermore, this work expects rage to be one of the most important motives for both traditional and cyberbullies. This is based on the fact

that misinterpreting ambiguous situations as hostile is a main motive for impulsive-aversive aggression (Dodge, 1980) and human interaction is often ambiguous. Both face-to-face interaction and written communication require the recipient to interpret the content of the message and the senders intentions which can often lead to misunderstandings. However, it is anticipated to be more important for traditional bullies than for cyberbullies, because of the potential for misinterpretation of face-to-face interactions in addition to the possibility to retaliate immediately. Delayed revenge on the other hand is expected to play a subordinate role in bullying. Reward oriented aggression is anticipated to be less important than other motives for bullying. However, it seems to be relevant for combined bullies, because their participation in both contexts could be an indicator for learned positive outcome expectations, like Dodge (1997) finds in his sample of chronically assaultive youth.

→ *H1: There is a difference in the motives of cyberbullying and traditional bullying.*
→ *H1a: The impulsive-aversive motive is stronger among traditional bullies than among cyberbullies.*
→ *H1b: Impulsive-appetitive motives are stronger in the cyber context.*

Sensation seeking is a predictor for aggression. Research shows positive correlations between sensation seeking and bullying in both settings. This work has the goal to replicate these findings and to extend the current research by comparing the predictive value of sensation seeking between the traditional and cyber setting.

→ *H2a: There is both a positive correlation between sensation seeking and cyber aggression and between traditional aggression and sensation seeking.*
→ *H2b: Sensation seeking has a different predictive value for cyberbullying and traditional bullying.*

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II Empirical part

6. Method

6.1. Measures. To research the hypothesis a questionnaire was designed. The questionnaire was assembled and managed by Mag. Daniel Graf, who also provided the topic of this paper and supervised this work. The questionnaire comprised questions about traditional bullying, cyberbullying, motives for bullying, sensation seeking, descriptive date of the sample, as well as a question about gaming and one about social media use.

Traditional bullying behavior was measured with the European Bullying Intervention Project Questionnaire (EBIPQ; Del Rey, Elipe, & Ortega-Ruiz, 2012). Only the items concerning the behavior of bullies were included, questions about victimization were excluded. Therefore seven items for traditional bullying were contained in the questionnaire. Cronbach's alpha was .66 for all seven items. Questions covered a huge variety of bullying behaviors of different severities including verbal, relational and physical aggression. Answers could range from 'no', 'yes, 1-2 times', 'yes, 1-2 times a month', 'yes, approximately once per week' to yes, more than once per week' on a five point likert scale. Typical items for traditional bullying were 'I excluded or ignored someone.' or 'I hit or pushed someone.'.

Cyberbullying was assessed with the European Cyberbullying Intervention Project Questionnaire (ECIPQ; Del Rey et al., 2015). Only the items concerning the behavior of bullies were included, questions about victimization were excluded. So eleven items for cyberbullying behavior (cyber-aggression subscale) were contained in the questionnaire. Cronbach's alpha was .69 for all eleven items. Items like 'I posted personal information about someone on the internet.' or 'I created a fake account and impersonated someone (e.g. on facebook, twitter or instagram).' are representative for the scale. Answers could range from 'no', 'yes, 1-2 times', 'yes, 1-2 times a month', 'yes, approximately once per week' to yes, more than once per week' on a five point likert scale.

Motives for aggressive behavior were quantified with self developed items based on the Cyber-Aggression Typology Questionnaire (CATQ; Runions et al., 2017). It covered two answers per motive of the quadripative typology of aggression

and was shown to the participants for each question of the EBIPQ or ECIPQ that they answered with at least 'yes, 1-2 times'. The participants were asked why they had behaved this way. For example if a person had answered the item 'I spread rumors about someone on the internet.' with at least 'yes,1-2 times' he or she would be presented with the question 'Why did you spread rumors about someone on the internet?'. It was possible to choose multiple of the following motives as an answer: 'Because it was exciting.', 'Because it was fun.', 'Because I wanted to demonstrate that I am strong.', 'Because I wanted to be accepted.', 'Because I felt threatened and had to blow off some steam immediately.', 'Because I was getting teased so much that I wanted to fight back immediately.', 'Because I had a score to settle.', 'Because I had to take revenge for something.'.

Sensation seeking was compiled with 17 items of the Need Inventory of Sensation Seeking (NISS; Roth & Hammelstein, 2012). Eleven of these items were part of the need for stimulation subscale, that contains questions that focus on the aim of approaching stimulating situations and six negatively poled items were part of the subscale avoidance of rest, that focuses on the aim to avoid rest and tranquility. Answers ranged on a five point likert scale from 'almost never', 'seldom', 'sometimes', 'often' to 'almost always'. Cronbach's alpha was .84 for the need for stimulation subscale and .74 for the avoidance of rest subscale. The dimension need for stimulation contains items like 'I like situations in which my heart is beating from excitement.' or 'I sometimes need a 'kick' to feel well.'. Items like 'I can enjoy it if nothing happens for a while.' and 'I enjoy it, to do nothing and to experience nothing for once.' were representative of the subscale avoidance of rest.

For demographic data age, gender, country of origin, language spoken at home, education and profession were inquired. In addition, two questions regarding internet usage, that might indicate addiction, were asked. The first question regarding addiction was 'Are you checking your social media before you have breakfast?' and could either be answered with 'yes' or 'no'. The second question pointing in the direction of addiction was 'How much would you describe yourself as a gamer?'. Answers here ranged on a five point likert scale from 'not at all', 'a little', 'moderately', 'quite', 'very much'.

6.2. Recruitment and sample. A german speaking voluntary sample was recruited from January to April 2018. Participant took part in in the survey through an online self-report questionnaire that was distributed as a link. The majority of participants were recruited through teachers, Facebook and forwarded links to participants friends. 215 children filled out the questionnaire in their schools, 118 got a forwarded link with the study from a friend, 102 participants took part in the survey after opening a link in Facebook, the last 28 participants either discovered the questionnaire on flyers or survey websites or did not specify how they received the link. Of the 102 participants on facebook, 86 were girls compared to 16 boys. This imbalance is not surprising since women tend to fill out online-questionnaire more often than men (Cheung, ten Klooster, Smit, de Vries, & Pieterse, 2017). After the first month of recruiting the number of female (N=171) participants was a lot higher than that of male participants (N=98). To reach a more representative balance of boys and girls explicitly male participants were asked after the first month of recruiting.

The final sample consisted of 463 german-speaking adolescents of which 55.9% (N=259) were female and 44.1% (N=204) were male. Participants age ranged from 11 to 24 (M=17.11 years). Participant above age 24 were excluded from the sample since adolescents were the targeted age group. 75.4% (N=349) participants were from Austria, 24% (N=111) from Germany, N=2 from Switzerland and 1 person did not specify a country of origin. 439 participants were native german speakers, 24 learned german as a second language. 332 (71.7%) of participants were attending schools, 94 (20.3%) were at university, 20 (4.3%) in apprenticeship and 14 (3%) were either working, unemployed or did not specify their current situation.

Prevalence rates were as follows: 88% of the sample engaged at least once in traditional aggression and 65% in a form of cyber aggression. 6% of the participants were pure cyber aggressors, 28% pure traditional aggressors and 60% showed aggressive behavior in both settings. Almost half the sample (48%) fulfilled the criterion of repetition for bullying. 41% engaged in traditional bullying and 22% in cyberbullying. Of the entire sample 6% were pure cyberbullies, 25% pure traditional bullies and 17% bullies in both settings (*Table 1)*.

Table 1. Prevalence rates.

Setting	Aggressor			Bully		
	pure	combined	overall	pure	combined	overall
Traditional	28%		88%	25%		41%
		60%			17%	
Cyber	6%		65%	6%		22%

6.3. Data analysis. The statistical analysis was carried out with the program IBM SPSS Statistics 23. To answer hypothesis one, whether there is a difference in the motives of cyberbullying and traditional bullying, a descriptive comparison of the motives between the traditional and the cyber setting was made. Afterwards *t*-tests were calculated to find statistical differences between the settings for each motive. First aggressors and bullies were defined. Aggressors were all participants, who answered atleast one item of the ECIPQ or EBIPQ with at least 'yes, 1-2 times'. To classify as a bully, at least one of the questions had to answered with 'yes, 1-2 times a month'. Then the groups of aggressors and bullies were further divided into 'pure' aggressors or respectively 'pure' bullies that only showed aggressive behavior in either the cyber or traditional setting and 'combined' aggressors or respectively 'combined bullies', who showed aggressive behavior in both settings.

For every subgroup of aggressors and bullies, sum scores for each motive of the QVT, impulsive-appetitive, controlled-appetitive, impulsive-aversive and controlled-aversive were calculated with the MEAN function of SPSS to allow for missing values since not every participant engaged in every aggressive behavior. If a participant answered a bullying question of the ECIPQ or EBIPQ with 'yes', the motives of the QVT were inquired. The participant had eight options to name a reason for the aggressive behavior. Multiple nominations of motives were possible. Of these eight motive options two were assigned to each motive of the QVT. Hence for every bullying question that was answered with 'yes', each motive could be named 0-2 times. For cyberbullying two items for each of the eleven questions of the ECIPQ were summed up with the MEAN function for each of the four motives of the QVT. For traditional bullying respectively two items for each of the seven questions of the EBIPQ for each of the four motives were summed up with the MEAN function.

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The resulting mean represents the actual nominations of a motive divided through all possible nominations of a motive. It has to be considered that all possible nominations equals two times the number of bullying questions answered with 'yes' as every motive could be chosen twice per question. The mean can go from 0, no nomination of the motive up to 1 representing 100% of all possible nominations. This allows the comparability of the calculated values. These sum scores show the frequency at which a motive was named. The percentage shares were then compared. The percentage points missing to 100 correspond to the non-nominations and are therefore not included in the diagrams. In the following sections the percentage shares will be depicted descriptively and displayed in figures. Afterwards *t*-tests were calculated with the sum scores to check for statistical differences between the motives in the traditional and cyber setting. The sample was partially overlapping. Therefore, the motives for combined aggressors, as well as combined bullies were compared between the cyber and traditional setting with paired-sample *t*-tests. Motives of pure cyber aggressors and pure traditional aggressors, and respectively pure cyberbullies and pure traditional bullies were compared with independent sample *t*-tests.

To evaluate hypothesis two, if there is a positive correlation between sensation seeking and cyber aggression and between traditional aggression and sensation seeking, scores for aggressive behavior of all participants were calculated for the cyber and offline context separately. Aggressive behavior included answers that did not fulfil the repetition criterion for bullying as well as answers classified as bullying. The entire sample was included into the calculation to gain an overview over the relationship between sensation seeking and aggressive behavior since bullying is a form of aggressive behavior. Two linear multiple regressions were calculated, including other potential predictors. Afterwards, the regression coefficients for aggressive behavior in the cyber setting and the traditional setting were compared to test whether there is a difference in the positive correlations of sensation seeking and traditional aggression and the positive correlation between sensation seeking and cyber aggression.

