Cyber Bullying in the Netherlands: A Criminological Perspective

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Abstract

It is assumed that the online world creates new possibilities for criminal behaviour. Only recently criminologists started the debate on the applicability of traditional criminological theories to cyber crime offending. Analyses based on a Dutch survey among 6,299 adolescents (50.9 % male), aged from 10 to 18 (M = 13.0, SD = 1.87) indicate that cyber bullying behaviour is not only strongly interwoven with traditional bullying behaviours, but also is affected by the distinct features of the online environment. The findings give support to the suggestion that the aetiological schema to explain cyber bullying should postulate the interaction between individual characteristics, distinct features of the online environment and the interaction between offline and online social realities.

Keywords: Cyber bullying, Adolescents, Cyber Crime, Criminological Theory, Interrelation Online Offline, Features Online Environment, Perspective of Youth.

Introduction

The internet has become a common and indispensable phenomenon in our society. At the same time, cyber crime generates a lot of media attention. Furthermore, reports on the prevalence of cyber crime appear regularly and the Dutch government prioritizes the tracking and prevention of cyber crime. The term 'cyber crime' refers to criminal and deviant behaviour through the use of online technologies (Wall, 2001; Yar, 2012). Cyber crime is, either implicitly or explicitly, conceptualized as the contemporary counterpart of traditional crime, i.e., crimes that occur only in the offline world (Taylor, Fritsch, Liederbach, & Holt, 2010). Studies on cyber crime predominantly focus on identifying the types and prevalence of cyber crimes and often lack a theoretical base. Studies on the applicability of criminological theories to cyber crime are scarce (McQuade, 2006; Taylor, Caeti, Loper, Fritsch & Liederbach, 2006). Anyone who studies cyber crime will eventually have to look in to theories in order to find an explanation for the findings. At the same time, research is necessary to test the applicability of criminological theories to cyber crime or, to further develop theoretical approaches (e.g., Bernard, 2002; Bottoms, 2000). Lately, criminologists have been debating whether existing criminological theories

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are useful for the explanation of cyber crime or whether the phenomenon requires novel theoretical explanations (Jaishankar, 2008). In essence, the question is whether cyber crime constitutes a new category of criminal behaviour (Yar, 2005; Jaishankar, 2008; Holt, 2013; Yar, 2012).

The Offline–Online dichotomy in relation to Cyber Crime

Researchers, politicians, and policy makers see the offline and online worlds as two separate worlds. The two are regarded as opposites, and characteristics attributed to the online world do not apply to the offline world: the transformation of time-space relationships, (perceived) anonymity, and the relative ease with which social identities can be manipulated (Yar, 2006). Of these characteristics, (perceived) anonymity is particularly connected with online disinhibition: in the online world people behave with fewer restrictions and inhibitions than in the offline world (Suler, 2004). With the arrival of the internet, a new world seems to have emerged: the online world, or cyber space. The question is, however, whether the offline-online dichotomy does justice to the complexity and interrelatedness of offline and online interactions. Subrahmanyam and Šmahel (2011) call attention to the immense development in the use of online technologies since the arrival of the internet and argue that the offline and online worlds are interwoven. Research also shows that online interactions of youth occur predominantly in the context of existing relationships (Livingstone, Haddon, Görzig, & Ólafsson, 2011) and that young people increasingly see their offline and online interactions as a coherent experience (Livingstone, 2009).

Researchers, politicians, and policy makers also use a dichotomy with respect to crime. Traditional crime takes place in the offline world, whereas cyber crime is committed using online technologies (Wall, 2001; Yar, 2012). There is no consistent definition of cyber crime; it is an overarching term that includes new forms of criminal behaviour – such as hacking – as well as digital forms of traditional crime (Stol, 2012).[3] In addition, online deviant behaviour - although not liable to punishment - is also seen as part of cyber crime; an often cited example is cyber bullying (Yar, 2012). For example, in the Dutch *Safety Monitor*, one of the four investigated cyber crimes is cyber bullying (Veiligheidsmonitor 2013, p. 75). Technology has always been used in criminal activities, but the definition and categorizing of a large variety of criminal and deviant behaviours on the basis of technology is new (McGuire, 2007). The question is whether cyber crime differs fundamentally from traditional crime or whether the arrival of the internet merely offers new options for criminal behaviour (Leukfeldt, Domenie, & Stol, 2010).

Cyber Crime and Criminological Theories

A relatively small number of studies on cyber crime have used existing criminological theories to explain the involvement in cyber crime. These studies are predominantly general theories of crime, such as the Routine Activity Theory (Cohen & Felson, 1979) and the General Theory of Crime (Gottfredson & Hirschi, 1990).

