

Cyberbullying: an explanatory analysis

Msc Community Safety, March 2009
University of Leicester
Department of Criminology
Sander Veenstra (089018990)
Date: 2011-02-09
Word count: 19.568

Acknowledgements

This study would not have been possible without the help of many. Therefore, I take this opportunity to thank those who have contributed to the successful completion of my dissertation. First of all, I would like to thank Mr Groot of primary school 'De Swetten', Ms Vas of secondary school 'Veluws College', Ms Adriaans and Ms van der Hoek of soccer club 'VV Drachten' for their help to organise the focus groups. Secondly, I would like to show my gratitude to primary school 'De Bron' and secondary school 'Singelland' for making it possible to conduct the survey. Especially, I would like to thank Ms Stuling, Mr van Helmont, Ms Van Loo and Ms Postma for their time and effort to make the survey possible within these schools. I also wish to thank Gavin Butler, my dissertation supervisor of the University of Leicester, for his motivating and reassuring guidance and feedback. Furthermore, I am indebted to my colleagues for their support: Wouter Stol, for motivating me and giving me the opportunity to study Community Safety at the University of Leicester; Joyce Kerstens, for your feedback on draft versions of my work and your help with the statistical analysis; Miranda Domenie, for the useful brainstorming on the criminological perspectives that underlie the study and for being my SPSS helpline during Christmas, and finally Rutger Leukfeldt, Jurjen Jansen and Marika Toutenhoofd, for your constructive criticism on draft versions of my work. I would also like to thank my family and close friends for their support and for lighting up my days. Last, but certainly not least, I thank my girlfriend Cindy for her unconditional love.

Abstract

As the internet is a popular medium among youth, concerns about cyberbullying are growing. By using existing criminological theories, this study aims to develop a better understanding of the causes of, and possible measures against, cyberbullying. For that purpose, four focus groups and a survey amongst a random sample of 456 Dutch children were conducted.

A combination of Rational Choice Theory and Self-Control Theory was used to explain cyberbullying perpetration. Rational Choice Theory states that deviant behaviour is the result of an assessment of costs and benefits whereby the benefits outweigh the costs. The findings support the theory: due to the low risks of bullying in cyberspace, cyberbullies feel free from restraints on their behaviour. To determine why some youth make the rational decision to cyberbully while others do not, Self-Control Theory was used. This theory assumes that engagement in deviant behaviour depends on a person's extent of self-control. Consistent with the theory, the results indicate that cyberbullies have less self-control than non-cyberbullies.

Routine Activity Theory (RAT) was used to explain victimization. According to the RAT, there has to be a convergence of likely offenders, suitable targets and an absence of capable guardians for deviance to occur. Firstly, the results indicate that motivated bullies are present in cyberspace. Furthermore, victims seem to be suitable targets: they spend significantly more time online and use Instant Messaging significantly more than non-victims. Finally, parents of victims are less capable to protect their children from cyberbullying than parents of non-victims. Therefore, this study seems to support the theory.

In conclusion, the criminological perspectives that underlie this study contribute to understanding the causes of cyberbullying. Moreover, the results indicate that parental mediation is essential to reduce cyberbullying.

Table of contents

Acknowledgements	2
Abstract	3
Table of contents	4
1. Introduction	6
2. Literature review	9
2.1 Forms of cyberbullying	9
2.2 Prevalence of cyberbullying	10
2.3 Causes of cyberbullying	11
2.4 Offender and victim characteristics.....	13
2.5 Effects of cyberbullying	15
2.6 Measures against cyberbullying	16
3. Research design: criminological perspectives.....	18
3.1 Research problem & aims	18
3.2 Research questions	18
3.3 Criminological perspectives on cyberbullying.....	19
4. Research methodology	23
4.1 Organizational setting	23
Methods	23
4.2 Literature review	23
4.3 Focus groups	24
4.4 Survey.....	25
4.4.1 Note regarding the organizational setting	25
4.4.2 Developing the questionnaire.....	25
4.4.3 Measures.....	26
4.5 Analysis	30
4.6 Survey participants	31
4.7 Ethics	31
5. Results	33
5.1 Offenders of cyberbullying	33
5.1.1 Nature and prevalence	33
5.1.2 Offender characteristics.....	34
5.1.3 The Rational Choice Hypothesis.....	37
5.1.4 The Self-Control Hypothesis.....	40
5.2 Victims of cyberbullying.....	45
5.2.1 Nature and prevalence	45
5.2.2 Victim characteristics	45
5.2.3 The Routine Activity Theory Hypothesis	48
5.2.4 Effects of cyberbullying	54
6. Discussion & Conclusion	56
6.1 Offenders	56
6.2 Victims	58
6.3 Measures against cyberbullying	61

6.4 Limitations	61
6.5 Final considerations.....	63
References	64
Appendices	Fout! Bladwijzer niet gedefinieerd.
Appendix A: approaching schools - letter and information brochure ..	Fout! Bladwijzer niet gedefinieerd.
Annex a1: a letter to approach the schools.....	Fout! Bladwijzer niet gedefinieerd.
Annex a2: information brochure	Fout! Bladwijzer niet gedefinieerd.
Appendix B: informing parents - a letter for parental consent.....	Fout! Bladwijzer niet gedefinieerd.
Appendix C: focus groups – topic list.....	Fout! Bladwijzer niet gedefinieerd.
Appendix D: questionnaire.....	Fout! Bladwijzer niet gedefinieerd.
Appendix E: plagiarism declaration	Fout! Bladwijzer niet gedefinieerd.

1. Introduction

For a long time, safety was only a matter of protection from dangers of the tangible world. However, at the end of the twentieth century ‘cyberspace’ emerged. Besides the fact that this new social structure (Stol, 2008) is used for plenty of good purposes, such as gathering information and communicating with friends, the internet also poses significant dangers. The internet is for example used to commit fraud, to disseminate child pornography or to harass others (Leukfeldt, Domenie and Stol, 2010).

The internet has become an increasingly popular medium among youth (e.g. van Rooij and Van den Eijnden, 2007; Kowalski, Limber and Agatston, 2008). Therefore, not only the opportunities, but the dangers of cyberspace apply to youth as well. Youth in particular use the internet for communicative purposes and, in addition, research indicates that the potential to interact with others in harmful ways while being online exists (e.g. Lenhart, Madden and Hitlin, 2005; Wing and Steeves, 2005). One of the emerging risks of communication on the internet for youth is cyberbullying (e.g. Wolak, Mitchell and Finkelhor, 2006; Ybarra, Diener-West and Leaf, 2007; Hinduja and Patchin, 2009).

Definitions of cyberbullying find their origin in definitions of traditional bullying. Prior to the emergence of cyberspace, bullying also occurred. The Norwegian scientist Dan Olweus has conducted numerous studies on ‘traditional’ bullying. He developed a definition for bullying that still forms the basis for a multiplicity of definitions used in scientific literature (e.g. Smith and Brain, 2000; Smith Cowie, Olafsson and Liefhoghe, 2002). According to Olweus (1993: 9), bullying can be defined as:

‘A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students... It is a negative action when someone intentionally inflicts, or attempts to inflict, injury or discomfort upon another.’

Olweus (1993, 1999) argues that bullying consists of three key elements: (1) the bullying has to be intended to hurt another person; (2) it has to occur repeatedly over time and (3) there has to be a power imbalance between the bully and the victim. These key elements return in definitions of cyberbullying. However, one element is added to definitions of cyberbullying: the bullying behaviour has to be conducted via ICT. Smith, Mahdavi, Carvalho, Fisher, Russell and Tipett (2008: 376), for example, define cyberbullying as: ‘an aggressive,

intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time, against a victim who cannot easily defend him or herself' (other examples: Hinduja and Patchin, 2009; Li, 2008; Mason, 2008; Shariff, 2008; Slonje and Smith, 2008; Smith *et al.* 2008; Vandebosch *et al.*, 2006; Williams and Guerra, 2007). In some studies, definitions are used that contain merely one or two of these elements. Patchin and Hinduja (2006: 152), for example, define cyberbullying as 'wilful and repeated harm inflicted through the medium of electronic text'.