7. Results

7.1. Results for motives of aggression and bullying. Participants were classified as aggressors (including bullying) if they answered at least one item with 'yes, 1-2 times'. 26 participants were pure cyber aggressors, 130 pure traditional aggressors and 277 showed aggressive behavior in both settings. In a second step aggressors that answered at least one of the items concerning aggressive behavior with 'yes, 1-2 times a month', and therefore fulfilled the criterion of repetition for bullying, were classified as bullies. 27 participants were pure cyberbullies, 114 pure traditional bullies and 77 bullies in both settings. Some of the combined aggressors did not classify as bullies in both settings, fulfilling the repetition criterion only in one setting and were therefore classified as pure bullies. This led to a higher number of pure cyberbullies than pure cyber aggressors.

7.1.1. Descriptive comparison of the motives. In the following sections the percentage shares of each motive as described in paragraph 6.3. above will be compared descriptively. First motives for aggressors overall will be compared. Afterwards aggressors will be split into pure aggressors, that showed aggressive behavior in only one setting, and combined aggressors, that were aggressive in both the traditional and cyber setting. In a second step only participants who fulfilled the criterion of repetition will be included in in a comparison of motives for bullying. Initially bullies in general will be compared and then bullies will be split into pure bullies and combined bullies.

303 participants engaged in cyber aggression, 407 in aggressive behavior in the traditional setting. Traditional aggressors named every motive more often than cyber aggressors, except for the impulsiv-appetitive motive which was named more often by cyber aggressors (52%). Traditional aggressors gave the impulsive-aversive motive as their most common reason for aggressing (77%). The controlled-aversive motive was in second place (46%), closely followed by the impulsive-appetitive motive (40%). For both traditional (32%) and cyber aggressors (25%) the controlled-appetitive motive was the least common one. As for traditional aggression the impulsive-aversive motive was named the most for cyber aggression (61%).

However, in difference to traditional aggressors cyber aggressors claimed impulsive-appetitive reasons as their second highest motive (52%; see *Figure 2*).

Figure 2. Comparison of the four motives of the QVT between cyber aggressors (CA) and traditional aggressors (TA).
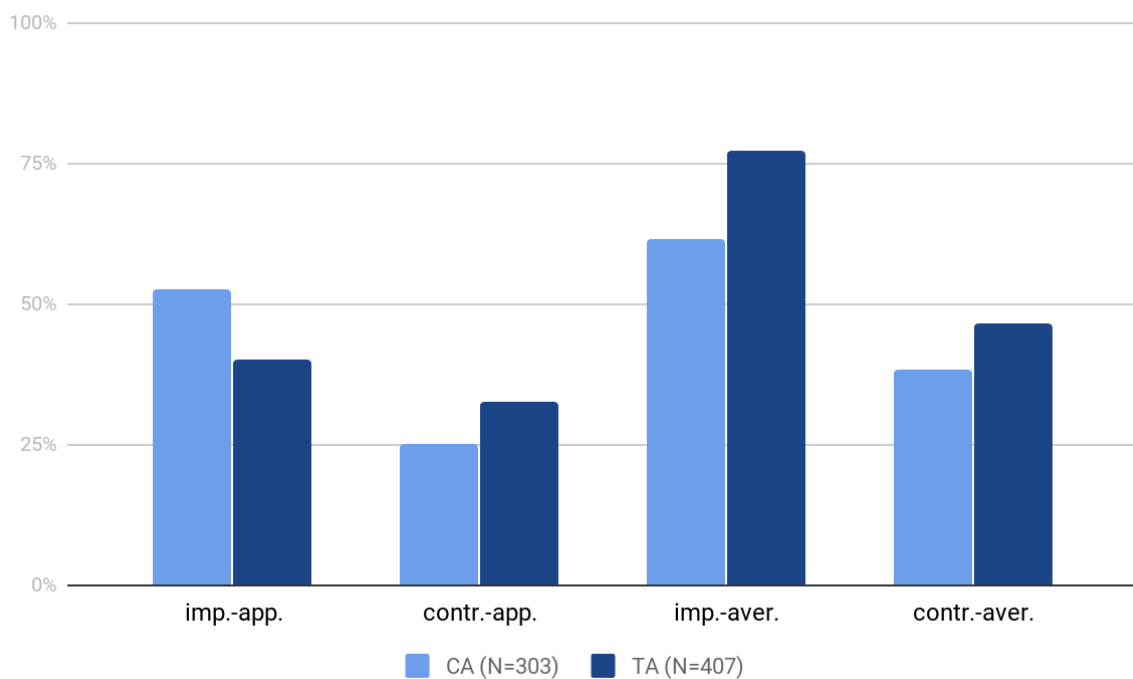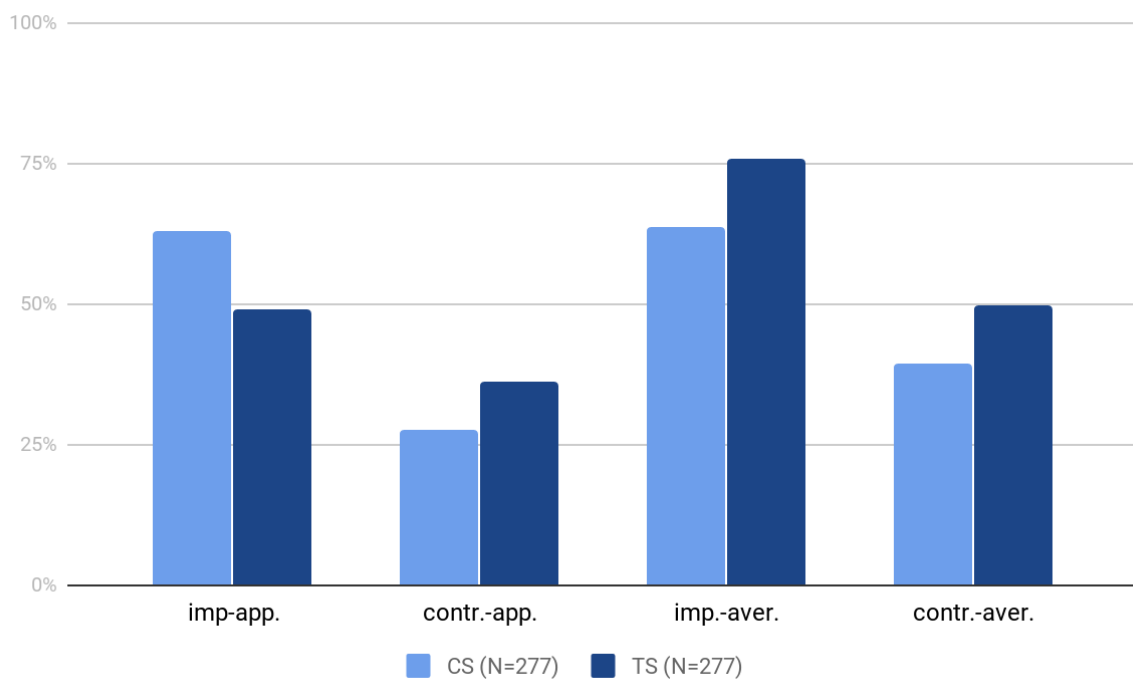

Note. imp.=impulsive, app.=appetitive, contr.=controlled, aver.=aversive.

To compare the motives for aggressive behavior, the sample was split in three groups: aggressors in the cyber setting, aggressors in the traditional setting and participants who were aggressors in both setting.

277 participants were combined aggressors, based on the fact that they answered at least one bullying item in both the cyber and the traditional setting with at least 'yes, 1-2 times'. Combined aggressors named every motive expect the impulsive-appetitive more often in the traditional setting than in the cybersetting. The impulsive-aversive motive was the most important motive in both contexts. In the cyber setting, the impulsive-aversive motive was the second most important, followed by the controlled-aversive and last the controlled-appetitive motive. In the traditional

setting the order of the impulsive-appetitive and the controlled-aversive motive was reversed (*Figure 3*).

Figure 3. Comparison of the four motives of the QVT for combined aggressors between the cyber setting (CS) and the traditional setting (TS).
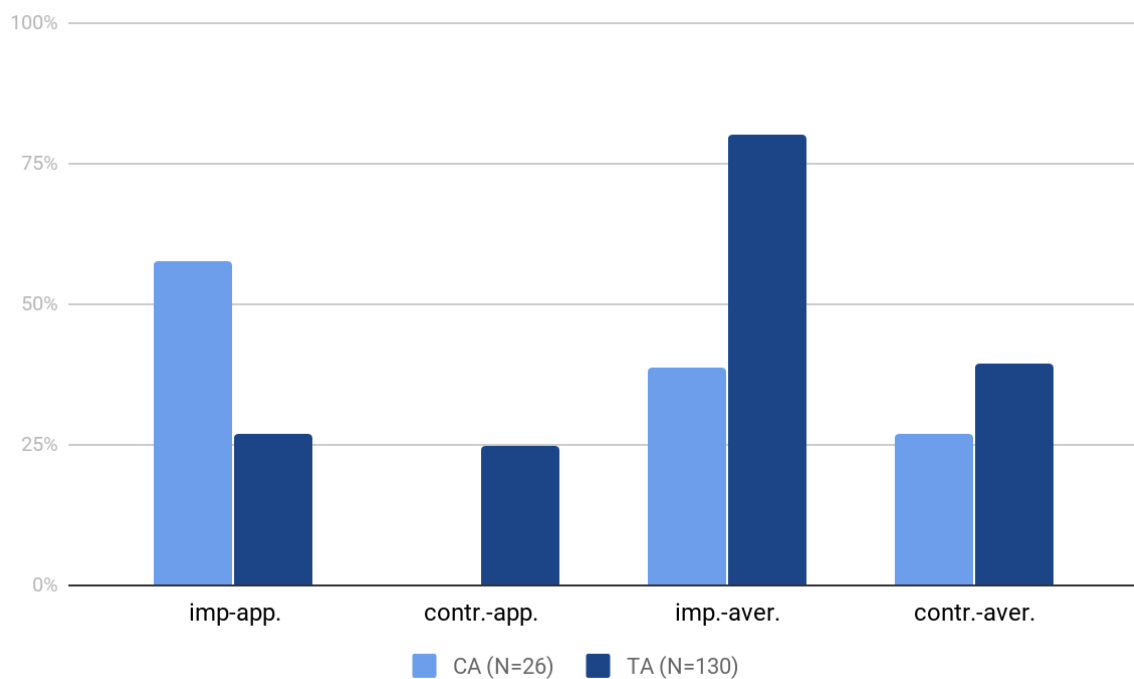

Note. imp.=impulsive, app.=appetitive, contr.=controlled, aver.=aversive.