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[3]The term traditional crime similarly denotes a variety of very different criminal behaviours. Categorizing these behaviours is difficult, as is providing a definition of criminality: '*crime is as broad a category as disease, and perhaps as useless*' (Wilson & Herrnstein, 1985, p. 21).

Also, recently, criminologists have begun to debate whether existing criminological theories can be used to explain cyber crime (Grabosky, 2001; Yar, 2005; Jaishankar, 2008; Holt, 2013; Yar, 2012). In this debate, three positions are taken:

The first position is taken by Grabosky (2001), who states that cyber crime is in essence traditional crime committed with new technologies. According to Grabosky, existing theories can therefore be used to explain cyber crime. He refers specifically to the Routine Activity Theory of Cohen and Felson: essential for crime are the routine activities of individuals that bring together a motivated perpetrator and a suitable target in space and time in a situation where there is no effective supervision (1979).

Yar (2005) represents the second position in the debate. Yar also uses the Routine Activity Theory as the starting point for his analysis. Yar indicates that certain concepts from the Routine Activity Theory can be translated to cyber crime. The concept of the motivated perpetrator offline does not differ, for example, from the concept of the motivated perpetrator online. In the online world there is not always a meeting in space and time, however. One of the characteristics of the online world is, after all, the transformation of time-space relationships. Where differences in criminality between cities and rural areas can, for example, be explained on the basis of characteristics of these well-defined physical spaces, for cyber crime this is difficult. The online world simply cannot be divided into separate spaces according to these same definitions. The online world therefore differs from the offline world, and according to Yar this influences criminal behaviour. Yar comes to the conclusion that the explanation of cyber crime requires theoretical innovations.

The third and last position in the debate is taken by Jaishankar (2008, 2011). Arguing that existing theories are unsatisfactory, Jaishankar (2008) favours the development of novel criminological theories specifically for the explanation of cyber crime. For this purpose, Jaishankar (2008) developed the *Space Transition Theory,* a theory that stresses the interrelatedness of the online and offline worlds: individuals constantly 'move' from the offline world to the online world and back. One of the fundamental principles of *Space Transition Theory* is that criminal behaviour will transfer from one world to the other.

To summarize the three positions: Grabosky (2001) stresses that criminal behaviours offline and online are basically the same, while Yar (2005) focuses on differences between the online and offline worlds and therefore argues for theoretical innovation. Jaishankar (2008), stressing the interrelatedness of the online and offline worlds, favours theoretical development geared specifically toward the explanation of cyber crime.

Cyber Bullying

Since the advent of the internet two main forms of bullying have been distinguished: traditional bullying and cyber bullying. According to Olweus (1993), traditional bullying is a subcategory of aggressive behaviour directed at a person, characterized by repetition and an asymmetrical balance of power between the perpetrator and the victim. As part of the definition, the bullying behaviour should stem from cruel intentions (Olweus, 1993, 2010). Among researchers there is a broad consensus about the characteristics of traditional bullying as defined by Olweus: repetition, cruel intentions, and an imbalance of power (Smith, Del Barrio, & Tokunaga, 2013). For cyber bullying, there is no universally accepted definition, but the majority of definitions are based on the assumption that traditional bullying and cyber bullying are essentially the same: cyber bullying is bullying

where online technology is used (Veenstra, 2012). However, this assumption is subjected to criticism (see Olweus, 2012; Menesini, 2012).

Most research on traditional bullying and cyber bullying has been conducted from a psychological perspective. The prevalence of cyber bullying varies considerably, from 4% (Kowalski & Limber, 2007) to 29% (Ybarra & Mitchell, 2007). These variations are due mostly to differences in the definition and operationalization of cyber bullying (Tokunaga, 2010). The applicability of definitions and operationalisations to youth's own experiences has also been studied: when young people are asked to define bullying, they seldom incorporate Olweus' criteria in their definitions. Whether researchers use their own definition of bullying or whether the questions are phrased in such a way that youth are allowed to use their own interpretation of the term, influences the number of reported bullying behaviours (Vaillancourt, McDougall, Hymel, Krygsman, Miller, Stiver, et al., 2008). To explore the applicability of criminological theories on cyber crime, we took the perspective of youth rather than definitions of (cyber) bullying as a starting point.

Bullying is a behaviour that occurs offline as well as online. Research on offline and online bullying – or traditional bullying and cyber bullying – can provide insight into the question whether the arrival of the internet has led to a new group of perpetrators. To our knowledge, there are no studies 1) that examined whether perpetrators of criminal behaviour that occurs both online and offline differ from each other, and 2) that incorporated the interrelation between online and offline criminal behaviour in their analysis.