Cyberbullying is said to be a significant problem that warrants serious attention within communities (e.g. Li, 2007; Kowalski and Limber, 2007; Walrave, Demoulin, Heirman and van der Perre, 2009; Wolak *et al.*, 2006; Williams and Guerra, 2007). In her study of almost 200 adolescents, Li concludes, for example, that 'the astonishing high percent of adolescents who had experienced cyberbully tactics observed in this study suggests that cyberbullying is becoming an increasingly critical problem for schools and the whole society' (2007: 1788). Moreover, Kowalski and Limber (2007: s29) state that: 'as children's use of electronic communications technologies is unlikely to wane in coming years, continued attention to electronic bullying is critical'.

The case of Holly Grogan, a 15-year-old girl from Cheltenham (UK) who committed suicide after abuse from Facebook bullies in September 2009 (Bird, 2009), illustrates the potential danger of cyberbullying. Moreover, research indicates that cyberbullying can have far-reaching consequences. A recent study amongst nearly 2000 middle-school pupils found that there is a connection between being a victim of cyberbullying and having suicidal thoughts (Hinduja and Patchin, 2010a). Furthermore, victimization of cyberbullying is found to be related with feeling depressed, feeling lonely, being stressed, being afraid and having a low self-esteem (e.g. Finkelhor, Mitchell and Wolak 2000; Hinduja and Patchin, 2009; Raskauskas and Stolz, 2007; Ybarra and Mitchell, 2004b).

Overall, cyberbullying seems to be a problem that warrants attention. As the literature review in chapter two illustrates, a considerable amount of research has already been conducted on cyberbullying. However, existing literature is merely descriptive: it does not explain why cyberbullying occurs. Therefore, this dissertation aims to, from a criminological perspective, contribute to understanding the causes of cyberbullying.

Guide to reading

The next chapter of this dissertation contains a literature review on cyberbullying. In addition, the third chapter describes the research design and criminological perspectives that underlie this study. The goal of chapter two and three is to provide the reasoning behind the study. Subsequently, chapter four provides a detailed description of the research methodology. In the fifth chapter, the results of this study are described. In the final chapter the reader will be provided with an interpretation of the results and their wider significance.

2. Literature review

In this chapter, the results of a literature review on cyberbullying are described. Since the introduction already discussed definitions of cyberbullying, these will be disregarded hereafter. Firstly, forms of cyberbullying will be briefly considered. Subsequently, the prevalence of cyberbullying is addressed. The third section describes what is known about the causes of cyberbullying. Next, the characteristics of cyberbullies and their victims and the effects of cyberbullying will be elaborated on. The final section is about measures against cyberbullying.

2.1 Forms of cyberbullying

In the literature, a wide variety of forms of cyberbullying are differentiated. Attempts are made to categorize these forms. Smith, Mahdavi, Carvalho and Tippet (2006) introduced a categorization which is based on the technological platform that is used to bully. A distinction is made between: text message bullying, picture/video clip bullying, phone call bullying, email bullying, chatroom bullying, bullying via instant messaging and bullying via websites. However, considering the continuous progression in technological developments, it is expected that this categorization will soon be outdated. Therefore, a categorization which is based on the behaviour of individuals is preferable (Ortega, Mora-Merchán and Jäger, 2007; Walrave *et al.*, 2009).

A commonly used categorization differentiates between direct and indirect forms of cyberbullying (Kowalski *et al.*, 2008; Raskauskas and Stolz, 2007; Van Rooij and Van den Eijnden, 2007; Vandebosch *et al.*, 2006; Walrave *et al.*, 2009). This distinction is derived from literature on traditional bullying (e.g. Stassen Berger, 2007). Direct cyberbullying is also called 'to my face bullying' (Walrave *et al.*, 2009: 27). It contains forms of cyberbullying in which the victim is directly involved. Victims, for example, repeatedly receive offensive messages or are excluded from social groups in cyberspace (Willard, 2007).

Indirect forms of cyberbullying can take place without direct involvement of the victim. These forms of cyberbullying are identified as 'behind my back bullying' (Walrave *et al.*, 2009: 27). The online spreading of gossip and rumours about a victim or the public posting of potentially embarrassing communications or images of victims in cyberspace are examples of forms of indirect cyberbullying (Willard, 2007).

It is beyond the reach of this literature review to summarize all forms of cyber bullying identified in the literature. The forms included in this study are described in the methodology chapter (section 4.4.3).

2.2 Prevalence of cyberbullying

A large number of studies have been conducted to determine the prevalence of cyberbullying. The literature suggests that the extent of cyberbullying victimization is worrying (e.g. Hinduja and Patchin, 2009; Li, 2007; Livingstone and Haddon, 2009; Wolak *et al.*, 2006). However, no unambiguous answer to the question what the extent of cyberbullying is can be presented here. Results of the analysis of over 30 studies on the prevalence of cyberbullying, presented below, illustrate this.

Percentages of the extent of cyberbullying victimization vary between 6 (Finkelhor *et al.*, 2000) and 72 (Juvonen and Gross, 2008) percent¹. Percentages of the extent of cyberbullying perpetration also vary widely. The lowest percentage found for cyberbullying perpetration is 4 percent (Kowalski and Limber, 2007), while the highest percentage found is 56 percent (Van Rooij and Van den Eijnden 2007). David Ferdon and Feldman Hertz (2007: s2) point to the fact that ‘the variety of terms used and the lack of a standardized operational definition make it extremely difficult to pool results and draw conclusions across the limited studies. This problem is further compounded by the lack of a gold standard to measure electronic aggression’. Thus, due to definitional and measurement impediments between the studies, it is very difficult to draw a clear picture of the exact extent of cyberbullying.

Nevertheless, some conclusions can be drawn. Firstly, the majority of cyberbullying incidents seem to be incidental rather than repetitive in nature (e.g. Cassidy *et al.*, 2009; Dehue, Bolman and Vollink, 2006; Juvonen and Gross, 2008; Li, 2008; Slonje and Smith, 2008; Van den Eijnden *et al.*, 2006; Walrave, Lennaerts and de Moor, 2009; Ybarra and Mitchell, 2007). Dehue *et al.* (2008), for example, found that 17.2 percent of their Dutch respondents (N=1211) were the victim of cyberbullying once or twice in the previous year.

¹ Studies included in the analysis: Cassidy, Jackson and Brown, 2009; Dehue, Bolman and Vollink, 2006; Qrius 2005, as cited in Delver, 2006; Finkelhor, Mitchell and Wolak, 2000; Hinduja and Patchin, 2008; Hinduja and Patchin, 2009; Juvonen and Gross, 2008; Kowalski and Limber, 2007; Lenhart, 2007; Li, 2006; Li, 2007; Li, 2008; Livingstone and Haddon, 2009; Patchin and Hinduja, 2006; Raskauskas and Stolz, 2007; Rinzema, 2008; Shariff 2008; Slonje and Smith, 2008; Smith *et al.*, 2006; Smith *et al.*, 2008; Van den Eijnden *et al.*, 2006; Van Rooij and Van den Eijnden, 2007; Vandebosch *et al.*, 2006; Wijngaards, Fransen and Swager, 2006; Williams and Guerra, 2007; Wolak, Mitchell and Finkelhor, 2006; Wolak Mitchell Finkelhor, 2007; Ybarra, Diener West and Leaf, 2007; Ybarra, Espelage and Mitchell, 2007; Ybarra and Mitchell 2004a; Ybarra and Mitchell 2004b ; Ybarra and Mitchell 2007.