26 participants were pure cyber aggressors and 130 pure traditional aggressors, based on the fact that they answered at least one bullying item in only the cyber and the traditional setting but not in both contexts with at least 'yes,1-2 times'. Pure traditional aggressors named the impulsive-aversive motive about twice as often as pure cyber aggressors, whereas cyber aggressors named the impulsive-appetitive about twice as often as pure traditional aggressors. The most important motive for pure traditional aggressors was by far the impulsive-aversive motive, followed by the controlled-aversive motive, the impulsive-appetitive motive and then the controlled-appetitive motive. Pure cyber aggressors named the impulsive-appetitive motive most often, followed by the impulsive-aversive motive

and the controlled-aversive motive. None of the pure cyber aggressors named the controlled-appetitive motive as a reason for aggressing (see *Figure 4*).

Figure 4. Comparison of the four motives of the QVT between pure cyber aggressors (CA) and pure traditional aggressors (TA).
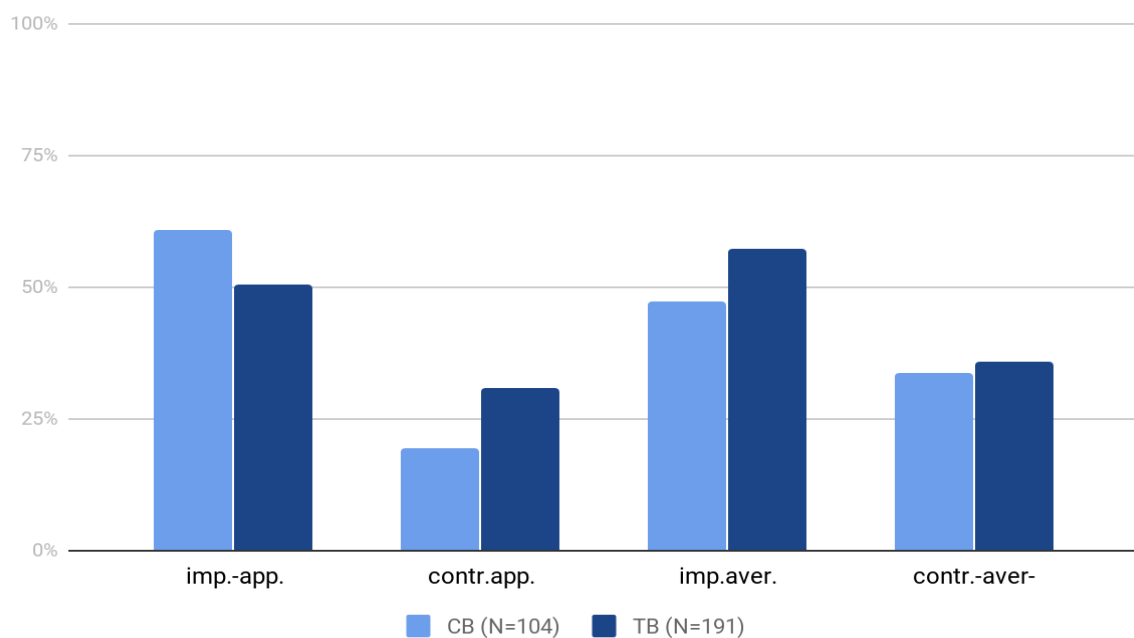

Note. imp.=impulsive, app.=appetitive, contr.=controlled, aver.=aversive.

Motives for bullying behavior included only motives for behaviors that were repeated at least once or twice a month. Motives for aggressive behaviors that only happened once or twice, but did not fulfill the criterion of repetition were not included in this calculation.

191 participants were categorized as traditional bullies, 104 as cyberbullies. All motives except for the impulsiv-appetitive motive were named more often by traditional bullies. Traditional bullies named impulsive-aversive reasons most often (57%), closely followed by the impulsive-appetitive motive (50%). The controlled-aversive (35%) and controlled-appetitive (31%) motives were less common for traditional bullies but still relevant. For traditional bullies the order of motives followed the same pattern as for traditional aggressors. Even though the

impulsive-appetitive motive was more common for both cyber aggressors (25%) and cyberbullies (61%) then for their traditional counterparts (32%; 50%), it was only named more often then the impulsive-aversive motive (47%) for cyberbullies. Therefore, in contrast to cyber aggression the order of motives for cyberbullying was impulsive-appetitive (61%) followed by impulsive-aversive motives (47%). Controlled-aversive (34%) and controlled-appetitive (19%) motive were named less often by cyberbullies than the other motives (see *Figure 5*).

Figure 5. Comparison of the four motives of the QVT between all cyberbullies (CB) and traditional bullies (TB).

Note. imp.=impulsive, app.=appetitive, contr.=controlled, aver.=aversive.

The group was split into pure cyberbullies, pure traditional bullies and combined bullies, who were bullies in both settings. 77 people were classified as combined bullies, who answered at least one bullying item of both the traditional and cyber setting with 'yes, 1-2 times a month' and therefore fulfilled the criterion of repetition. All motive were named more often in the traditional setting. The impulsive-appetitive motive was named most often in both settings, followed by the impulsive-aversive motive, then the controlled-aversive motive and last the

controlled-appetitive motive. The controlled-appetitive motive was named about twice as often in the traditional than in the cyber setting (see *Figure 6*).

Figure 6. Comparison of the four motives of the QVT for combined bullies between the cyber setting (CS) and the traditional setting (TS).
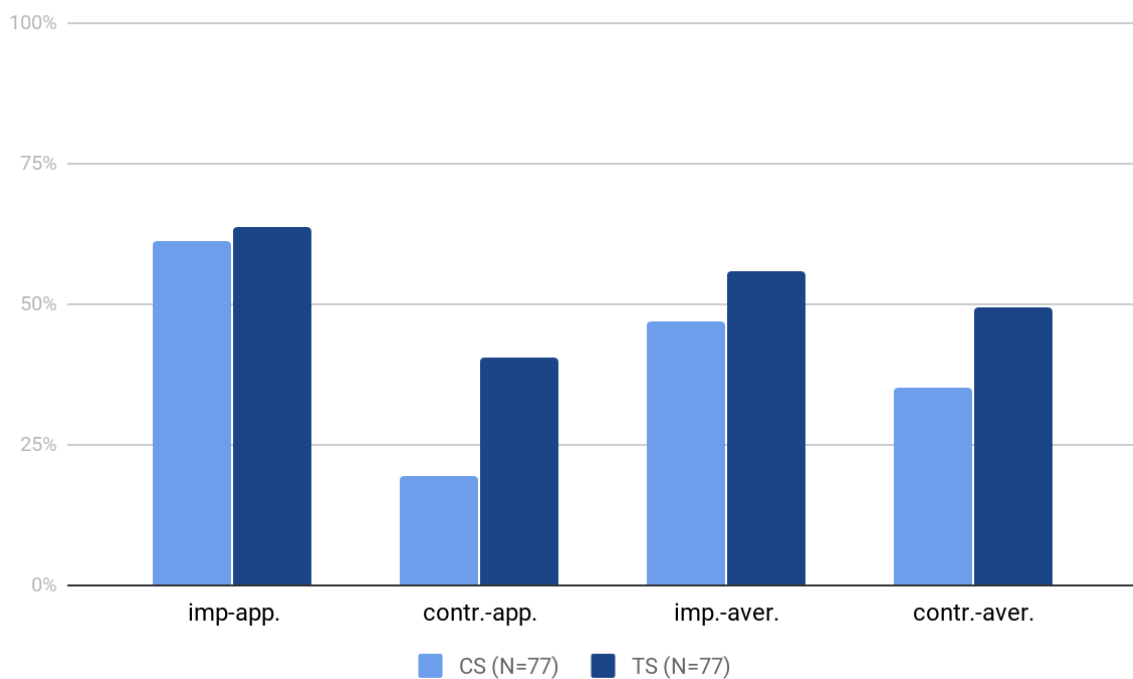
Note. imp.=impulsive, app.=appetitive, contr.=controlled, aver.=aversive.

27 participants were classified as pure cyberbullies and 114 as pure traditional bullies, who named at least one bullying item in either the traditional or the cyber setting with 'yes, 1-2 times a month', and therefore fulfilled the criterion of repetition. The impulsive-aversive motive was the most important in the traditional setting followed by the impulsive-appetitive motive, and vice versa for pure cyberbullies. The controlled-aversive and controlled-appetitive motive were named less often by both groups, with the controlled-aversive being named more often by pure cyberbullies and the controlled-appetitive motive being named more often by pure traditional bullies (see *Figure 7*).

Figure 7. Comparison of the four motives of the QVT between pure cyberbullies (CB) and pure traditional bullies (TB).
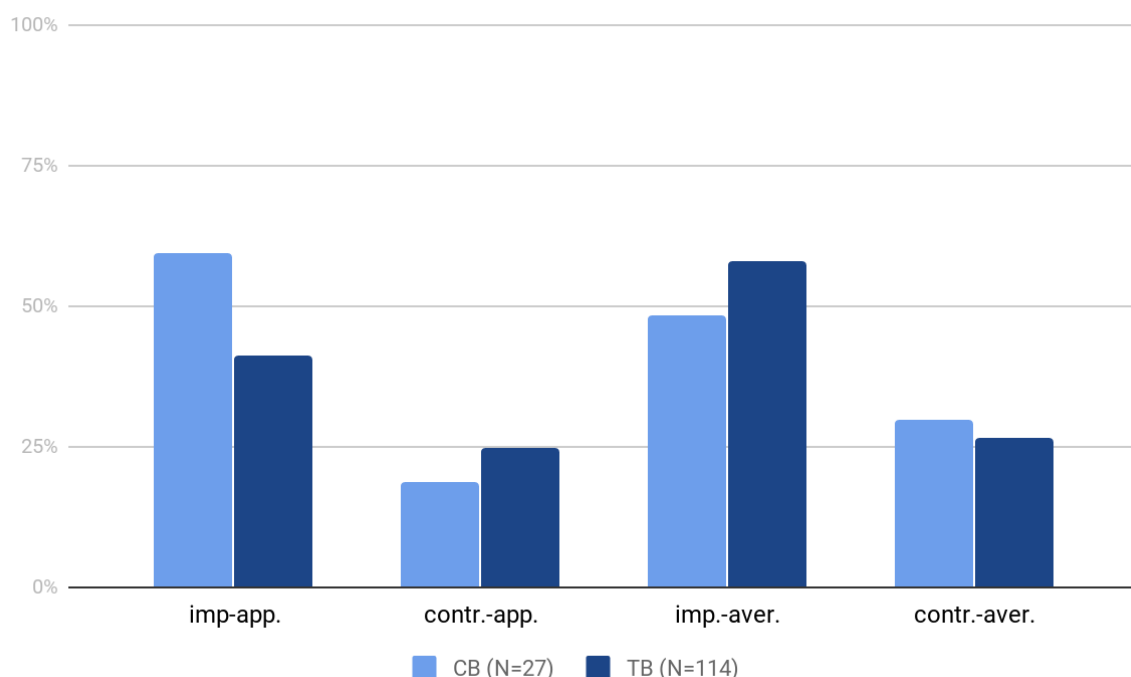
Note. imp.=impulsive, app.=appetitive, contr.=controlled, aver.=aversive.