This study focuses on traditional bullying and cyber bullying and the relationship between both forms in order to examine whether the advent of the internet had led to a new type of perpetrator with specific characteristics or whether cyber bullying is in essence the same as traditional bullying but with new methods. The theoretical contribution of our study is somewhat paradoxical: the study of bullying perpetration serves as a case study to explore the applicability of criminological theories on cyber crime.

Specifically, this study aims to answer the following research questions: (1) what is the prevalence of traditional bullying, cyber bullying, and both forms of bullying occurring together?; (2) what are the differences and similarities between perpetrators of traditional bullying, perpetrators of cyber bullying and perpetrators of both traditional bullying and cyber bullying?; (3) to what extent are perpetrators of traditional bullying and cyber bullying also victims of traditional bullying and cyber bullying?; (4) to what extent are perpetrators of traditional bullying and cyber bullying also involved with other online problems?

To determine whether and to what extent perpetrators of traditional bullying and cyber bullying differ, we examined various characteristics considered in well-known criminological theories: socio-demographic characteristics (for example, sex), individual characteristics (for example, self-control) and social environment characteristics (for example, bond with peers). We also examined the disinhibiting influence of online technology on cyber bullying behaviour.

Methods

Sample and Procedure

For this cross-sectional study, data was used from *Youth & Cybersafety*, a 4-year Dutch research project on online victimization and perpetration among 6,299 youth aged 10 to

18 years (2009-2013) commissioned by the Dutch Ministry of Education, Culture and Science.[4] The research project *Youth & Cybersafety* was conducted by the *Cybersafety Research Group* of the *NHL University of Applied Sciences and the Police Academy* in the Netherlands. The questionnaire was developed on the basis of feedback from youth (n=25, divided over 4 focus groups) and tested in a pilot study (n=442) for validity and reliability and, to refine question wording, sequence and questionnaire length. In total, 6,433 participants filled in the online questionnaire. Validity checks for nonsensical answers resulted in the removal of 134 respondents of our dataset. The data-analysis was based on 6,299 completed questionnaires filled in by participants (51.2% male) attending primary school (29.3%) and secondary schools (70.7%). The age range of the sample was 11 to 18 years (*M* =13.0, *SD* =1.9). Data were collected between January 2011 and April 2011. Parental consent and youth assent were obtained before participation. The response rate of our study was 96.4%.

Participants were not directly recruited; we randomly sampled primary and secondary schools. Schools exclusively providing special or practical education were excluded from the sample, since pupils attending these schools require a different research approach. Schools were sent a letter asking them to participate in the *Youth & Cybersafety* research project. Twenty seven primary schools and seventeen secondary schools from three different levels – pre-vocational education, higher general secondary education and pre-university education participated. Each participating school received a report in which the findings from the school were compared with the overall findings. A detailed account of the recruitment and sampling procedures can be found elsewhere (Kerstens & Stol, 2012).

Table 1: Demographic Characteristics (N=6,299)

	N	% sample	% nationwide
Gender			
Boy	3,206	50.9	51.1
Girl	3,093	49.1	48.9
Age ⋆⋆			
(8-)10 years	545	8.7	12.9
11–12 years	2,091	33.2	25.3
13–14 years	2,370	37.6	24.4
15–16 years	1,041	16.5	24.8
17 years and older	252	4.0	12.6
Educational level ⋆⋆			
Lower pre-vocational	1,835	41.2	53.6
Higher general education	1,056	23.7	24.4
Pre-university education	1,562	35.1	22.0
Ethnicity ⋆⋆			
Natives	5,184	82.3	77.5
Immigrants	1,115	17.7	22.5

⋆⋆ *p*<0.01, significant difference between sample and national distribution

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[4] This research project was undertaken in accordance with the Code of Research established by the HBO-council (Andriessen, Onstenk, Delnooz, Smeijsters, & Peij, 2010).

Data were collected using an online survey. The questionnaire was filled in at school during class in the presence of researchers and supervisors. We redesigned classrooms in order to create privacy for each respondent. Each respondent was provided with a unique code making it impossible to link answers to identifying information of the participant. At the start of the questionnaire, participants were notified that: (1) the questionnaire would be about the Internet and bullying; (2) that the investigators had no chance to identify who had given the answers; (3) that they could stop at any point in time if they wished.

Participants aged 11 to 14 years were over-represented as well as participants attending pre-university education (Table 1). Furthermore, there is an under-representation of descendants of immigrants. Despite the large number of respondents, the sample is therefore not representative with respect to these characteristics.