However, (only) 4.7 percent of their respondents were repeated victims of cyberbullying. Repeated victimization was operationalized as being a victim at least once or twice a month. The same goes for cyberbullying perpetration. In the Growing up with Media Survey, a national online survey of 1588 American youth between the ages of 10 and 15 years old (N = 1,500), it was found that 21 percent of youth had bullied someone at least once in the previous year (Ybarra, Espelage and Mitchell, 2007). Only 4 percent of them reported doing so monthly or more often. Moreover, in all analysed studies that indicate the monthly occurrence of either bullying or bullying victimization as frequent or 'repetitive', it is found that 8 percent or less of the respondents are either frequent cyberbullies or cyberbully victims (Dehue *et al.*, 2008; Smith *et al.*, 2006; Smith *et al.*, 2008; Slonje and Smith, 2008; Ybarra and Mitchell, 2007; Ybarra, Diener West and Leaf, 2007).

Furthermore, it is commonly found that cyberbullying is less prevalent than traditional bullying (Juvonen and Gross, 2008; Lenhart, 2007; Li, 2007; Rinzema, 2008; Van den Eijnden *et al.*, 2006; Williams and Guerra, 2007). Nevertheless, youth indicate that cyberbullying is a significant problem that warrants attention (Agatston, Kowalski and Limber, 2007; Mishna, Saini and Solomon, 2009; Vandebosch and van Cleemput, 2010).

2.3 Causes of cyberbullying

Existing literature on cyberbullying is mainly descriptive in nature: it does not focus on explaining why cyberbullying occurs. It is important to note that, as Schrock and Boyd conclude in their 'online threats to youth' literature review: 'causality typically cannot generally be inferred from the reviewed studies' (2010:57). Most research designs in social sciences are not fit to determine cause and effect relations between variables. Social science studies often contain single surveys or studies which can only prove correlation: concluding that two variables are related, but neither of the two can be said to cause the other. However, although correlation does not demonstrate causation, causation requires correlation (Wikstrom, 2008). Therefore, studies that find patterns of association between hypothesized causes and effects contribute to understanding possible causes and falsify causal dependencies that are not consistent with the data. Nevertheless, existing studies on cyberbullying lack explanatory theoretical frameworks. Schrock and Boyd's (2010) literature review, for example, contains no research findings on possible causes of cyberbullying. Hence, in another recent literature review, Kiriakidis and Kavoura spend only four lines on the 'perceived causes of cyberbullying' (2010: 91). Moreover, the perceived causes of cyberbullying they

describe do not seem to be causes at all. They state that causes to cyberbully are: 'that cyberbullying was made for fun', for 'retaliation' or because the bullies 'feel bad about themselves' (2010:91). These reasons to cyberbully are no causes, but rather they should be called motives for cyberbullying behaviour.

However, recently some attempts have been made to explain cyberbullying. Firstly, through a correlational research design, Mesch (2009) tested to what extent the *Routine Activity Theory* can provide an explanation for victimization of cyberbullying. This theory assumes that for deviant behaviour to occur there must be a convergence in time and space of three minimal elements: a likely offender, a suitable target and the absence of a capable guardian (Felson and Clarke, 1998: 4). Based on a secondary analysis of the Teen and Parents survey conducted by the Pew and American life project (N=935), Mesch (2009) found support for the theory. She concludes that the risk of youth being bullied is higher for adolescents who have an active profile on social networking sites and participate in chatrooms. These youth seem to be suitable targets. Furthermore, the results indicate that the absence of parents - i.e. capable guardians - in cyberspace, is related to victimization of cyberbullying. Therefore, Mesch emphasises the need for more parental mediation in order to prevent cyberbullying.

Hinduja and Patchin (2010b) recently published an abbreviated version of a forthcoming article about strain theory as an explanation for cyberbullying behaviour. The primary question examined was: 'are youth who experience strain more likely to engage in bullying?' (2010: 1). They conclude that youth who reported strain were more likely to participate in cyberbullying. However, how strain was measured is not described in the fact sheet.

Besides the aforementioned research on the socio- / criminological causes of cyber bullying, some research has been conducted on cyber bullying as a cause for other deviant behaviour (Hay and Meldrum, 2010; Hay, Meldrum and Mann, 2010; Hinduja and Patchin, 2010c). These studies found that cyber bullying is a source of strain that is significantly related to delinquency and internalizing forms of deviance like intentional self-harm and suicidal ideation. Although these findings are interesting, they do not explain cyber bullying and are thus irrelevant.

Overall, research on possible causes of cyberbullying is in its infancy.

2.4 Offender and victim characteristics

Offenders

There is no consensus about the age on which cyberbullying perpetration peaks. Some studies find that cyberbullying peaks at late adolescence - 15 years and older - (Raskauskas and Stolz, 2007; Vandebosch *et al.*, 2006), while other studies suggest that cyberbullying perpetration peaks at early adolescence, 12 to 15 years (Cassidy *et al.*, 2009).

Furthermore, existing studies do not offer a clear view on gender differences. Several studies find that girls are cyberbullies more often (e.g. Hinduja and Patchin 2009; Kowalski *et al.*, 2008; Wolak *et al.*, 2006), while other studies find the opposite (Dehue *et al.*, 2006; Li, 2006 & 2007; Erdur Baker, 2010; Vandebosch *et al.*, 2006). Nevertheless, the literature is clear about the fact that girls use different forms of cyberbullying than boys. Boys are said to use direct forms of cyberbullying, such as name calling, more often than girls. Girls use indirect forms of cyberbullying, such as rumour spreading, more often (Dehue *et al.*, 2006; Hinduja and Patchin, 2009; Kowalski and Limber, 2007; Kowalski *et al.*, 2008).

On average, cyberbullies spend more time on the internet than those who do not bully (Erdur Baker, 2010; Lenhart, 2007; Li, 2007; Vandebosch *et al.*, 2006; Ybarra and Mitchell 2004a; Ybarra and Mitchell, 2007). Moreover, they mainly use internet applications that are meant to communicate with others (Bauwens, Pauwels, Lobet-Maris, Pouillet and Walrave, 2009).

Parents of cyberbullies seem to be less involved with the internet behaviour of their children than parents of non-cyberbullies (Vandebosch *et al.*, 2006; Van Rooij and Van den Eijnden, 2007). In addition, parents of cyberbullies exert less control over the behaviour of their children in cyberspace than parents of non-cyberbullies (Hinduja and Patchin, 2009; Mason, 2008; Rinzema, 2008; Shariff, 2008; Walrave *et al.*, 2009; Ybarra and Mitchell, 2004a). Moreover, research suggests that the bond between cyberbullies and their caregivers is weak, compared to the bond between non-cyberbullies and their caregivers (e.g. Ybarra and Mitchell, 2004a; Vandebosch *et al.*, 2006; van Rooij and Van den Eijnden 2007; Rinzema, 2008).

The anonymous character of cyberspace is one of the perceived causes of cyberbullying (Hinduja and Patchin, 2009; Kowalski *et al.*, 2008; Rinzema, 2008; Wolak *et al.*, 2006). Some research confirms this assumption: these studies find that cyberbullies

anonymously bully their victims (Kowalski and Limber, 2007; Kowalski *et al.*, 2008; Li, 2007; Williams and Guerra, 2007; Wolak *et al.*, 2007). However, other studies have found that offenders do not bully anonymously (Dehue *et al.*, 2006; Goberecht, 2008; Hinduja and Patchin, 2009; Juvonen and Gross, 2008).