7.1.2. Comparison of the motives with *t*-tests. In the following section the sum scores for each motive described in section 6.3. will be compared with *t*-tests across the cyber and traditional setting for each subgroup of aggressors and bullies. These sum scores represent the rate at which a motive was named. Since the sample was partially overlapping paired-sample *t*-tests were calculated for combined aggressors and combined bullies. For pure aggressors and pure bullies independent sample *t*-tests were conducted. The level of significance is indicated by the *p*-values in the following sections. A *p*-value of $p<.05$ means that the difference between the groups was significant. The smaller the *p*-value is the higher is the level of significance. With a *p*-value of $p<.001$ a difference is considered highly significant.

For combined aggressors (*N*=277), every participant that answered at least one bullying behavior question in the cyber and one in the traditional setting with 'yes' was included into the following calculation. There was a significant difference in the scores for the impulsive-appetitive motives of combined aggressors in the cyber

setting (*M*=.25, *SD*=.25) and traditional setting (*M*=.15, *SD*=.21) conditions; *t*(276)=6.16, *p*<.001. With a *p*-value of .01 the controlled-appetitive motive of combined aggressors was also significantly different between the cyber setting (*M*=.08, *SD*=.16) and the traditional setting (*M*=.11, *SD*=.18); *t*(276)=-2.59. An other significant difference was found for the impulsive-aversive motive of combined aggressors between the cyber setting (*M*=.24, *SD*=.24) and the traditional setting (*M*=.33, *SD*=.26); *t*(276)=-5.292, *p<.001*. The difference for the controlled-aversive motive between the cyber setting (*M*=.14, *SD*=.23) and the traditional setting was significant as well (*M*=.17, *SD*=.24); *t*(276)=-1.94, *p*=.05 (see *Table 2*).

Table 2. Paired-sample *t*-tests for combined aggressors.

	Traditional setting		Cybersetting		
	M	*SD*	*M*	*SD*	*t*-test
impulsive-appetitive	.15	.21	.25	.25	6.16 ***
controlled-appetitive	.11	.18	.08	.11	-2.59 **
impulsive-aversive	.33	.26	.24	.24	-5.29 ***
controlled-aversive	.17	.24	.14	.23	-1.9 *

Note. Levels of significance for the difference in motive nominations between the settings: **p*<.05, ***p*<.01, ****p*<.001.

T-tests for independent samples were conducted for participants that were aggressors in either only the traditional setting (*N*=130) or the cyber setting (*N*=26). There was a significant difference in the scores for the impulsive-appetitive motive of pure cyber aggressors (*M*=.27, *SD*=.27) and pure traditional aggressors (*M*=.09, *SD*=.20); *t*(30.86)=3.28, *p*=.003. Variance homogeneity was not given for the impulsive-appetitive motive as determined by the levene-test for variance-homogeneity. With a *p*-value of *p<.001* for the difference between the scores for the impulsive-aversive motive of pure cyber aggressors (*M*=.19, *SD*=.30) and pure traditional aggressors the difference can be described as significant (*M*=.42, *SD*=.27); *t*(154)=-3.91, *p<.001*. In contrast, no significant difference was

found for the controlled-aversive motive of pure cyber aggressors (*M*=.13, *SD*=.22) and pure traditional aggressors (*M*=.15, *SD*=.25) conditions; *t*(154)=-.52, n.s. None of the pure cyber aggressors named the controlled-appetitive motive as a reason for aggressing, therefore no *t*-test could be calculated for this motive (see *Table 3*).

Table 3. Independent sample *t*-tests for pure traditional and pure cyber aggressors.

	Traditional setting		Cybersetting		
	M	*SD*	*M*	*SD*	*t*-test
impulsive-appetitive	.09	.20	.27	.27	3.28 **
controlled-appetitive	.09	.19	/	/	/
impulsive-aversive	.42	.27	.19	.30	-3.91 ***
controlled-aversive	.15	.25	.13	.22	-.52 n.s.

Note. Levels of significance for the difference in motive nominations between the settings: **p<.05, **p<.01, ***p<.001.*

77 people were classified as combined bullies. Paired sample *t*-tests were calculated to compare motives across settings. There was only a significant difference for the controlled-appetitive motive between the cyber (*M*=.07, *SD*=.15) and the traditional setting (*M*=.16, *SD*=.24); *t*(76)=-3.56, *p*=001. Hence there was no significant difference between the impulsive-appetitive motive between the cyber (*M*=.31, *SD*=.30) an the traditional setting (*M*=.26, *SD*=.27); *t*(67)=1.33, n.s. Between the impulsive-aversive motive in the cyber (*M*=.25, *SD*=.31) and traditional setting (*M*=.26, *SD*=.23); *t*(76)=-.37, n.s. and the controlled-aversive motive in the cyber (*M*=.18, *SD*=.27) and the traditional setting (*M*=.23, *SD*=.30); *t*(76)=-1.35, n.s. no significant difference could be found as well (see *Table 4)*.

Table 4. Paired-sample *t*-tests for combined bullies.

	Traditional setting		Cybersetting		
	M	*SD*	*M*	*SD*	*t*-test
impulsive-appetitive	.26	.27	.31	.30	-1.33 n.s.
controlled-appetitive	.16	.24	.07	.15	-3.56 **
impulsive-aversive	.26	.23	.25	.31	-.37 n.s.
controlled-aversive	.23	.30	.18	.27	-1.35 n.s.

Note. Levels of significance for the difference in motive nominations between the settings: **p*<.05, ***p*<.01, ****p*<.001.

Independent sample *t*-test were calculated to compare motives between settings for pure cyberbullies (*N*=27) and pure traditional bullies (*N*=114). There was no significant difference in the scores for the impulsive-appetitive motive of pure cyberbullies (*M*=.28, *SD*=.27) and pure traditional bullies (*M*=.22, *SD*=.30); *t*(139)=.925, n.s. Between the scores for the controlled-appetitive motive of pure cyberbullies (*M*=.11, *SD*=.24) and pure traditional bullies (*M*=.11, *SD*=.20) no significant difference could be detected; *t*(139)=.10., n.s. In contrast, the difference in the scores for the impulsive-aversive motive of pure cyberbullies (*M*=.19, *SD*=.23) and pure traditional bullies (*M*=.36, *SD*=.35) was significant; *t*(58.78)=-3.00, *p*=.004, variance homogeneity was not given. No significant difference was found for the controlled-aversive motive of pure cyberbullies (*M*=.16, *SD*=.27) and pure traditional bullies (*M*=.12, *SD*=.23); *t*(139)=-.52, n.s. (see *Table 5*).

Table 5. Independent sample *t*-tests for pure traditional and pure cyberbullies.

	Traditional setting		Cybersetting		
	M	*SD*	*M*	*SD*	*t*-test
impulsive-appetitive	.22	.30	.28	.27	.925 n.s.
controlled-appetitive	.11	.20	.11	.24	.10 n.s.
impulsive-aversive	.36	.35	.19	.23	-3.00 **
controlled-aversive	.12	.23	.16	.27	-.52 n.s.

Note. Levels of significance for the difference in motive nominations between the settings: *p<.05, **p<.01, ***p<.001.

7.2. Results for sensation seeking and aggression. To evaluate whether there is a positive relationship between sensation seeking and aggressive behavior in the traditional context as well as a positive relationship between sensation seeking and aggressive behavior in the cyber context two linear multiple regressions were calculated. Predictors got included into the modell via backwards elimination, since it has a lower risk of making a type II error and is therefore better suited for exploratory research. Data was analysed for the entire sample for aggressive behavior. In both linear multiple regressions sensation seeking was the dependent variable. In one aggressive behavior in the cyber setting, in the other aggressive behavior in the traditional context was an independent variable. In both multiple linear regressions the variables age, sex, gaming and social media use were included as covariates.

Sensation seeking (β=.244, t(462)=5.507, *p<.001*) and sex (β=.126, t(462)=2.929, *p*=.004) predicted aggressive behaviour in the traditional setting significantly. Participants with higher sensation seeking scores as well as males displayed more aggressive behaviors in the traditional setting. Sensation seeking explained a significant portion of the variance in aggressive behavior in the traditional context ($R^2_{adj.}$=.196, F(2.927)=14.949, *p<.001*). Furthermore, age (β=-.027, t(462)=-3.549, *p<.001*) and social media use had a small predictive value (β=.083, t(462)=1.767, *p*=.078). Gaming (β=.034, n.s.) was no predictor for aggression and therefore got excluded from the final model (*Table* 6).

Table 6. Multiple linear regression results with aggressive behavior in the traditional context as independent variable.

	B	*SE*	β
Model 1			
constant	1.115	.185	
age	-.026	.008	-.157***
sex	.110	.048	.117**
social media use	.027	.016	.080
gamer	.013	.015	.037
sensation seeking	.210	.038	.248***
Model 2			
constant	1.144	.181	
age	-.027	.008	-.163***
sex	.126	.043	.134**
social media	.028	.016	.083
sensation seeking	.207	.038	.244***

Note. $R^2_{adj.}$=.107 for model 1, $R^2_{adj.}$=.108 for model 2, Levels of significance: *p<.05, **p<.01, ***p<.001.

Sensation seeking (*β*=.178, *t*(462)=3.990, *p<.001*) predicted aggressive behaviour in the cyber context significantly. Participants with higher sensation seeking scores displayed more aggressive behavior. Sensation seeking explained a significant portion of the variance in aggressive behavior in the cyber context ($R^2_{adj.}$=.071, *F*(.883)=12.373, *p*<.001). Furthermore, age (*β*=.005, *t*(462)=-2.974, *p*=.003), social media use (*β*=.152, *t*(462)=3.288, *p*=.001) and gaming (*β*=.175, *t*(462)=3.871, *p*<.001) had a small predictive value. Sex (*β*=.065, n.s.) was no predictor for aggressive behavior and therefore got excluded from the final model (*Table* 7).

Table 7. Multiple linear regression results with aggressive behavior in the cyber context as independent variable.

	B	SE	β
Model 1			
constant	.984	.112	
age	-.014	.005	-.142**
sex	.037	.029	.065
social media use	.033	.009	.166**
gamer	.031	.011	.146**
sensation seeking	.086	.023	.169***
Model 2			
constant	1.015	.109	
age	-.014	.005	-.140**
social media	.030	.009	.152**
gamer	.037	.009	.175***
sensation seeking	.090	.023	.178***

Note. $R^2_{adj.}$=.090 for model 1, $R^2_{adj.}$=.091 for model 2, Levels of significance: *p<.05, **p<.01, ***p<.001.