Measures

The questionnaire included questions about (cyber) bullying and other Internet experiences, socio-demographic characteristics, social environment characteristics, Internet behaviour, parental mediation and, individual characteristics.

Prevalence of bullying perpetration was measured by asking youth whether they bullied someone in the past three months in school or in the street (traditional bullying) or via the internet or mobile phone (cyber bullying). Youth who indicated that they bullied online were also asked to specify what they did: gossip, call names, threaten, send upsetting messages, exclude someone on purpose, or distribute upsetting images or videos of the victim online. Response categories were rated from 1(*never*) to 5 (*several times a week*).

Social environment characteristics. Three social environment characteristics were included in the study: bond with parents, bond with peers and bond with school. Previous research indicates that these characteristics are related to delinquency and bullying behaviour (e.g., Junger–Tas, 1992; Ybarra & Mitchell, 2004). The bond with parents was measured using four items. The questions were based on a study by Junger–Tas, Steketee and Moll (2008) and a study by Van Rooij and Van den Eijnden (2007). The items were rated on a 5-point Likert scale from 1 (*never*) to 5 (*always*) (Cronbach's α=0.71). The bond with peers was measured using six items. The questions were based on the Dutch version of the *Inventory of Parent and Peer Attachment* (Armsden & Greenberg, 1987) used by Van Rooij and Van den Eijnden (2007). The items were rated on a 5-point Likert scale from 1 (*totally agree*) to 5 (*totally disagree*) (Cronbach's α=0.79). The bond with school was measured using one item. Participants were asked: How do you think about school? Response categories were rated from 1 (*negative*) to 3 (*positive*).

Online behaviour was measured in terms of frequency of Internet use, compulsive internet behaviour, and online disinhibition. Previous research indicates that these behaviours are related to cyber bullying perpetration (e.g., Hinduja & Patchin, 2008; Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008; Udris, 2014). *Frequency of Internet use* was measured by asking participants to indicate how many hours per day on average they were active on the Internet, varying from less than one hour per day to more than four hours per day. *Compulsive Internet behaviour* is the inability to control our own internet behaviour (Van den Eijnden, Spijkerman, Vermulst & Engels, 2008). It was measured using eight questions with a five-point Likert scale ranging from 1 (*never*) to 5 (*very frequently*)(Cronbach's α=0.81). The scale is based on the *Compulsive Internet Use Scale* (Meerkerk, 2007) and a scale that was developed by Lemmens, Valkenburg and Peter (2009), using criteria from DSM-IV-TR. *Online disinhibition* – the disappearance of social

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inhibitions on the internet – was measured using seven statements with a five-point Likert scale ranging from 1 (*totally agree*) to 5 (*totally disagree*)(Cronbach's α=0.85). The statements were based on studies on the online disinhibition effect (Suler, 2004) and a study by Schouten, Valkenburg and Peter (2007).

Parental mediation. Parental mediation refers to the interactions that parents have with youth about their media use (e.g., Nikken & Jansz, 2011). Although used slightly different in the media literature, this concept is related to one of the central concepts in The Routine Activity Theory (Cohen &Felson, 1979), namely effective guardianship, i.e., actions whose presence would discourage a crime from taken place. Previous research indicates that a higher level of parental monitoring in general is associated with a lower level of deviance, fewer delinquent behaviour problems in early adolescence and a decrease in the likelihood of being an online aggressor (Amato & Fowler, 2002; Pettit, Laird, Dodge, Bates, & Criss, 2001; Ybarra & Mitchell, 2004).We measured youth's perception of parental mediation by asking one question for each of the four basic strategies of parental mediation: supervision (parent is present while using the internet), restrictive mediation (parent sets rules), monitoring (parents checks records afterwards) and active mediation (parents communicates on Internet use and safety). The response categories were 0 (*never*), 1 (*sometimes*), 2 (*(almost) always*).

Psychosocial well-being refers to the self-image of youth: are they satisfied with their lives and with themselves? Previous research indicates that perpetration of cyber bullying can affect the psychological well-being of adolescents (Patchin & Hinduja, 2012). Psychosocial well-being was measured using twelve statements with a five-point Likert scale ranging from 1 (*totally agree*) to 5 (*totally disagree*) (Cronbach's α=0.85). The statements are based on research by Vandebosch, Van Cleemput, Mortelmans and Walrave (2006), which used the *Self-Description Questionnaire* by Ellis, March and Richards, as well as Gerson's *SHIELDS Questionnaire*.