The motives for cyberbullying vary. Several studies have found that revenge is the main motive for cyberbullying (Hinduja and Patchin, 2009; Goberecht, 2008; Raskauskas and Stolz, 2007). Furthermore, a significant number of cyberbullies report bullying 'for fun' (Raskauskas and Stolz, 2007; Smith *et al.*, 2008).

Finally, cyberbullies seem to be traditional bullies and victims of cyberbullying more often than non-cyberbullies (Vandebosch *et al.*, 2006; Kowalski *et al.*, 2008; Hinduja and Patchin, 2009).

Victims

Cyberbullying is mainly directed towards individuals and not towards groups (e.g. Juvonen and Gross, 2008; Raskauskas and Stolz, 2007; Slonje and Smith, 2008).

Victims of cyberbullying are between 12 and 18 years old (e.g. Lenhart, 2007; Mitchell, Finkelhor and Becker-Blase, 2007; Schrock and Boyd, 2010; Vandebosch *et al.*, 2006). As is the case with perpetration, there is no consensus about the age at which cyberbullying victimization peaks (Vandebosch and van Cleemput, 2010). However, several studies have found that victimization starts to increase at early adolescence and decreases at the age of 16 or 17 years old (Hinduja and Patchin, 2008 & 2009; Vandebosch *et al.*, 2006; Ybarra and Mitchell, 2004a).

Most of the literature suggests that girls are the victim of cyberbullying more often than boys (e.g. Dehue *et al.*, 2006; Hinduja and Patchin, 2008; Kowalski and Limber, 2007; Schrock and Boyd, 2010; Smith, *et al.*, 2006 & 2008; Vandebosch *et al.*, 2006). However, some studies suggest that the risk to fall victim to cyberbullying is higher for boys (e.g. Erdur Baker, 2010; van den Eijnden *et al.*, 2006). Furthermore, some studies found equal risks for girls and boys of becoming a victim of cyberbullying (Li, 2006; Patchin and Hinduja, 2006; Slonje and Smith, 2008).

Cyberbully victims spend more time online than their peers (Hinduja and Patchin, 2008; Juvonen and Gross, 2008; Lenhart, 2007; Livingstone and Haddon, 2009; Smith *et al.*, 2008; Vandebosch *et al.*, 2006; Van den Eijnden *et al.*, 2006). Moreover, youth who use internet applications that are meant to communicate with others more often than their peers,

have a higher risk to become a victim (Bauwens *et al.*, 2009; Lenhart, 2007; Van den Eijnden *et al.*, 2006).

Van den Eijnden *et al.* (2006) find that youth who are traditional bully victims and youth who cyberbully others, have an increased risk of becoming a victim of cyberbullying. Other studies confirm these findings (Hinduja and Patchin 2008 & 2009; Juvonen and Gross, 2008; Li, 2007; Raskauskas and Stolz, 2007; Smith *et al.*, 2008; Vandebosch *et al.*, 2006; Ybarra and Mitchell, 2004b). Despite the aforementioned overlap, Ybarra, Diener-West and Leaf (2007) show that the majority of cyberbully victims (64%) are not traditional bully victims. Kowalski and Limber (2007) also conclude that some youth are only bullied in cyberspace. Thus literature suggests that, as David-Ferdon and Feldman Hertz conclude: 'new media technologies are facilitating the development of a new group of adolescents who under traditional circumstances are not victimized by their peers as well as providing another conduit for perpetrators to continue to victimize youth who are already targets at school' (2007: s2).

Finally, research suggests that cyberbullying has negative effects on the psychosocial well-being of youth. These effects will be described below.

2.5 Effects of cyberbullying

Understanding the effects of cyberbullying is necessary to determine their severity. Several studies have tried to measure the effects of cyberbullying. However, definite conclusions cannot be stated, because existing findings rely on correlational research (Kiriakidis and Kavoura, 2010). Such research designs are inappropriate to determine cause and effect. Therefore, existing studies merely found patterns of association between cyberbullying and its 'effects'. The findings presented hereafter should therefore be interpreted with care.

Firstly, research suggests that one in three victims of cyberbullying experience negative effects (Finkelhor *et al.*, 2000; Wolak *et al.*, 2006). In addition, Bauwens *et al.* (2009) found that girls experience more negative effects as a result of cyberbullying than boys. Moreover, Ybarra and Mitchell (2004b) found that youth who were as well perpetrators as victims of cyberbullying were almost six times more likely to report emotional distress than victim-only youth. Victimization correlates with feelings of depression, loneliness, grief, fear, frustration and low self-confidence (Finkelhor *et al.*, 2000; Hinduja and Patchin, 2009; Raskauskas and Stolz, 2007; Van den Eijnden *et al.*, 2006; Vandebosch *et al.*, 2006; Wolak *et al.*, 2006; Ybarra and Mitchell, 2004b). Furthermore, cyberbully victims often seem to think

they are not popular, they have more problems at school, they more often carry a weapon, they are aggressive more often and smoke and drink alcohol more often than non-victims (Hinduja and Patchin, 2008; Vandebosch *et al.*, 2006 Ybarra, Diener-West and Leaf, 2007).

There is no consensus about the differences between the effects of traditional bullying and cyberbullying. Some studies found that the effects of traditional bullying are more severe than the effects of cyberbullying (e.g. Van den Eijnden *et al.*, 2006). Other studies suggest that the effects of cyberbullying and traditional bullying are comparable (Juvonen and Gross, 2008; Mason, 2008; Smith *et al.*, 2008). A recurrent finding is that victims of both cyberbullying as well as traditional bullying experience most negative effects (Van den Eijnden *et al.*, 2006; Vandebosch *et al.*, 2006; Ybarra, Diener-West en Leaf, 2007). Finally, Slonje and Smith (2008) found that the impact of picture or video clip cyberbullying is higher than the impact of other forms of traditional or cyberbullying, because of the large audience size in cyberspace. After all, once an embarrassing picture or video clip of the victim is uploaded on YouTube, for example, everyone with an internet connection can see it.

2.6 Measures against cyberbullying

A wide variety of practical measures against cyberbullying are described in the literature. These measures can be divided into three categories. Firstly, measures against cyberbullying focus on increasing awareness about the nature, extent and effects of cyberbullying within communities (Agatston, *et al.*, 2007; Dehue *et al.*, 2008; Hinduja and Patchin, 2009; Kowalski and Limber, 2007; Li, 2007; Mason, 2008; Smith *et al.*, 2008; Slonje and Smith, 2008; Vandebosch *et al.*, 2006). It is assumed that increasing awareness about cyberbullying is a major practical step to tackle the problem. The second category of measures are meant to improve communication about internet use between children and adults (Cassidy *et al.*, 2009; Hinduja and Patchin, 2009; Kowalski *et al.*, 2008; Mason, 2008; Rinzema, 2008 Smith *et al.*, 2008). It is assumed that in order to signal and prevent online misconduct at an early stage, it is essential to know about the online behaviour of youth and therefore open communication is essential. In addition, the third category of measures are meant to increase adult supervision on the online behaviour of youth (David-Ferdon and Feldman Hertz, 2007; Hinduja and Patchin, 2009; Kowalski *et al.*, 2008; Rinzema, 2008; Van Rooij and Van Eijden, 2007; Willard, 2007). Parents can, for example, use software to log chat conversations of their children.