The regression coefficients were compared by calculating a Z-value with the formula suggested by Paternoster, Brame, Mazerolle, and Piquero (1998):

$$Z = \frac{b_1 - b_2}{\sqrt{SE_{b1}^2 + SE_{b2}^2}}$$

The calculated value was Z=6.686>1.96 and therefore significant. Thus it can be concluded, that there is a significant difference between the positive relationship of aggressive behavior in the traditional setting and sensation seeking and the positive relationship of aggressive behavior in the cyber setting and sensation seeking. While sensation seeking predicts both traditional and cyber aggression, the effect was stronger in the traditional setting (*B*=.207, *SD*=.038) then in the cyber setting (*B*=.09, *SE*=.023).

8. Discussion

The goal of this work was to compare motives for bullying across the offline and online settings based on the QVT model of Howard (2011) and to investigate sensation seeking as a potential risk factor for engaging in bullying behavior.

The most common motives by far were the impulsive motives for all groups. However the order of their importance varied between groups. The *impulsive-appetitive* motive *(entertainment)* was the most common and the *impulsive-aversive* motive *(rage)* was named second among pure cyberbullies and cyberbullies in general, if cyberbullies were not divided into pure and combined cyberbullies. Whereas the order of the motives was reverse for combined bullies and traditional bullies, with *rage* named first and *entertainment* second. The motives *controlled-appetitive (reward)* and *controlled-aversive (revenge)* were less relevant for bullying overall and only relevant for combined bullies in the traditional setting, as well as in the case of *revenge* also for combined bullies in the cyber setting. However, most differences for bullies were not significant. Therefore, differences in motives for bullies should be interpreted with caution. Pure traditional bullies aggressed significantly more often out of *rage* than their cyber counterparts and combined bullies displayed more *reward* oriented aggression in the traditional setting than in the cyber setting. With the exception of pure aggressors for the *revenge* motive and *reward* motive, significant differences were found for all motives for the underlying construct of aggression motivation. Only for the *entertainment* motive cyber aggressors had higher scores than their traditional counterparts. A larger sample size might reveal additional differences for the motives of bullies.

Additionally, the relationship between sensation seeking and bullying in both settings was examined with sensation seeking as a potential risk factor for engaging in aggressive behavior. Both, traditional and cyberbullying, were predicted by sensation seeking, with sensation seeking having a stronger predictive value for traditional bullying.

The following paragraphs will focus on the results for aggression motivation, ensuing the discussion of the results on the relationship between sensation seeking and aggression motivation. Furthermore, limitations of the current work and suggestions for future research are debated.

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8.1. Bullying and aggression motivation. To answer hypothesis H1 whether there are differences in the motives of cyberbullies and traditional bullies, the four motives of Howard's (2011) QVT model, impulsive-appetitive, controlled-appetitive, impulsive-aversive, controlled-aversive were compared across the traditional and cyber setting.

8.1.1. The Impulsive-aversive motive (rage). Significant differences were found for both groups of aggressors with the motive *impulsive-aversive aggression* being named more often by traditional aggressors. For both combined aggressors in the cyber and traditional setting the motive was the most important. Pure traditional bullies aggressed twice as often out of rage than their cyber counterparts. Furthermore, all groups of traditional bullies named the motive more often then the groups of cyberbullies. Therefore, hypothesis *H1a* is confirmed: *The impulsive-aversive motive is stronger among traditional bullies than among cyberbullies.* In contrast to the groups of aggressors the motive was second most important for combined bullies, compared to most important for combined aggressors and pure cyberbullies, which both named entertainment as their main reason for aggressing. This is in line with the findings from Gradinger et al. (2012) who also found that the *anger* motive was by far most important for pure traditional bullies. However, in their study pure cyberbullies and combined bullies named the *impulsive-aversive* motive most often. Additionally, the *impulsive-appetitive* motive was a very important motive for pure cyberbullies.

One of the reasons why the *impulsive-aversive* motive or reactive-aggression in the proactive-reactive model is the most important motive for pure traditional bullies and also very relevant for the other groups of cyber and traditional bullies might be the wish to maintain a perception of oneself as a good person by using a self-serving attributional style. Bullies that act out of rage often claim that they had been provoked by the victim, thereby perceiving themselves as the real victims and justifying their aggression as retaliation (Avilés, 2006). Dodge (1980) found that children who attribute hostile attentions to ambiguous situations reacted more often aggressively than children who attributed benign intentions. This means that reactive aggression often occurs because of misinterpreted interactions. In the cyber setting

missing social cues can increase the potential for misunderstandings (Kato, Kato, & Akahori, 2007). This can explain why the impulsive-aversive motive is also very important in the cyber context.

8.1.2. *The impulsive-appetitive motive (entertainment).* The *impulsive-appetitive* motive was the most important motive for cyber aggressors and cyberbullies. After splitting cyber aggressors into pure cyber aggressors and combined aggressors and cyberbullies into pure cyberbullies and combined bullies, the impulsive-appetitive motive was by far the most important motive for pure cyberbullies and pure cyber aggressors. It was also named most often by combined bullies in both the traditional and cyber setting. Cyber aggressors named the motive significantly more often than their traditional counterparts. However, for bullying no significant differences between cyberbullies and traditional bullies were found. Therefore *H1b: 'Impulsive-appetitive motives are stronger in the cyber context.'* can be confirmed for cyber aggressors but not for cyberbullies.

Gradinger et al. (2012) found similar results. Fun was the most relevant motive for combined bullies in their study as well. However, the motive was only the second highest for pure cyberbullies in their study compared to the highest in this work. Furthermore, *entertainment* was the second most important motive for pure traditional bullies in this work, whereas in their study pure traditional bullies rarely mentioned the motive. A reason for the differences in findings between their study and this work could be that they measured cyberbullying with only one item, while in this work a variety of cyberbullying behaviors were accessed with eleven items. Therefore, behaviors that were associated with fun-seeking might not have been associated with the question surveying cyberbullying in the study of Gradinger et al.

One reason why cyber aggressors and cyberbullies named the *impulsive-appetitive* motive more often than traditional bullies could be that cyberbullying has been linked to aggressive humor. This form of humor is used to entertain oneself by humiliating and angering peers (Martin et al., 2003; Sari, 2016). Furthermore, the innate characteristics of the cyber setting like lack of social cues, anonymity and lack of consequences might promote spontaneous aggression for entertainment purposes. Cyberbullies often report that they were just joking (Betts &

Spenser, 2017) which shows a lack of empathic understanding for their victims (Steffgen et al., 2011). Anonymity and the lack of consequences can have a disinhibiting effect on potential perpetrators (Dooley et al., 2009; Patchin & Hinduja, 2006; Suler, 2004).

Appetitive aggression has been described as part of the human nature by Elbert et al. (2017). They say it is biologically driven and characterized by the gain of a positive affect and not limited to some extreme individuals. This might be an explanation why the *impulsive-appetitive* motive is so common among all groups in this work. Combined traditional bullies participating in both settings might be an indicator for adjustment problems. Kwak and Oh (2017) found that combined bullies were most aggressive, had been most exposed to prior violence, had the lowest degree of self-control and less social support than other groups of bullies or than people that were un-involved in bullying. Furthermore, the *impulsive-appetitive* motive has often been regarded as a main motive for violent offenders (Gudjonsson & Sigurdsson, 2007).

8.1.3. The controlled-aversive motive (revenge). The *controlled-aversive* motive was named second most often for all groups of traditional aggressors and third by all groups of cyber aggressors and all groups of bullies. Combined bullies in the traditional setting named the motive significantly more then their cyber counterparts. No additional effects were found for the motive. The *revenge* motive was more relevant to combined bullies than pure bullies.

8.1.4. The controlled-appetitive motive (reward). The *controlled-appetitive* motive, the analog to proactive aggression, was named least often by all groups and was only relevant for combined bullies in the traditional setting. All groups of traditional aggressors and traditional bullies named this motive more often than their cyber counterparts. The difference between the settings for combined aggressors, aggressors overall as well as for combined bullies was significant, however not for pure bullies or pure aggressor. Combined bullies in the traditional setting displayed significantly more *reward* oriented aggression than combined bullies in the cyber setting.

Gradinger et al. (2012) distinguish 'power' and 'affiliation' which both fall under the '*reward*' category in Howard's model. They found that, while they were named comparatively seldom by pure bullies, they were relevant motives for combined bullies even though not their main motives. However, they did not distinguish whether the motives were relevant for combined bullies in the traditional or cyber setting. In the study of Compton et al. (2014) students, parents and teachers believed the gain of power and status, which both fall under the *reward* category in the QVT model, to be the most important motives for traditional bullying, but not relevant for cyberbullying. Indeed, the *reward* motive was not relevant for cyberbullies in this work, however it was by far not the most important motive for traditional bullies either. It was named least often for all groups of aggressors and bullies and was only relevant for combined bullies in the traditional setting.

A reason why combined bullies in the traditional setting named the controlled-appetitive motive more often than other groups might be that they have learned to view aggression as a valid tool to get what they want. Proactive aggression is associated with positive outcome expectations. In many cases it is learned from family or peer role models (Dodge et al., 1997). Another explanation might be that instrumental aggression is often used by adolescents to impress peers and gain social status. Stoiber and Schäfer (2013) found that bullies had the highest control over resources within their class which in turn gave them social recognition from their peers.

8.2. Sensation seeking and bullying. In order to investigate the relationship between sensation seeking and bullying, all participants were included in the evaluation so that the whole spectrum of sensation seeking and aggression could be mapped. As hypothesized, in H2a sensation seeking predicted both aggressive behavior in the traditional setting and the cyber setting significantly, with higher scores of sensation seeking predicting more aggressive behavior.

In the traditional setting sensation seeking and sex had a significant predictive value for aggressive behaviour meaning participants with higher sensation seeking scores as well as males displayed more aggressive behaviors. Furthermore, age and social media use (n.s.) had a small predictive value. Gaming was no predictor for

aggression. Antoniadou et al. (2016) found a positive correlation between traditional bullying and several dimensions of sensation seeking namely experience seeking, disinhibition and boredom susceptibility. However, Kelly et al. (2018) did not find a connection between traditional bullying perpetration and sensation seeking when using the Substance Use Risk Profile Scale (SURPS). Furthermore, sensation seeking and impulsivity are highly correlated (Steinberg et al., 2008). Impulsive motives for traditional bullying could be an explanation for a high correlation of traditional bullying and sensation seeking. Kwak and Oh (2017) found that impulsivity was one of the main predictors for traditional bullying. 77% of the traditional aggressors and 57% of the traditional bullies in my study named the impulsive-aversive motive as a reason for engaging in traditional bullying. 40% of the traditional aggressors and 50% of traditional bullies naming impulsive-appetitive aggression. Especially the close resemblance of sensation seeking and the impulsive-appetitive motive, which even though more common in the cyber context, was still the second most important motive for traditional bullying (only third for traditional aggressors), could explain why sensation seeking predicted cyberbullying significantly. For example Howard (2011) discovered a positive correlation between sensation seeking and impulsive-appetitive aggression.