Self-control. Self-control refers to the extent to which individuals are able to internally regulate their behaviour (Gottfredson& Hirschi,1990).Previous research indicates that a low level of self-control increases the risk of engaging in criminal and deviant behaviour (e.g., Pratt & Cullen, 2000). Self-control was measured using thirteen items. The statements were based on the 24-item scale developed by Grasmick, Tittle, Bursik and Arneklev (1993). The six sub-components of the original scale – impulsivity, preference for simple tasks, risk-taking behaviour, physical activities, self-centeredness, and temper – were represented. The items were rated on a 3-point Likert scale from 1 (*(almost) never*) to 3 (*often*) (Cronbach's α=0.74).[5]

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[5]As we created the questionnaire, a number of pragmatic decisions had to be made. First of all, the limitations with respect to the time that would be available to fill out the questionnaire (50 minutes) forced us to limit the number of items used to measure certain constructs. For example, Grasmick's self-control scale was shortened from 23 to 13 items. With this shortened version, we still managed to preserve all elements that measure low self-control, however. Other changes have to do with the wording of certain items. As we wanted to create items that were appropriate given the language abilities and cognitive level of youth in the targeted age range, some of the items were rephrased using more accessible language.

Results

a. Prevalence of Traditional Bullying and Cyber Bullying

Research question 1 asked: what is the prevalence of traditional bullying, cyber bullying, and both forms of bullying occurring together. Almost 15 percent of the participants acknowledged to have bullied offline in the three months prior to the study, while 5 percent said to have bullied online (Table 2). The percentage of youth that bullies offline is, therefore, 3 times as high as the percentage that bullies online.

Table 2: Prevalence of Traditional Bullying and Cyber Bullying (N=6,299)

	traditional bullying	cyber bullying
Once or twice during the past three months	11.1%	3.2%
Twice or three times a month	1.6%	0.5%
Once a week	0.7%	0.3%
Several times a week	1.3%	0.7%
Total	**14.7%**	**4.7%**

Traditional bullying and cyber bullying are related: 3.2 percent of the participants bully online as well as offline. The direction of the relationship is asymmetrical: of the online bullies, 2/3 also engages in offline bullying, while 1 in 5 of the offline bullies also bullies online. There are novel perpetrators as well: 1.4 percent of the participants engage exclusively in cyber bullying (Table 3). Of the online bullies, 24.6% admits to have bullied a person they did not know; in 75 per cent of the online bullying cases, the victim is known to the perpetrator. Usually, this person is known in the offline world (56.0%), but some victims are known exclusively through the internet (19.1%). Perpetrators predominantly are of the same sex and age as their victims. As with traditional bullying, cyber bullying also occurs within the context of existing social (offline) relationships.

Table 3: Size of Unique Groups of Perpetrators of Traditional Bullying and Cyber Bullying

	number (n)	percentage (%)
Is not a bully	5,279	83.8
Is bullying offline only	727	11.5
Is bullying online only	91	1.4
Is bullying both online and offline	202	3.2
Total	**6,299**	**100.0**

Traditional forms of bullying – with the exception of physical forms such as kicking and beating – migrate to the online world: gossiping, calling names, threatening, and excluding all have an online equivalent. The behaviours are: Placing a degrading text on the wall of a restroom at school changes in to placing a degrading text on a banga list[6] and excluding someone on purpose in the schoolyard changes into 'de-friending' someone on

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[6]Banga lists circulate on the internet and contain the names of girls who, according to the creators of the list, are readily available to have sex. In many cases, these lists are made up.

social network sites like Facebook. Apart from migration of traditional forms of bullying to the online world, new forms of bullying originate as well: uploading upsetting, sometimes manipulated, images or movies without consent. Online variants of traditional bullying occur most frequently. Forms of bullying that require online technologies are less frequent (Table 4).

**Table 4: Prevalence of variants of Online Bullying
(Sample Perpetrators of Cyber bullying)**

In the past three months, did you, via the internet or a mobile phone,...	
…spread cruel gossip about someone else?	63.8%
…call someone else names or threaten them?	53.2%
…purposefully exclude someone, for example in online games or on Facebook?	30.0%
…send someone upsetting messages?	21.2%
…post upsetting photos or videos of someone on the internet, without their knowledge?	18.8%

**Table 5: Prevalence of Bullying Behaviours by Gender, Age, Type of
Education, and Educational Level in Secondary Education**