A comprehensive approach

In 2002, Berson, Berson and Ferron argued that taking measures against cyberbullying ‘involves more than disseminating practical lists of online safety tips and requires a comprehensive educational program, which is part of a dynamic and interactive experience involving teachers, parents and youth in the development and training process’ (2002:68). Their conclusion is widely accepted in contemporary literature on cyberbullying. It is commonly asserted that cyberbullying should be tackled through a comprehensive program in which important stakeholders, such as schools, parents and local governments, should participate (e.g. Cassidy *et al.*, 2009; David-Ferdon and Feldman Hertz, 2007; Hinduja and Patchin, 2008; Kowalski and Limber, 2007; Kowalski *et al.*, 2008; Li, 2008; Mason, 2008; Smith *et al.*, 2008; Walrave *et al.*, 2009; Williams and Guerra, 2007).

Researchers advocate such a comprehensive program, because a similar strategy has been successful in tackling traditional bullying. Evaluations have shown that the comprehensive Olweus Bullying Prevention Program (OBPP), for example, reduced traditional bullying by 25 to 50 percent (Olweus and Limber, 1999 as cited in Mason, 2008). Since it is argued that traditional bullying and cyberbullying share enough common features (Williams and Guerra, 2007), researchers suggest that existing bullying prevention programmes should form the basis for cyberbullying prevention and intervention strategies (Agatston *et al.*, 2007; Hinduja and Patchin, 2009; Kiriakidis and Kavoura, 2010; Kowalski *et al.*, 2008; Mason, 2008; Willard, 2007).

However, there is a lack of empirical research on the effectiveness of measures against cyberbullying (David-Ferdon and Feldman Hertz, 2007; Kiriakidis and Kavoura, 2010; Li, 2007; Mason, 2008; Raskauskas and Stolz, 2007; Shariff, 2008; Walrave *et al.*, 2009). Mason for example, concludes: ‘It is important to note that because cyberbullying is a new form of bullying, there is no empirical evidence that exists to validate effective prevention or intervention measures’ (2008: 333). It is therefore questionable to what extent programmes that were originally designed to tackle traditional bullying can effectively tackle cyberbullying as well.

3. Research design: criminological perspectives

This chapter describes the research problem, its aims, the research questions and the criminological perspectives and hypothesis that underlie this study.

3.1 Research problem & aims

As the literature review illustrates, a considerable amount of literature contributes to our understanding of cyberbullying. Moreover, as cyberbullying seems to be a significant problem, existing literature emphasizes the importance of research in this matter.

However, it is also clear from the literature review that existing studies lack explanatory theoretical frameworks. Therefore, in order to develop a better understanding of the causes of cyberbullying, explanatory research is needed. The primary objective of this explanatory research is to contribute to understanding the causes of cyberbullying. Existing criminological theories which provide plausible explanations for cyberbullying are used to test several hypotheses. Furthermore, understanding the causes of deviant behaviour, such as cyberbullying, is necessary to develop effective interventions (Wikstrom, 2008). Therefore, the secondary goal of this study is to contribute to the development of measures against cyberbullying. Finally, while testing existing criminological theory in a new social environment like cyberspace, this research aims to investigate the extent to which existing criminological theories can be used to explain deviant behaviour in cyberspace.

3.2 Research questions

In addition to the research problem and its aims, the following research questions underlie this study.

Research question:

To what extent can criminological theory explain cyberbullying and inform intervention strategies?

Accompanying questions

- What is cyberbullying?

- What is the nature and prevalence of cyberbullying?
- What are the characteristics of offenders?
- To what extent can existing criminological theory explain offending behaviour?
- What are the characteristics of victims?
- To what extent can existing criminological theory explain victimization?
- To what extent does the psychosocial well-being of victims differ from the well-being of non-victims?
- What can be done against cyberbullying?

3.3 Criminological perspectives on cyberbullying

In order to answer the aforementioned research questions, several explanatory theoretical perspectives are formulated. Mishna *et al.* conclude (2009: 4) that 'to understand cyberbullying, the context of the cyberworld must be taken into account'. Therefore, the theoretical perspectives presented hereafter combine characteristics of cyberspace with existing criminological theories to explain cyberbullying. Based on these criminological perspectives, several hypotheses are formulated.

Characteristics of cyberspace

Existing literature on cyberbullying identifies several internet-related characteristics that could provide an explanation for cyberbullying behaviour. These characteristics cause what is termed 'disinhibition' (e.g. Willard 2007; Mason, 2008; Kowalski *et al.*, 2008; Hinduja and Patchin, 2009). Hinduja and Patchin describe disinhibition as 'to be freed from restraints on your behaviour' (2009:21).

First, the 'anonymity' of cyberspace is perceived to cause cyberbullying (e.g. Dehue *et al.*, 2008; Mason, 2008; Shariff, 2008; Hinduja and Patchin 2009). It is assumed that youth are freed from possible restraints to bully in cyberspace, because the internet facilitates the possibility to be anonymous. After all, the risks of getting caught and punished for anonymously cyberbullying another person, for example by using a fictive identity, seem to be low. Moreover, the risk of being physically attacked by the victim is absent for bullies that keep their identity a secret.

In addition, the characteristics of cyberspace cause what Walrave *et al.* call 'the cockpit effect' (2009: 17). Due to the 'absence of relational clues as well as physical proximity to another person' in cyberspace (Suler and Philips 1998 as cited in Shariff, 2008: 100) offenders often seem to think their behaviour has a low impact on victims (e.g. Willard, 2007; Dehue *et al.*, 2008; Mason, 2008; Smith *et al.*, 2008). Because of this, offenders seem merciless and seem to have a lack of empathy for their victims (Walrave *et al.*, 2009).

Moreover, it seems that the lack of adult supervision in cyberspace causes cyberbullying behaviour (e.g. Ybarra and Mitchell, 2004; van Rooij and Van den Eijnden, 2007; Mason, 2008; Hinduja and Patchin, 2009). Without supervision, the risk of being caught and punished for deviant behaviour in cyberspace is low. Therefore, cyberspace provides a relatively 'safe' opportunity for offenders to bully.

Furthermore, cyberspace provides an infinite audience for offenders (e.g. Shariff, 2008; Slonje and Smith, 2008; Hinduja and Patchin, 2009). For example, once a bully uploads a website that is devoted to make fun of a victim, everybody with an internet connection can see it. Therefore cyberspace provides a relatively easy opportunity for offenders to intentionally hurt their victims.

Finally, cyberspace enables bullying regardless of time and place (Kowalski *et al.*, 2008; Shariff, 2008; Hinduja and Patchin, 2009). Youngsters who are bullied in traditional settings are able to escape victimization when, for example, their school day is over. In cyberspace on the other hand, electronic devices can be used to bully 24/7. Text messages, emails or websites devoted to bully someone, are not limited by time or place.

The offender perspective: rational choice and self-control

The question what causes deviant behaviour is one without an unambiguous answer. However, overseeing the characteristics associated to cyberspace, it seems plausible to explain engagement in cyberbullying as a rational choice. In essence, Rational Choice Theory states that deviant behaviour is the result of an assessment of costs and benefits whereby the benefits outweigh the costs. People make rational decisions around the issues of risk, effort and reward (Clarke and Cornish, 2000 as cited in Rock, 2007; Clarke and Felson, 2008). In the case of cyberbullying, the risks seem to be low: offenders are able to operate anonymously, there is an absence of relational clues and physical proximity and there seems to be a lack of supervision in cyberspace. Therefore, since the majority of youth have internet access, the effort it takes to cyberbully someone is small. Moreover, cyberspace provides the opportunity to bully, regardless of time and place. Cyberspace also provides the bully with an

'infinite audience'. Thus as a reward, without much effort or risks, the cyberbully is able to intentionally and repeatedly hurt his victim, confirming the power imbalance between them. Therefore, the first hypothesis central to this study is: cyberbullying is a rational choice.