Sensation seeking predicted aggressive behaviour in the cyber context significantly. Participants with higher sensation seeking scores displayed more aggressive behaviors. Furthermore, age, social media use and gaming had a small predictive value. Sex was no predictor for cyber aggression. This is in line with previous research. Antoniadou et al. (2016) found a positive correlation between cyberbullying and the subdimensions of sensation seeking boredom susceptibility and in an earlier study also experience seeking (Kokinos et al., 2014). Furthermore, sensation seeking and impulsivity are highly correlated (Steinberg et al., 2008). Impulsive motives for cyberbullying could be an explanation for a high correlation of cyberbullying and sensation seeking. However Kwak and Oh (2017) did not find impulse control to be a predictor for cyberbullying. Nonetheless, impulsive motives were the most common in this work among both cyber aggressors and cyberbullies. 61% of the cyber aggressors and 47% of the cyberbullies engaged in cyber aggression for *impulsive-aversive* reasons. 52% of the cyberaggresors and 61% of

the cyberbullies named the *impulsive-appetitive* motive as a reason for engaging in cyberbullying. Especially the close resemblance of sensation seeking and the *impulsive-appetitive* motive, which was especially common in the cyber context, could explain why sensation seeking predicted cyberbullying significantly. Indeed Howard (2011) discovers a positive correlation between sensation seeking and the *impulsive-appetitive* motive.

A positive relationship of sensation seeking with aggressive behavior in the cyber setting, as well as a positive relationship with aggressive behavior in the traditional setting was found. These relationships of sensation seeking and aggressive behavior were significantly different from each other in the traditional and the cyber setting. This confirms H2b, which stated that there would be a difference between these two relationships. 20% of the variance in traditional aggression was explained by sensation seeking compared to 7% for cyber aggression.

Antoniadou et al. (2016) found that traditional bullies had higher scores of several subdimensions of sensation seeking than cyberbullies, with higher scores in experience seeking and disinhibition correlating with more traditional bullying behavior. Furthermore, they discovered that thrill and adventure seeking were negative predictors for cyberbullying. They suggest that cyberbullying may not arise because of sensation seeking but rather because of the ease for appetitive aggression and as a tool that allows retaliation. With 60% of the overall sample within this work displaying aggression in both settings and only 6% being pure cyber aggressors the significant prediction of cyber aggression by sensation seeking might arise from the co-occurence of cyber and traditional aggression in the huge portion of the overall sample because of combined aggressors.

8.3. Limitations and future research suggestions. 215 (46.44%) participants attended the survey in their schools, the rest of my sample consisted of voluntary participants. Voluntary samples are always biased because they are self-selected. This means that some people are more likely to fill out the questionnaire than others. For instance women are more likely to fill out an online-questionnaire than men (Cheung et al., 2017). In this work 86 girls compared to 16 boys participated in the questionnaire on facebook. The group of girls was in

general overrepresented so that recruiting male participants after the first month of inquiry was prioritized. The consequence of the self-selection in the voluntary sample of this work is that the prevalence rates of bullying could be overrepresented. Specifically for Austria and Germany the world health organization (WHO) finds in their international report from 2009/2010 perpetration rates for austrian children almost doubled from age 11 to age 15 from 12% to 23% being bullies. However, perpetration rate of 48% for traditional bullying in this sample is still twice as high (Currie et al., 2012). One reason why in this work the perpetration rates were so high could be that a huge variety of bullying behaviors in both context were assessed and fulfilling the repetition criterion in either of these behaviors was sufficient to be classified as a bully.

This work focused solely on bullies and their motivations. Hence no information was gathered whether participants had experienced bullying as a victim. Some researchers make the distinction between pure bullies, pure victims and so called bully/victims, that have both been perpetrators and victims, and uninvolved adolescents. Further research could evaluate Howard's QVT model and distinguish between this groups to see if bully/victims might have other underlying motives then pure bullies. In addition, motives could only be answered on a yes/no spectrum. Open answers might yield a clearer insight into the reasoning behind bullying behaviors.

Furthermore, a longitudinal study design would have given a better estimation if someone is a bully. This work only had a one time measurement. Participants had to recall their behavior of the last three months. The criterion for repetition was fulfilled when a participant was aggressive at least two times a months. With multiple measurement times repetition could be assessed more accurate.

8.4. Conclusion. The present work was conducted to compare the underlying motives for bullying in the traditional and cyber setting and to examine sensation seeking as a potential risk factor for engaging in traditional or cyberbullying.

Indeed differences between the motives in the cyber setting and the traditional setting were found. In both settings the impulsive motives were most relevant for all groups. The order of the impulsive motives however varied between groups. Pure

cyberbullies and cyberbullies in general, when no distinction was made between combined or pure cyberbullies, named the *impulsive-appetitive* motive most often, followed by the *impulsive-aversive* motive. The opposite order was found for combined bullies in both the traditional and cyber setting and traditional bullies. Less relevant for bullying were the *controlled-appetitive* and *controlled-aversive* motives. They were only relevant for combined bullies in the traditional setting and in the case of *controlled-aversive* aggression also for combined bullies in the cyber setting.

Sensation Seeking was a significant predictor for both traditional and cyber aggression. However, while sensation seeking explained 20% of the variance in traditional aggression it only explained 7% for cyber aggression. With 60% of the overall sample displaying aggression in both settings and only 6% being pure cyber aggressors the significant prediction of cyber aggression by sensation seeking might arise from the co-occurence of cyber and traditional aggression in the huge portion of the overall sample because of combined aggressors.

III Literature

Antoniadou, N., Kokkinos, C. M., & Markos, A. (2016). Possible common correlates between bullying and cyber-bullying among adolescents. *Psicología Educativa, 22*(1), 27-38. doi:10.1016/j.pse.2016.01.003

Avilés, J. M. (2006). Differences of causal attribution in bullying among participants. Electronic Journal of research in Educational Psychology, 9(4), 201-220. Retrieved from: http://www.investigacion-psicopedagogica.org/revista/new/english/index.php?9

Baier, D., Hong, J. S., Kliem, S., & Bergmann, M. C. (2018). Consequences of bullying on adolescents' mental health in Germany: Comparing face-to-face bullying and cyberbullying. *Journal of Child and Family Studies, 28*(9), 2347-2357. doi:10.1007/s10826-018-1181-6

Bannink, R., Broeren, S., van de Looij-Jansen, P. M., de Waart, F. G., & Raat, H. (2014). Cyber and traditional bullying victimization as a risk factor for mental health problems and suicidal ideation in adolescents. *PLoS ONE, 9*(4), e94026. doi:10.1371/journal.pone.0094026

Beckman, L., Hagquist, C., & Hellström, L. (2012). Does the association with psychosomatic health problems differ between cyberbullying and traditional bullying? *Emotional and Behavioural Difficulties, 17*(3-4), 421-434. doi:10.1080/13632752.2012.704228

Betts, L. B., & Spenser, K. A. (2017). "People think it's a harmless joke": Young people's understanding of the impact of technology, digital vulnerability and cyberbullying in the United Kingdom. *Journal of Children and Media, 11*(1), 20-35. doi:10.1080/17482798.2016.1233893

Brad, J. B., & Anderson, C. A. (2001). Is it time to pull the plug on the hostile versus instrumental aggression dichotomy? *Psychological Review, 108*(1), 273-279. doi:10.1037//0033-295X.108.1.273

Camodeca, M., Goossens, F. A., Terwogt, M. M., & Schuengel, C.(2002). Bullying and victimization among school-age children: Stability and links to proactive and reactive aggression. *Social Development, 11*(3), 332-345. doi:10.1111/1467-9507.00203

Chein, J., Albert, D., O'Brien, L., Uckert, K., & Steinberg, L. (2011). Peers increase adolescent risk taking by enhancing activity in the brain's reward circuitry. *Developmental Science, 14*(2), F1-F10. doi:10.1111/j.1467-7687.2010.01035.x

Cheung, K. L., ten Klooster, P. M., Smit, C., de Vries, H., & Pieterse, M. E. (2017). The impact of non-response bias due to sampling in public health studies: A comparison of voluntary versus mandatory recruitment in a Dutch national survey on adolescent health. *BMC Public Health, 17*(1), 276. doi:10.1186/s12889-017-4189-8

Compton, L., Campbell, M. A., & Mergler, A. (2014). Teacher, parent and student perceptions of the motives of cyberbullies. *Social Psychology of Education, 17*, 383-400. doi:10.1007/s11218-014-9254-x

Currie, C., Zanotti, C., Morgan, A., Currie, D., de Looze, M., Roberts, C., Samdal, O., Smith, O. R. F., & Barnekow, V. (2012). *Social determinants of health and well-being among young people.* (Health Policy for Children and Adolescents, No. 6). Retrieved from: http://www.euro.who.int/__data/assets/pdf_file /0003/163857/Social-determinants-of-health-and-well-being-among-young-pe ople.pdf

Del Rey, R., Casas, J. A., Ortega-Ruiz, R. Schultze-Krumbholz, A., Scheithauer, H., Smith, P., …Guarini, A. (2015). Structural validation and cross-cultural robustness of the european cyberbullying intervention project questionnaire. *Computers in Human Behavior, 50*, 141-147. doi:10.1016/j.chb.2015.03.065

Del Rey, R., Elipe, P., & Ortega-Ruiz, R. (2012). Bullying and cyberbullying: Overlapping and predictive value of the co-occurrence. *Psicothema, 24*(4), 608-613. Retrieved from: http://www.psicothema.com

Dodge, K. A., & Coie, J. D. (1987). Social-information-processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology, 53*(6), 1146-1158. doi:10.1037/0022-3514.53.6.1146

Dodge, K. A., Lochman, J. E., Harnish, J. D., Bates, J. E., & Pettit, G. S. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *Journal of Abnormal Psychology, 106*(1), 37-51. doi:10.1037/0021-843X.106.1.37

Dodge, K. A. (1980). Social cognition and children's aggressive behavior. *Child Development, 51*(1), 162-170. doi:10.2307/1129603

Dooley, J. J., Pyżalski, J., & Cross, D. (2009). Cyberbullying versus face-to-face bullying. *Journal of Psychology, 217*(4), 182-188. doi:10.1027/0044-3409.217.4.182

Elbert, T., Moran, J., & Schauer, M. (2017). Lust for violence: Appetitive aggression as a fundamental part of human nature. *Neuroforum, 23*(2), 77-84. doi:10.1515/nf-2016-A056

Fluck, J. (2017). Why do students bully? An analysis of motives behind violence in schools. *Youth & Society, 49*(5), 567-587. doi:10.1177/0044118X14547876

Fortgesetzte Belästigung im Wege einer Telekommunikation oder eines Computersystems, Strafgesetzbuch §107c (1974 & Supp. 2016). Retrieved from: https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnor men&Gesetzesnummer=10002296

Frey, K. S., Cynthia, R. P., & Cohen, D. (2015). Revenge is seductive, if not sweet: Why friends matter for prevention efforts. *Journal of Applied Developmental Psychology, 37*, 25-35. doi:10.1016/j.appdev.2014.08.002

Gradinger, P., Strohmeier, D., & Spiel, C. (2012). Motives for bullying others in

cyberspace. A study on bullies and bully-victims in austria. In Q. Li, D. Cross & P. K. Smith (Eds.), *Cyberbullying in the Global Playground: Research from International Perspectives* (pp. 263-284). Chichester, U.K.: Wiley-Blackwell.