	Is not a bully	Is bullying offline only	Is bullying online only	Is bullying both offline
Gender	★★	★★		
Boy	80.4%	14.8%	1.3%	3.5%
Girl	87.4%	8.2%	1.6%	2.9%
Age		★★		★★
12 years or younger	83.2%	13.2%	1.5%	2.1%
13-14 years	83.5%	11.3%	1.5%	3.7%
15–16 years	84.9%	8.9%	1.2%	4.9%
17 years or older	88.5%	6.7%	1.6%	3.2%
Education		★★		★★
Primary education	82.8%	14.0%	1.3%	1.9%
Secondary education	84.2%	10.5%	1.5%	3.8%
Educational level	★★	★★	★	★★
Lower pre-vocational	80.1%	12.4%	2.1%	5.4%
Higher general	84.3%	11.2%	1.0%	3.5%
Pre-university	89.1%	7.8%	1.2%	1.9%
Total (N=6,299)	**83.8%**	**11.5%**	**1.4%**	**3.2%**

★★ *p<0.01* chi-square, ★ *p<0.05* chi- square

Table 5 provides an overview of the prevalence of bullying behaviours by gender, age, type of education (elementary or secondary), and educational level in secondary education

(lower pre-vocational, higher general, and pre-university education). The first column shows that girls bully less often than boys and that participants attending pre-university education bully less than participants attending other levels of secondary education. Among youth who exclusively engage in traditional bullying behaviour, there is an overrepresentation of boys and elementary school pupils. As participants get older the frequency of traditional bullying behaviours, decreases. The third column of Table 5 shows that bullying behaviour via the internet or mobile phone occurs more frequently among participants attending lower pre-vocational education. Among youth who bully online as well as offline (fourth column), we again see an overrepresentation of participants attending lower pre-vocational education. As participants get older and attend secondary education, a combination of traditional bullying and cyber bullying becomes more frequent.

b. Characteristics of Perpetrators of Traditional Bullying and Cyber Bullying

Research question 2 asked what the differences and similarities are between perpetrators of traditional bullying, perpetrators of cyber bullying and perpetrators of both forms of bullying. A multinomial logistic regression was used to compare the profiles of the three groups of perpetrators with the group of non-perpetrators (Table 6). Participants who exclusively bully offline are generally boys and they are more often member of a non-traditional family.[7] Traditional bullying decreases as participants grow older. No significant relationship between bullying and socio-demographic characteristics was found for the other perpetrator groups.

Traditional bullies are more likely to have weaker bond with their parents; this also applies to those who bully offline as well as online. Those who bully offline as well as online also have a weaker bond with school, but they are more likely to have a stronger bond with peers. Possibly, these bullies use their bullying as a means to increase their status among peers (Salmivalli, 2010). Social environment characteristics are not significantly related to youth who bully exclusively online.

Youth who exclusively bully online indicate to feel less inhibited in an online environment. Not surprisingly, online disinhibition appears to be the strongest predictor of online bullying in this group. Online bullies also frequently use the Internet. Online disinhibition and frequency of Internet use is also significantly related to being an online bully and an offline bully as well. Parental mediation is not significantly related to perpetration of traditional bullying, cyber bullying and both forms of bullying. This suggests that parental mediation does not prevent bullying behaviours.

Finally, we found a strong relationship between low self-control and all forms of bullying. Acting on impulse, without regard for the possible consequences, was found particularly among youth who exclusively engage traditional bullying behaviour.

Summarizing, the analyses show that a low level self-control is significantly related to all forms of bullying perpetration. In comparison to the other perpetrator groups, youth who exclusively engage in cyber bullying do not have a very distinguishing profile. Socio-demographic characteristics and the bond with parents, peers and school are not significantly related to perpetration of cyber bullying. Frequency of Internet use and online disinhibition are significantly related to perpetration of cyber bullying, for those

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[7] Family situation was operationalized as: a tradition family consists of two parents/caregivers. All other families are labeled as non-traditional.

who exclusively engage in cyber bullying and those who engage in both forms of bullying as well.

Table 6: Profiles of Perpetrator Groups —
Results of Multinomial Logistic Regression
Reference Category Is: Neither Bullying Offline Nor Offline (N=5,279)