However, the first hypothesis does not explain why certain youngsters make the rational decision to cyberbully, while others do not. Therefore a second theoretical concept, derived from Gottfredson and Hirschi's 'General Theory of Crime' (1990), is used to explain engagement in cyberbullying. Central to this theory is the assumption that engagement in deviant behaviour depends on a person's extent of self-control. According to van Dijk, Sagel Grande and Toornvliet (2006), Rational Choice Theory and Self-Control Theory can appropriately be combined in an explanatory model, because rational choices could be influenced by self-control. Gottfredson and Hirschi state: 'High self-control effectively reduces the possibility of crime – that is, those possessing it will be substantially less likely at all periods of life to engage in criminal acts' (1990: 89). According to Gottfredson and Hirschi (1990), low self-control is caused by bad rearing practices. Four factors influence the level of self-control among youth: (1) the level of attachment between parents and their children, (2) the level at which parents supervise the behaviour of their children, (3) the ability of parents to recognize deviant behaviour and (4) the extent to which parents punish deviant behaviour (Gottfredson and Hirschi, 1990).

Considering the unique characteristics of cyberspace, Self-Control Theory seems appropriate to explain engagement in cyberbullying. After all, cyberspace seems to lack adult supervision and therefore deviant behaviour will not be recognized and punished (Ybarra and Mitchell 2004a; van Rooij and Van den Eijnden, 2007; Mesch, 2010; Hinduja and Patchin, 2009). Moreover, research suggests that the bond between cyberbullies and their caregivers is weak compared to the bond between non-cyberbullies and their caregivers (e.g. Ybarra and Mitchell, 2004a; Vandebosch *et al.* 2006; van Rooij and Van den Eijnden 2007).

Therefore, the second hypothesis central to this research is: youth with high self-control will be less likely to cyberbully, than those with low self-control.

The victim perspective: Routine Activity Theory (RAT)

In this study, the RAT is used to identify possible causes of cyberbullying victimization. Central to this theory is the assumption that for deviant behaviour to occur 'there must be a convergence in time and space of three minimal elements: a likely offender, a suitable target and the absence of a capable guardian' (Felson and Clarke, 1998: 4). Literature on

cyberbullying suggests that the Routine Activity approach could provide a plausible explanation for victimization.

Firstly, there are likely offenders in cyberspace. The literature review revealed that the extent of cyberbullying perpetration varies between 4 and 56 percent. According to the RAT, a likely offender is someone who is motivated and has the intention to behave in a deviant manner (Cohen and Felson 1979; Clarke and Felson, 2008). Intention is also one of the key elements in definitions of cyberbullying. In addition, several studies found that revenge was the primary motive for cyberbullying (Goberecht, 2008; Hinduja and Patchin, 2009; Raskauskas and Stolz, 2007).

Secondly, it seems plausible to state that there are 'suitable targets' in cyberspace. The internet has become an evermore popular medium among youth and the literature suggests that youth who are online more often and use the internet for communicative purposes more than others, are more likely to become cyberbully victims (Hinduja and Patchin, 2008; Juvonen and Gross, 2008; Livingstone and Haddon, 2009; Smith *et al.*, 2008; Vandebosch *et al.*, 2006). In addition, prevalence rates of cyberbullying victimization vary between 6 and 72 percent, which also suggests that 'suitable targets' are present in cyberspace.

Finally, capable guardians to protect youth against cyberbullying seem to be absent. After all, the internet provides cyberbullies the opportunity to bully anonymously and their online behaviour seems to be insufficiently supervised (e.g. Hinduja and Patchin, 2009; Ybarra and Mitchell, 2004a; van Rooij and Van den Eijnden, 2007). In addition, the literature suggests that there is a lack of measures to prevent victimization of cyberbullying: parents of victims, for example, seem to be absent in cyberspace (Berson *et al.*, 2002; Juvonen and Gross, 2008; Mesch, 2009; Rinzema 2008; Vandebosch *et al.*, 2006).

The third hypothesis is that the RAT provides an explanation for victimization of cyberbullying.

4. Research methodology

This chapter provides a detailed description of how this study was conducted. Firstly, the organizational setting will be discussed. Subsequently, the research methods that were used to conduct the research will be justified. Because ‘every social science measurement has an error component’ (Skogan, 2003: 8), a combination of research methods was used to improve the measurement accuracy of this study. The next section describes the main statistical tests that were used for the analysis. Hence, the general characteristics of the survey participants will be summarized. Finally, ethical issues will be addressed.

4.1 Organizational setting

Commissioned by the Dutch Ministry for Education, Culture and Science, the Cybersafety Chair of the NHL University of Applied Sciences is conducting a Dutch national study on youth and cybersafety. This research programme started in September 2009 and will be finished in September 2013. The goal of the project is to describe and explain the potential risks for youth in cyberspace and, based on the research findings, develop effective interventions to enhance the safety of youth in cyberspace. Supplementary to the national research, this study on the causes of cyberbullying was conducted. As will be described below, some research activities for this dissertation overlapped with, or were influenced by, the national research project.

Methods

4.2 Literature review

This study started with a literature review. The literature review identified what was already known about cyberbullying and its possible causes. Furthermore, the literature review contributed to the development of the theoretical perspectives that underlie this study. It synthesised and assessed primary research into a single, descriptive account. Open sources, such as Google (Scholar), and scientific databases, such as Oxford University Press E-Journals, PubMed, Science Direct and Wiley Interscience E-Journals were used to search for relevant documents. Publications were searched for by using keywords such as: cyber bullying, cyberbullying, electronic bullying / harassment and internet bullying / harassment. Subsequently, the documents found were screened for their relevance by scanning tables of

content and by reading summaries, abstracts and conclusions. Supplementary literature was found by searching for relevant references in the documents found so far. Documents that were not found in open sources or scientific databases were collected via regular libraries.

4.3 Focus groups

A focus group is ‘a research technique that collects data through group interaction on a topic determined by the researcher’ (Morgan, 1996, p.130). Although this research method seems to be applicable for studies that involve youth (Charlesworth and Rodwell, 1997; Horner, 2000), little is known about best practices on how to do so. Nevertheless, it is argued that a group discussion with youth should be conducted with a homogeneous group of respondents: they should, for example, be of the same age, gender and educational level (Sim 1998; Hoppe, Wells, Morrison, Gillmore and Wilsdon, 1995). Furthermore, between five and eight youngsters should participate in a focus group (Charlesworth and Rodwell, 1997; Hoppe *et al.*, 1995; Morgan, Gibbs, Maxwell and Britten, 2002).

For this study, four group discussions were conducted. The focus groups were assembled according to best practices found in the literature. Participants of the first two focus groups were recruited via one class of a primary school. The first focus group consisted of six boys, aged 11 and 12 years old. The second focus group consisted of six girls, aged 11 and 12 years old. Participants of the third focus group were recruited via two teams of a local soccer club. This focus group consisted of six boys, aged 13 to 15 years old. Since these boys were not recruited via a school, they had different educational levels. However, during the group discussion, this did not seem to influence the results negatively. The last focus group consisted of eight girls, aged 14 and 15 years old. These girls were recruited via one class of a secondary school. In cooperation with the schools and the soccer club, all parents have been asked for permission before recruiting potential participants.

A topic list was developed, based on the results of the literature review (appendix C). This topic list was used to guide the group conversations. Topics discussed were: internet access, motives for internet use, risk perception, cyberbullying experiences, coping strategies, internet rearing practices and protective measures. The aim of the group discussions was to gain insight in online bullying experiences and to validate the theoretical perspectives that underlie this study. Participants were, for example, asked to what extent the internet is an environment that facilitates bullying (e.g. because of disinhibition / the lack of capable guardians). Finally, the results provided input for the questionnaire.