Gudjonsson, G. H., & Sigurdsson, J. F. (2007). Motivation for offending and personality. A study among young offenders on probation. *Personality and Individual Differences, 42*, 1243-1253. doi:10.1016/j.paid.2006.10.003

Hinduja, S., & Patchin, J. W. (2010). Bullying, cyberbullying, and suicide. *Archives of Suicide Research, 14*, 206-221. doi:10.1080/13811118.2010.494133

Howard, R. R. C. (2011). The quest for excitement: A missing link between personality disorder and violence? *The Journal of Forensic Psychiatry & Psychology, 22*, 692-705. doi:10.1080/14789949.2011.617540

Kato, Y., Kato, S., & Akahori, K. (2007). Effects of emotional cues transmitted in e-mail communication on the emotions experienced by senders and receivers. *Computers in Human Behavior, 23*, 1894–1905. doi:10.1016/j.chb.2005.11.005

Kelly, E. V., Newton, N. C., Stapinski, L. A., & Teesson, M. (2018). Prospective associations between personality and bullying among Australian adolescents. *Australian & New Zealand Journal of Psychiatry, 52*(2), 173-180. doi:10.1177/0004867417726583

Kokkinos, C. M., Antoniadou, N., & Markos, A. (2014). Cyber-bullying: An investigation of the psychological profile of university student participants. *Journal of Applied Developmental Psychology 35*, 204-214. doi:/10.1016/j.appdev.2014.04.001

Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin, 140*(4), 1073-1137. doi:10.1037/a0035618

Kwak, M., & Oh, I. (2017). Comparison of psychological and social characteristics among traditional, cyber, combined bullies, and non-involved. *School Psychology International, 38*(6), 608-627. doi:10.1177/0143034317729424

Martin, R. A., Puhlik-Doris, P., Larsen, G., Gray, J., & Weir, K. (2003). Individual differences in uses of humor and their relation to psychological well-being:

Development of the Humor Styles Questionnaire. *Journal of Research in Personality, 37*, 48-75. doi:10.1016/S0092-6566(02)00534-2

Olweus, D. (2003). A profile of bullying at school. *Educational Leadership, 60*(6), 12-17. Retrieved from: https://www.researchgate.net/publication /279570438_A_profile_of_bullying_at_school

Patchin, J. W., & Hinduja, S. (2006). Bullies move beyond the schoolyard: A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice, 4*, 148–169. doi:10.1177/1541204006286288

Patchin, J. W., & Hinduja, S. (2015). Measuring cyberbullying: Implications for research. *Aggression and Violent Behavior, 23*, 69–74 71. doi:10.1016/j.avb.2015.05.013

Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for equality of regression coefficients. *Criminology, 36*(4), 859-866. doi:10.1111/j.1745-9125.1998.tb01268.xi

Perren, S., Corcoran, L., Cowie, H., Dehue, F., Garcia, D., Mc Guckin, C., …Völlink, T. (2012). Tackling cyberbullying: Review of empirical evidence regarding successful responses by students, parents, and schools. *International Journal of Conflict and Violence, 6*(2), 283-293. doi:10.4119/UNIBI/ijcv.244

Raskauskas, J., & Stoltz, A. D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology, 43*(3), 564-575. doi:10.1037/0012-1649.43.3.564

Roth, M., & Hammelstein, P. (2012). The need inventory of sensation seeking (NISS). *European Journal of Psychological Assessment, 28*(1), 11-18. doi:10.1027/1015-5759/a000085

Runions, K. C. (2013). Toward a conceptual model of motive and self-control in cyber-aggression: Rage, revenge, reward, and recreation. *Journal of Youth and Adolescents, 42*, 751-771. doi:10.1007/s10964-013-9936-2

Runions, K., Shapka, J. D., Dooley, J., & Modecki, K. (2013). Cyber-Aggression and victimization and social information processing: Integrating the medium and the message. *Psychology of Violence, 3*(1), 9-26. doi:10.1037/a0030511

Runions, K. C., & Bak, M. (2015). Online moral disengagement, cyberbullying, and cyber-aggression. *Cyberpsychology, Behavior, and Social Networking, 18*(7),

400-405. doi:10.1089/cyber.2014.0670

Runions, K. C., Bak, M., & Shaw, T. (2017). Disentangling functions of online aggression: The Cyber-Aggression Typology Questionnaire (CATQ). *Aggressive Behavior, 43*, 74-84. doi:10.1002/ab.21663

Runions, K. C., Salmivalli, C., Shaw, T., Burns, S., & Cross, D. (2018). Beyond the reactive-proactive dichotomy: Rage, revenge, reward, and recreational aggression predict early high school bully and bully/victim status. *Aggressive Behavior, 44*, 501-511. doi:10.1002/ab.21770

Sari, S. V. (2016). Was it just joke? Cyberbullying perpetrations and their styles of humor. *Computers in Human Behavior, 54*, 555-559. doi:10.1016/j.chb.2015.08.053

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*(2), 147-154. doi:10.1111/j.1467-9450.2007.00611.x.

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*, 376-385. doi:10.1111/j.1469-7610.2007.01846.x

Steffgen, G., König, A., Pfetsch, J. S., & Melzer, A. (2011). Are cyberbullies less empathic? Adolescents' cyberbullying behavior and empathic responsiveness. *Cyberpsychology, Behavior, And Social Networking, 14*(11), 643-648. doi:10.1089/cyber.2010.0445

Steinberg, L. (2007). A social neuroscience perspective on adolescents risk-taking. *Developmental Review, 28*, 78-106. doi:10.1016/j.dr.2007.08.002

Steinberg, L., Albert, D., Cauffman, E., Banich, M., Graham, S., & Woolard, J. (2008). Age differences in sensation seeking and impulsivity as indexed by behavior and self-report: Evidence for a dual systems model. *Developmental Psychology, 44*(6), 1764-1778. doi:10.1037/a0012955

Stoiber, M., & Schäfer, M. (2013). Gewalt ist keine Lösung, aber eine coole Alternative?" - Was Täter bei Bullying so erfolgreich macht. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 62*(3), 197-213. doi:10.13109/prkk.2013.62.3.197

Suler, J., 2004. The online disinhibition effect. *CyberPsychology & Behavior 7*(3), 321-326. doi:10.1089/1094931041291295

Ttofi, M. M., Farrington, D. P., Lösel, F., & Loeber, R. (2011). Do the victims of school bullies tend to become depressed later in life? A systematic review and meta-analysis of longitudinal studies. *Journal of Aggression, Conflict and Peace Research, 3*(2), 63-73. doi:10.1108/17596591111132873

Willard, N. (2015). *Educator's Guide to cyberbullying and cyberthreats.* Washington, DC: U.S. Center for Safe and Responsible Use of the Internet. Retrieved from: https://education.ohio.gov/

Yeager, D. S., Trzesniewski, K. H., Tirri, K., Nokelainen, P., & Dweck, C. S. (2011). Adolescents' implicit theories predict desire for vengeance after peer conflicts: Correlational and experimental evidence. *Developmental Psychology, 47*(4), 1090-1107. doi:10.1037/a0023769

Zuckerman, M. (1979). *Sensation seeking: Beyond the optimum level of arousal.* Hillsdale, NJ: Lawrence Erlbaum Associates.

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Attachment A: Abstract

Abstract

It is still debated whether cyberbullying is a unique construct or a subform of traditional bullying. Therefore, the motives behind traditional bullying and cyberbullying will be compared with Howard's quadripartite typology of aggression (QVT). Furthermore, sensation seeking as a risk factor for engaging in bullying will be investigated and its predictive value compared across the two settings. 463 german speaking participants filled out an online self-report questionnaire covering (cyber)bullying behavior, aggression motivation and sensation seeking. Bullies were classified as either pure traditional (25%), pure cyber (6%) or combined bullies (17%). As expected, the *impulsive-appetitive (entertainment)* motive was the most important motive for cyberbullies, followed by *impulsive-aversive (rage)* and vice versa for traditional bullies. The *controlled-appetitive (reward)* and *controlled-aversive (revenge)* motives were only relevant for combined bullies in the traditional setting. Pure traditional bullies aggressed significantly more often out of *rage* than pure cyberbullies and combined bullies, displayed significantly more *reward*-oriented aggression in the traditional setting. When the repetition requirement for bullying was disregarded, significant differences were found for all motives for the underlying construct of aggression motivation. Only for the *impulsive-appetitive* motive, cyber aggressors had higher scores. As hypothesized, sensation seeking positively predicted aggressive behavior in both settings significantly with sensation seeking explaining 20% of the variance in traditional bullying (R^2adj.$=.196$) and 7% of the variance in cyberbullying (R^2adj.$=.071$). Sex explained 12% of the variance in traditional bullying with men being more aggressive. The predictive value of sensation seeking was stronger for traditional bullying than for cyberbullying.

Zusammenfassung

Es wird noch diskutiert, ob Cybermobbing ein einzigartiges Konstrukt oder eine Unterform des traditionellen Mobbing ist. Deshalb werden die Motive hinter traditionellem und Cybermobbing mit Howard's quadripartite typology of aggression (QVT) verglichen. Darüber hinaus wird Sensation Seeking als Risikofaktor für Mobbing untersucht und dessen prädiktiven Wert zwischen den beiden Settings verglichen. 463 deutschsprachige Teilnehmer füllten einen Online-Fragebogen aus, der (Cyber-)Mobbingverhalten, Aggressionsmotivation und Sensation Seeking abdeckte. Bullies wurden entweder als reine traditionelle (25%), reine Cyber- (6%) oder kombinierte Bullies (17%) eingestuft. Wie erwartet, war das *impulsiv-appetitive (Unterhaltung)* Motiv das wichtigste für Cybermobbing, gefolgt vom *impulsiv-aversiven (Wut)* und umgekehrt für traditionelle Bullies. Die Motive *kontrolliert-appetitiv (Belohnung)* und *kontrolliert-aversiv (Rache)* waren nur für kombinierte Bullies im traditionellen Setting relevant. Die folgenden Unterschiede waren signifikant: Reine traditionelle Bullies wurden signifikant häufiger aus *Wut* aggressiv als reine Cyberbullies und kombinierte Bullies zeigten signifikant mehr *belohnungs-orientierte* Aggressionen in der traditionellen Umgebung. Wenn das Kriterium der Wiederholung für Mobbing außer Acht gelassen wurde, wurden jedoch signifikante Unterschiede für alle Motive für das zugrunde liegende Konstrukt der Aggressionsmotivation gefunden. Nur für das *impulsiv-appetitive* Motiv hatten Cyber-Aggressoren höhere Werte. Wie erwartet sagte Sensation Seeking aggressives Verhalten in beiden Settings signifikant positiv voraus, 20% des traditionellen Mobbings (R^2adj.=.196) und 7% des Cybermobbings (R^2adj.=.071) konten durch Sensation Seeking erklärt werden. Das Geschlecht erklärte auch 12% der Varianz beim traditionellen Mobbing, wobei Männer aggressiver waren. Der prädiktive Wert von Sensation Seeking war stärker für traditionelles Mobbing als für Cybermobbing.