	Is bullying offline only (n=727)		Is bullying online only (n=91)		Is bullying both offline and online (n=202)	
	OR	95% C.I.	OR	95% C.I.	OR	95% C.I.
Socio-demographic characteristics						
Girl	0.57★	0.47–	1.28	0.81–	0.94	0.67–
Age	0.80★	0.75–	0.90	0.78–	0.95	0.86–
Family situation	0.75★	0.61–	1.10	0.63–	0.88	0.62–
Ethnicity	0.92	0.73–	0.86	0.49–	1.26	0.88–
Social environment characteristics						
Bond with peers	0.99	0.84–	0.79	0.54–	1.36★	1.04–
Bond with parents	0.81★	0.69–	1.01	0.69–	0.60★★	0.48–
Bond with school	0.99	0.86–	1.00	0.70–	0.75★	0.59–
Online behaviour						
Frequency internet	1.08★	1.02–	1.35★★	1.15–	1.37★★	1.23–
Online	1.09	0.97–	1.84★★	1.43–	1.85★★	1.55–
Parental mediation						
Parental supervision	0.90	0.75–	1.14	0.73–	1.08	0.77–
Restrictive	0.97	0.81–	1.43	0.89–	0.90	0.64–
Monitoring	0.98	0.89–	0.89	0.69–	0.96	0.81–
Active mediation	1.00	0.92–	0.95	0.77–	1.05	0.90–
Individual						
Psychological	0.84★	0.72–	1.10	0.74–	0.98	0.74–
Self-control	0.13★	0.10–	0.27★★	0.13–	0.09★★	0.06–

R^2= 0.21, χ=862.9

Note: N=6,299. Results of girls were compared with boys (reference group). ★ *p<0.05*, ★★ *p<0.01*

c. Relationships between Bullying and Being a Victim of Bullying

Research question 3 asked to what extent perpetrators of traditional bullying and cyber bullying are also victims of bullying. In total, one in five participants (20.3%) is a victim of traditional bullying (Table 7). The percentage of victimization among the three distinct perpetrator groups is approximately twice as high, respectively 40.3, 38.5 and 46.0 per cent. The percentage of victimization among those who are perpetrators of cyber bullying

– whether exclusively or not –is remarkably high, respectively 24.2 and 31.2 per cent. To summarize, there is a strong relation between traditional bullying and cyber bullying and, a strong relation between bullying perpetration and victimization.

Table 7: Prevalence of Victims of Bullying among Groups of Perpetrators and Non–Perpetrators (%)

	is not a bully	has bullied offline only	has bullied online only	has bullied both offline and online	total
Is bullied offline ★★	16.2	40.3	38.5	46.0	20.3
Is bullied online ★★	5.1	10.5	24.2	31.2	6.8

★★ *p*<0.01 (chi–square)

d. Relationships between Bullying and other Online Problems

Table 8: Prevalence of other (online) problems or high–risk internet behaviours (%)

	is not a bully	has bullied offline only	has bullied online only	has bullied offline &online	total
Compulsive Internet behaviour ★★	0.8	2.1	4.6	9.9	1.3
Has received online sexual requests and felt bothered ★★	5.3	8.8	20.9	11.4	6.1
Has posted sexy photos of him or herself online ★★	2.1	4.4	4.4	24.8	3.1
Has made sexual images or videos of others ★★	1.4	1.3	3.2	15.0	1.9
Has stripped in front of a webcam ★★	1.1	1.7	3.2	10.0	1.6
Has been a victim of commercial deceit or other types of confidence trick ★★	9.7	15.3	9.9	36.1	11.2
Has been a victim of online auction fraud ★★	4.7	6.6	4.4	14.4	5.2
Has been a perpetrator of online auction fraud ★★	2.3	4.1	6.6	16.8	3.1
Has been a victim of virtual theft [8] ★★	13.4	23.4	26.4	31.7	15.3
Has been a perpetrator of virtual theft ★★	8.0	16.4	24.2	38.6	10.2

★★ *p*<0.01 (chi–square)

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[8]In January 2012 the Dutch Supreme Court decided that virtual objects and pre-paid accounts can be stolen. Therefore, virtual theft is criminalized in the Netherlands.

Research question 4 asked to what extent perpetrators of traditional bullying and cyber bullying are also involved with other online problems (Table 8). Perpetrators of bullying are above-average involved in other online problems: they are 2 to 5 times more likely to report online problems, such as being a victim of online auction fraud or making sexual images or videos of others, than their non-involved peers. Especially perpetrators of both traditional bullying and cyber bullying more often report other online problems. In sum, perpetration of bullying is not an isolated phenomenon: it mostly occurs with other online problems.

Discussion

The current study examined whether the advent of the internet has created a new group of perpetrators – perpetrators of cyber bullying – with specific characteristics. Cyber bullies were compared with perpetrators of traditional bullying and those who display both types of bullying. The goal of this paper is to provide insight in to the applicability of existing criminological theories to the explanation of cyber crime.