To make sure the data obtained would be as reliable as possible, all focus groups were conducted by the same two researchers (Charlesworth and Rodwell, 1997; Kidd and Parshall, 2000). One of the researchers led the group discussion. This ‘moderator’, introduced the topics, asked relevant questions and kept the discussion going (Sim, 1998). The other researcher observed the participants, made notes, kept an eye on the time spent on each topic and sometimes asked supplementary questions or questions that were forgotten by the moderator. Each group discussion took no more than 45 to 60 minutes (Hoppe *et al.*, 1995; Morgan *et al.*, 2002).

4.4 Survey

4.4.1 Note regarding the organizational setting

Two large scale self-report surveys will be conducted in 2011 and 2012, as a part of the longitudinal national research program on the safety of youth in cyberspace. A questionnaire has been developed for that purpose. This questionnaire contains questions about the following online threats to youth: compulsive internet use, cyberbullying, online sexual communication and financial cybercrimes (e.g. virtual theft / online fraud). The questions about cyberbullying were co-developed by the author of this dissertation and two colleagues. Before conducting the national surveys, the complete questionnaire was quantitatively tested amongst 387 students of a regional high school and 69 pupils of a regional primary school. The data obtained through this test are used in this dissertation.

4.4.2 Developing the questionnaire

Based on the literature review and the focus groups, a draft version of the questionnaire was developed. This draft version was reviewed by four research colleagues. Furthermore, the questions were qualitatively tested offline amongst 11 youngsters between 10 and 18 years old. The methods used for this qualitative pretest were thinking aloud and probing (Collins, 2003). Respondents were asked to think aloud while answering the survey questions. Furthermore, researchers asked specific questions about the understandability of items in the questionnaire. The reviews of colleagues and the qualitative test of the questions resulted in several changes in the formulation and routing of the questions. Subsequently, the questionnaire was placed online. A consortium of youth and healthcare organizations and the police are involved in the national research program. Because the online questionnaire contains some sensitive questions, several professionals of these organizations gave feedback

on (the suitability of) the questions. Moreover, the online version was again tested by four research colleagues. This online test also resulted in several adjustments to the questionnaire. Subsequently, the online version of the survey was ready for the quantitative test that underlies this study.

4.4.3 Measures

Personal characteristics, internet use and well-being

The questionnaire (appendix D) begins with some questions about personal characteristics such as gender, age, and educational level. Subsequently, questions are asked about the internet behaviour of respondents. For example, respondents have to indicate whether they have internet access at home and, if so, how much time they spend on the internet and what kind of applications they use. In addition, a construct was used to measure the psychosocial well-being of respondents. This construct was composed by combining and adjusting items from existing constructs. Original, validated constructs were difficult to use, because they often consisted of too many items to include in this lengthy questionnaire. Moreover, the focus groups and the qualitative pretest made clear that items used in existing constructs are often inappropriate to ask children, because the way they are formulated is too difficult. Items used were mainly derived from the study of Vandebosch *et al.*, (2006) and find their origin in the Self-Description Questionnaire (Ellis, Parada, Richards and Richards, 2002, as cited in Vandebosch *et al.*, 2006) and the SHIELDS questionnaire (Gerson 1998, as cited in Vandebosch *et al.*, 2006) for measuring stress. The construct eventually contained 13 items. On a 5-point scale, from totally agree to totally disagree, respondents had to indicate whether they, for example, are satisfied with themselves or to what extent they feel happy. The construct used has a Cronbach's Alpha of .806.

Bullying & forms of bullying

The literature review illustrated that there is a lack of a standardized operational definition to measure cyberbullying. Therefore, a validated instrument to measure traditional bullying was initially searched for. A validated instrument that is frequently used to measure traditional bullying is the Bully/Victim Questionnaire (Olweus, 1996). The key questions in this instrument are: 'How often have you been bullied at school in the past couple of months' or 'How often have you taken part in bullying other students at school in the past couple of months'. The response alternatives are: 'I haven't bullied other / I haven't been bullied by other students at school in the past couple of months', 'only once or twice', '2 or 3 times a

month', 'about once a week', and 'several times a week' (Solberg and Olweus, 2003: 243). This instrument also forms the basis for questionnaires in several studies on cyberbullying (for example: Kowalski and Limber, 2007; Smith *et al.*, 2006; Smith *et al.*, 2008). To increase measurement uniformity in studies on cyberbullying, the Bully/Victim Questionnaire was also used in this study. The questions and answers were translated in Dutch and adjusted to (forms of) cyberbullying: instead of asking how often someone was bullied / took part in bullying at school, respondents were asked how often they were bullied / had bullied somebody else via the internet or their mobile phone in the past couple of months. Besides using this instrument to ask students about the prevalence of cyberbullying, students were also asked how often they had been the perpetrator or victim of traditional bullying

Forms of cyberbullying that were included in the study are: harassment (calling names / sending offensive pictures or movies), exclusion (from an online group), denigration (spreading gossip and rumours) and outing (public posting, sending, or forwarding personal images or movies that contain intimate personal information or are potentially embarrassing). Respondents were asked how often they were the victim of or took part in these forms of cyberbullying. For traditional bullying, no specific forms were measured.

Unfortunately, due to the small number of cyberbullies and victims in the sample, it was impossible to conduct reliable analyses that distinguish between the Bully/Victim response alternatives. Therefore, the results were dichotomized into either: (1) not being a bully/victim or (2) being a bully/victim. Thus, the results presented relate to all cyberbullying incidents, whether they occurred once or twice in the past months or several times a week.

H1: Cyberbullying is a rational choice

This study focussed on testing the Rational Choice perspective by measuring to what extent cyberbullies see cyberspace as an environment where the risks of bullying behaviour are small.

It is assumed that cyberspace is a low-risk environment for bullying behaviour compared to the offline world, because of anonymity, the lack of relational clues and the lack of supervision and punishment. Therefore, it is expected that traditional bullies now also bully while online. Moreover, it is assumed that there is a new group of bullies that exclusively bully while online. For the latter group, the characteristics of the Internet have affected their rational choice: because of the high risks involved with traditional bullying they previously did not conduct this kind of deviant behaviour. However, because of the relatively low risks involved with cyberbullying, they do conduct such behaviour.

Furthermore, this study tested to what extent cyberbullying behaviour is conducted anonymously for both groups of bullies (offline & online bullies / online bullies only). Bullies were asked whether victims knew their identity. After all, according to the Rational Choice perspective, the perceived anonymity of cyberspace makes cyberbullying a form of behaviour that poses little risk of getting caught and punished.

Hence, this study tested to what extent both groups of bullies actually see cyberspace as an environment in which the risks of getting caught and punished are lower than the risks of getting caught and punished for offline bullying. Respondents were asked how big they perceive the chance of getting caught and punished for offline bullying and, subsequently, for cyberbullying.

Finally, it is assumed that the unique characteristics (such as anonymity) of cyberspace free youth from restraints on their behaviour. The disinhibitive effect of cyberspace is expected to cause forms of deviant behaviour, such as cyberbullying. A 7-item construct was used to measure to what extent respondents feel disinhibited in cyberspace. Answers were coded from 1 – a very small disinhibition effect – thru 5 – a very big disinhibition effect. Thus, the higher the score on this construct, the more respondents experience disinhibition in cyberspace. Items included were, for example: ‘I find it easier to talk on the internet than in real life’ ‘I dare more on the internet than in real life’ and ‘on the internet I discuss things I never talk about in real life’. The construct was reliable (Cronbach’s Alpha=0.836).

H2: Cyberbullies have a lower extent of self-control than non-cyberbullies

The second hypothesis central to this research is: youth with high self-control will be less likely to cyberbully than those with low self-control.