Introduction page

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Um das herauszufinden, stellen wir dir auf den nächsten Seiten ein paar Fragen. Ganz oben stehen immer ein paar Zeilen, bitte lies diese aufmerksam durch, dort stehen wichtige Infos!

Außerdem bitten wir dich, aus dem Bauch heraus und ehrlich zu antworten. Weil es kein Test ist, kannst du ganz entspannt sein: Es gibt kein Richtig oder Falsch! Das ganze wird nur ca. 10 Minuten dauern. Bitte achte auch darauf alle Fragen vollständig auszufüllen!

Keine Sorge, all deine Daten sind absolut anonym, das heißt, wir wissen nicht, von wem welche Antworten kommen. Das interessiert uns auch überhaupt nicht, sondern wir wollen wissen, was die Mehrheit der Jugendlichen und jungen Erwachsenen dazu zu sagen hat. Du hilfst uns daher noch mehr, wenn du den Link zu diesem Fragebogen an deine FreundInnen und Bekannten weiterschickst!

So, jetzt ist aber genug gesagt... Viel Spaß beim Ausfüllen!

Ich möchte diesen Fragebogen gewissenhaft ausfüllen!

Ja	Nein
○	○

Sensation seeking

Nun siehst du Aussagen, die deine Einstellungen, Handlungen und Gefühle betreffen.

Bitte lies dir jede Aussage sorgfältig durch und gib an, wie sehr diese Aussagen in den letzten 6 Monaten auf dich zugetroffen haben.

	fast nie	selten	manchmal	häufig	fast immer
Ich kenne das Gefühl, dass ich irgendwie aufgeputscht und stimuliert werden möchte.	○	○	○	○	○
Ich spüre gerne die Spannung in meinem Körper.	○	○	○	○	○

Sich völlig von der Umwelt abzuschotten, kann ein angenehmes Gefühl sein.	○	○	○	○	○
Ich bevorzuge starke und eindringliche Erlebnisse.	○	○	○	○	○
Es gibt Situationen, in denen kann ich gar nicht genug Eindrücke von außen bekommen.	○	○	○	○	○
Ich mag es, wenn ich die Grenzen meines Körpers austeste.	○	○	○	○	○
Ich mag es, starken Eindrücken ausgesetzt zu sein.	○	○	○	○	○
Ich mag es, einmal gar nichts zu tun und gar nichts zu erleben.	○	○	○	○	○
Ich mag es, mich aufgedreht oder aufgekratzt zu fühlen.	○	○	○	○	○
Ich kenne das Gefühl, dass ich zu viele Eindrücke von außen bekomme und mich zurückziehen möchte.	○	○	○	○	○
Ich mag es, einfach dazusitzen und die Ruhe zu genießen.	○	○	○	○	○
Ich brauche manchmal den „Kick" um mich wohlzufühlen.	○	○	○	○	○
Ich mag es, meinen Körper vor Aufregung zu spüren.	○	○	○	○	○
Ich habe es gerne, wenn ich voll „unter Strom" stehe.	○	○	○	○	○
Ich kann es genießen, wenn eine Weile einfach nichts passiert.	○	○	○	○	○
Ich mag es, in Ruhe auszuspannen.	○	○	○	○	○
Ich mag Situationen, in denen vor Aufregung mein Herz klopft.	○	○	○	○	○

Cyberbullying

Hast du in den <u>letzten 2 Monaten</u> absichtlich etwas <u>im Internet oder auf dem Handy</u> getan, das jemand anderes gemein finden könnte?

Bitte antworte ehrlich und spontan. Deine Antworten sind absolut anonym und wir wissen nicht, von wem die Antworten kommen.

	Nein	Ja, ein- oder zweimal	Ja, ein- oder zweimal im Monat	Ja, ungefähr einmal pro Woche	Ja, mehr als einmal pro Woche
Ich habe das Internet dazu genutzt, um zu anderen gemeine Dinge über jemanden zu sagen.	○	○	○	○	○
Ich habe einen gefälschten Account eingerichtet und mich als jemand anderen ausgegeben (z.B. auf Facebook, Twitter oder Instagram).	○	○	○	○	○
Ich habe jemanden in einem sozialen Netzwerk oder einem Chat ausgeschlossen oder ignoriert.	○	○	○	○	○
Ich habe das Internet dazu genutzt, um zu jemandem gemeine Dinge zu sagen oder um jemanden zu beschimpfen.	○	○	○	○	○
Ich habe persönliche Informationen über jemanden online gepostet.	○	○	○	○	○
Ich habe mich in einen fremden Account gehackt und mich als BesitzerIn ausgegeben.	○	○	○	○	○
Ich habe öffentliche Bilder oder Videos einer anderen Person bearbeitet und weiter verbreitet.	○	○	○	○	○
Ich habe jemanden im Internet bedroht.	○	○	○	○	○
Ich habe im Internet Gerüchte über jemanden verbreitet.	○	○	○	○	○
Ich habe peinliche Videos oder Bilder von jemandem online gepostet.	○	○	○	○	○
Ich habe mich in einen fremden Account gehackt und private Informationen gestohlen (z.B. Adresse, Handynummer, Geheimnisse etc.).	○	○	○	○	○

Example for motive for cyberbullying

Wieso hast du schonmal peinliche Videos oder Bilder von jemandem online gepostet?

Mehrfachantworten sind möglich.

- [ ] weil es aufregend war
- [ ] weil es Spaß gemacht hat
- [ ] weil ich zeigen wollte, dass ich stärker bin
- [ ] Um in einer Gruppe Anerkennung zu bekommen
- [ ] weil ich mich selbst bedroht fühlte und mich sofort abreagieren wollte
- [ ] weil ich so sehr geärgert wurde und mich sofort wehren wollte
- [ ] weil ich noch eine Rechnung zu begleichen hatte
- [ ] weil ich mich für etwas rächen wollte

Traditional bullying

Hast du in den letzten 2 Monaten absichtlich etwas im persönlichen Kontakt außerhalb des Internets getan, das jemand anderes gemein finden könnte?

Bitte antworte ehrlich und spontan. Deine Antworten sind absolut anonym und wir wissen nicht von wem die Antworten kommen.

	Nein	Ja, ein- oder zweimal	Ja, ein- oder zweimal im Monat	Ja, ungefähr einmal pro Woche	Ja, mehr als einmal pro Woche
Ich habe die Sachen von jemandem gestohlen oder beschädigt.	○	○	○	○	○
Ich habe jemanden ausgeschlossen oder ignoriert.	○	○	○	○	○
Ich habe jemanden geschlagen, getreten oder geschubst.	○	○	○	○	○
Ich habe jemanden bedroht.	○	○	○	○	○
Ich habe über jemanden hinter seinem Rücken schlecht geredet.	○	○	○	○	○
Ich habe gemeine Sachen zu jemanden gesagt oder jemanden beschimpft.	○	○	○	○	○
Ich habe Gerüchte über jemanden verbreitet.	○	○	○	○	○

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Example for motive for traditional bullying

Wieso hast du schonmal Gerüchte über jemanden verbreitet?

Mehrfachantworten sind möglich.

- [ ] weil es aufregend war
- [ ] weil es Spaß gemacht hat
- [ ] weil ich zeigen wollte, dass ich stärker bin
- [ ] Um in einer Gruppe Anerkennung zu bekommen
- [ ] weil ich mich selbst bedroht fühlte und mich sofort abreagieren wollte
- [ ] weil ich so sehr geärgert wurde und mich sofort wehren wollte
- [ ] weil ich noch eine Rechnung zu begleichen hatte
- [ ] weil ich mich für etwas rächen wollte

Demographic data:

Zum Schluss brauchen wir noch ein paar Infos von Dir!

Denk dran, deine Daten sind absolut anonym. Wir wissen nicht, von wem welche Antworten kommen.
Für uns ist es nur wichtig zu wissen, wie alt zum Beispiel die TeilnehmerInnen im Durchschnitt sind.

Wo bist du auf die Umfrage aufmerksam geworden?

Bitte wähle aus:	⌄

Alter

Geschlecht

- ○ Weiblich
- ○ Männlich
- ○ Keine Angabe

Ich lebe in

Österreich	Deutschland	der Schweiz	Woanders
○	○	○	○

Ich spreche zuhause hauptsächlich deutsch

ja	nein
○	○

Ich habe diese Umfrage gewissenhaft und ehrlich ausgefüllt!

Ja	Nein
○	○

Hier kannst du deine E-Mail-Adresse angeben, wenn du an der Verlosung teilnehmen willst!

[   ]

Dropdown: Where did you hear about the survey?

Wo bist du auf die Umfrage aufmerksam geworden?

Bitte wähle aus:
Bitte wähle aus:
Keine Angabe
Ein(e) FreundIn hat mir den Link geschickt
In der Schule
Verein
Facebook
Instagram
Twitter

| Youtube |
| Webseite |
| Forum |
| E-Mail |

Dropdown: Education/Profession

Bildung/Beruf

Bitte wähle aus:
Bitte wähle aus:
Ich gehe zur Schule
Ich mache eine Ausbildung
Ich bin Meister
Ich besuche eine Universität (Bachelor)
Ich besuche eine Universität (Master)
Ich besuche eine Universität (Doktorat)
Ich bin berufstätig (Angestellter)

| Ich bin berufstätig (Selbstständig) |
| Ich suche zur Zeit Arbeit |
| Keines |

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Thanks and request to forward the survey

VIELEN DANK FÜR DEINE TEILNAHME!

Du würdest uns unglaublich weiterhelfen, wenn du den Link zu unserer Studie an deine Freunde weiterschickst, auf deinen Social Media Seiten oder in Social Media Gruppen postest. Dafür musst du einfach nur folgenden Link kopieren:

https://ww3.unipark.de/uc/SenCyb/

Affidavit

I assure you that I have written the master's thesis without the help of others and without using any sources other than those indicated, and that the thesis has not yet been submitted in the same or a similar form to any other examination authority. All work that has been taken over word-for-word or in the sense of the word is marked as such.

Eidesstattliche Erklärung

Ich versichere, dass ich die Masterarbeit ohne fremde Hilfe und ohne Benutzung anderer als der angegebenen Quellen angefertigt habe, und dass die Arbeit in gleicher oder ähnlicher Form noch keiner anderen Prüfungsbehörde vorgelegen hat. Alle Ausführungen der Arbeit, die wörtlich oder sinngemäß übernommen wurden, sind als solche gekennzeichnet.

Vienna/ Wien,   Signature/ Unterschrift