1. Prevalence

Perpetration of cyber bullying occurs– in contrast to public perception – markedly less frequent than traditional bullying. This is in line with previous research (Smith, et al., 2008; Sticca, Ruggieri, Alsaker, & Perren, 2013; Williams & Guerra, 2007). There is a group that engages in traditional bullying as well as in cyber bullying, but our study does not provide insight into the temporal sequence of traditional bullying and cyber bullying. The overlap between traditional bullying and cyber bullying suggests that the means to bully – online technologies – are less important than the bullying itself. Also, cyber bullying is very similar to traditional bullying: generally, traditional forms of bullying are used online. Considering the fact that almost all youth are active on the Internet and that they predominantly engage in social interaction (Livingstone et al., 2011; Van Dijk, 2012), the percentage of perpetrators who exclusive engage in cyber bullying is relatively low. For the time being, the use of online technologies does not seem to coincide with the rise of a large group of youth who exclusively engage in cyber bullying. In summary, we conclude that the percentage of perpetrators of cyber bullying is relatively low, that traditional bullying is likely to be imported to the online environment and cyber bullying may be exported to the offline world and, that cyber bullying is, to a large extent, a variant of traditional bullying.

2. Differences and Similarities between the Perpetrator Groups

Multinomial regression analysis revealed that bullying behaviour is significantly related to having low self-control. This is in line with previous research (Nofziger, 2001; Unnever & Cornell, 2003). The relationship is not as strong for cyber bullying as it is for traditional bullying. This contradicts the self-control theory of Gottfredson and Hirschi (2003), which states that the social environment does not play a role in the explanation of criminal behaviour. The difference we found may have to do with the predominantly textual, less direct character of cyber bullying and the more physical and direct character of traditional bullying. The difference in the degree of self-control we found among different groups of perpetrators and the relation to the differences between face-to-face offline and technology-mediated online interactions is an interesting angle for future research.

The multinomial regression analysis further revealed that there is a strong connection between online disinhibition and cyber bullying. For perpetrators who exclusively bully online, online disinhibition is the strongest predictor of bullying behaviour. Our findings suggests that compared to traditional bullying, different dynamics might be operative for cyber bullying. Online disinhibition is related with specific characteristics of the online world and these characteristics therefore influence online behaviour. Suler (2004) explored six factors which interact and supplement each other and which give rise to online disinhibition: anonymity, invisibility, asynchrony, solipsistic introjection, dissociation and minimization of authority. In essence, these factors encourage or entice the individual to deviate from social norms and rules prevailing in the offline world. According to Suler (2004, p. 324) the susceptibility of individuals to online disinhibition varies. Little is known, however, about which individual characteristics, for example, self-control, are linked to the degree of susceptibility. Future research is needed to determine the relation between individual characteristics and disinhibited behaviour online.

3. Bullying in relation to being bullied and experiencing other problems

Our study revealed that youth who are a perpetrator of bullying are often a victim of bullying, both online and offline. The finding is in line with previous research (e.g., Patchin & Hinduja, 2012). Further, compared to youth who do not bully perpetrators more often report other online problems. This is in line with earlier research on traditional bullying and research on cyber bullying(e.g., Patchin & Hinduja; Von Marées & Petermann, 2012). Being a perpetrator of bullying thus is linked to being a victim, as well as experiencing other types of problems.

Conclusion

The evidence of this research indicates that Grabosky (2001), Yar (2005), and Jaishankar (2008) are all correct to some extent in their theories/perspectives about bullying behaviour: cyber bullying is predominantly a variant of traditional bullying (Grabosky), characteristics of the online environment influence cyber bullying (Yar), and the interaction between the offline and online worlds plays a role in bullying behaviour (Jaishankar). It appears that the online environment enables the extension but also the evolution of bullying behaviour, while simultaneously online behaviour is likely to alter or influence offline behaviour and vice versa. Further research is necessary to examine whether the results found for perpetration of bullying also apply to other forms of (interpersonal) cyber crime. The results of the current study indicate that integrating criminological theories can contribute to the explanation of cyber crime, a viewpoint that is also starting to find acceptance among criminologists dealing with traditional crime (e.g., Hay & Forrest, 2008).

Limitations

Although the current study utilized a large and diverse sample of youth, limitations must be noted. First, our data is cross-sectional which allowed us to identify relations between variables, but it did not allow us to investigate temporal sequence or causality. For example, a weaker bond with parents can lead to perpetration of bullying, but perpetration can also weaken existing bonds with parents. Second, the study employed a self-report questionnaire which infers the possibility of reporting bias to provide socially desirable responses. Third, the number of risk factors included in our study is limited. It is

quite possible that factors that were not included in our analysis may be able to account for perpetration of bullying. The limitations of this study necessitate further research on the perpetration of traditional bullying and cyber bullying and the relation between traditional bullying and cyber bullying.

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