A construct that was derived from The Grasmick Scale (Grasmick *et al.*, 1993) for self-control was used to test the extent of self-control of participants in the study,. This scale, which is based on Gottfredson and Hirschi’s theory (1990), has proven to be reliable (Piquero and Rosay, 1998) and is used in several other studies (e.g. Junger-Tas, Steketee and Moll, 2008). However, because of the length of the questionnaire and because - as we found in the focus groups and our qualitative test - several original items were too difficult for children to understand, the scale was reduced from 23 to 7 items. Unfortunately, the Cronbach’s Alpha of the adjusted construct used was 0.541 and therefore not reliable. Nevertheless, the items in the construct were used for bivariate analysis.

Furthermore, according to Gottfredson and Hirschi (1990) four factors influence the level of self-control among youth: (1) the level of attachment between parents and their children, (2) the level at which parents supervise the behaviour of their children, (3) the ability of parents to recognize deviant behaviour and (4) the extent to which parents punish deviant behaviour (Gottfredson and Hirschi, 1990). In this study, the attachment between parents and their children was measured by using a construct that was derived from the Dutch version of the validated Inventory of Parent and Peer Attachment (IPPA) (Armsden and Greenberg, 1987; Van der Vorst, Engels, Meeus and Dekovic, 2006; Van Rooij and van den Eijnden, 2007). Unfortunately, the construct used was not reliable (Cronbach's alpha score=0.603). Nevertheless, one of the items, which asks respondents to indicate how well they get along with their parents, is used for bivariate analysis. The extent of parental supervision, recognition and punishment of cyberbullying was also measured. First, respondents were asked whether parents supervise / monitor their online behaviour. Respondents were then asked whether their parents set internet rules and, finally, respondents were asked whether they adhere to these rules and, if not, what the consequences were. Unfortunately, due to the routing in the questionnaire, only 92 respondents answered the question about consequences for not adhering to the internet rules². Thereof, only 13 were cyberbullies. Because answers were divided over five categories and recoding the answers would not produce any useful results, the number of respondents that answered this question is too low to report any useful results. Therefore, these results are disregarded.

H3: The Routine Activity Theory explains victimization of cyberbullying

Concerning the RAT hypothesis, first it was measured to what extent motivated offenders are present in cyberspace. Respondents were asked how often they conducted (forms of) cyberbullying in the past couple of months. Furthermore, cyberbullies were asked why they cyberbullied somebody else: was it, for example, for fun, or because they really intended to hurt someone.

Subsequently, the presence of suitable targets in cyberspace was measured. Clarke and Felson (2008: 2) define a suitable target as 'any person or object likely to be taken or attacked by the offender'. Previous studies suggest that youth who are online more often and youth who use the internet for communicative purposes more often than their peers more frequently

² All the respondents who reported that A) there are no internet rules; B) their parents never or usually not control internet rules and C) they always abide to the internet rules, did not answer the question.

become cyberbully victims. Therefore, in this study several measures are included to determine to what extent youth are online and for what purposes youth use the internet. Respondents were, for example, asked what internet applications they use the most. Moreover, respondents were asked how often they were the victim of (a form of) cyberbullying in the past couple of months.

Finally, according to the RAT, the absence of capable guardians is crucial for deviance to occur. In addition, the theory suggests that the most likely individuals to prevent crime are not, for example, the police, but rather friends or family (Clarke and Felson, 2008). Therefore, in this study the influence of parents as capable guardians was measured. Respondents were asked about the bond they have with parents, the extent to which parents supervise and monitor online behaviour, the extent to which parents set rules and the extent to which parents punish deviant behaviour. Since, due to the routing in the questionnaire, only 92 respondents answered the question about consequences for not adhering to internet rules and thereof merely 19 respondents were victims of cyber bullying analysis regarding to consequences for not adhering to internet rules were unreliable and are disregarded.

4.5 Analysis

SPSS was used to conduct the quantitative analysis in this study. The main statistical technique used is the chi-square test for independence. To be significant the sig. value needs to be $p < 0.05$ or smaller. However, results with a sig. value of $p < 0.10$ are also presented. In the latter case, differences found are significant with 90 percent certainty. Results are not reliable and will not be presented if they have violated the minimum expected cell frequency: at least 80 percent of the cells should have expected frequencies of five or more. Analyses of variance (ANOVA) were used to compare mean scores on constructs such as disinhibition and well-being between groups.

4.6 Survey participants

Table 1 summarizes the general characteristics of the survey participants.

Gender	N	%
Male	249	55%
Female	207	45%
Educational level³	N	%
Primary school	69	15%
Secondary school: VMBO	180	39%
Secondary school: HAVO	93	20%
Secondary school: VWO	114	25%
Age	N	%
10	28	6%
11	38	8%
12	79	17%
13	97	21%
14	79	17%
15	86	19%
16	39	9%
17	10	2%

Table 1: general characteristics

Since respondents were recruited from a random sample of two Dutch schools, the sample population is not representative. Therefore the research findings are not generalizable for Dutch youth from 10 to 17 years old.

4.7 Ethics

This study has been conducted under the Research Ethics Code of Practice concerning Human Subjects of the University of Leicester. The Universities Ethics Committee approved the research study before any work was conducted that involved human subjects. In addition, this study was subject to the research ethics code of the NHL University of applied sciences. Moreover, a consortium of youth and healthcare organizations and the police surround the national research program to which this study is supplementary. Because the questionnaire involves children and contains some sensitive questions, before conducting the actual survey, the consortium gave feedback on (the suitability of) the questions. For that purpose, a qualitative pretest was also held among several parents and their children. By conducting the research under these conditions, the study has protected the rights, interests and dignity of its participants. Nevertheless, some ethical issues warrant specific attention here.

³ In Holland, secondary school is divided into several educational levels. The VMBO level is the lowest and the VWO level is the highest form of secondary school education.

Research participants were recruited via schools. Therefore, a letter and an information package about the study were sent to the schools that were approached for cooperation in the study (appendix A). Two schools were approached for cooperation in the survey. Both were willing to cooperate. In addition, two other schools and the board of one local soccer club were approached to cooperate in the focus groups. These organizations were also willing to cooperate in the study.

Subsequently, because the study involves children, parental consent had to be obtained. Therefore, all parents of the participating children received a letter which informed them about the study (appendix B). Parents were given the option to disallow their child(ren) to participate in the study by filling out a special coupon that was attached to the letter and returning this coupon to the researcher. Children who weren't allowed to participate in the study were excluded from participation. Overall, 10 children were not allowed to participate in the study.

Moreover, consent was also obtained from the participants themselves. Each participant was informed about the study and their right to withdraw participation at any time. Since the research was anonymous, no personal written consent forms were stored. No children refused to participate in the study themselves.

5. Results

This chapter is divided into two sections. Section 5.1 is about offenders of cyberbullying. In section 5.2, victims of cyberbullying are discussed. Both sections contain information about the nature and prevalence of cyberbullying, general characteristics of bullies / victims and a discussion of research results regarding the hypotheses that underlie this study. Finally, the effects of cyberbullying on victims are discussed.

5.1 Offenders of cyberbullying

5.1.1 Nature and prevalence

This study measured the prevalence of cyberbullying through an explicit measure (how often have you cyberbullied another person) and by asking respondents about their experiences with forms of cyberbullying (e.g. how often have you called another person names). Combining the results of the explicit measure and the diverse forms of cyberbullying, 17.8 percent (N=81) of the respondents in this study reported having cyberbullied another person in the past couple of months. Table 2 differentiates between the explicit and the implicit measures.

The nature and prevalence of cyberbullying	N	%
traditional bullying	58	12.7
Cyberbullying (explicit measure)	14	3.1
Calling names / threatening	19	4.2
Sending offensive pictures or movies	1	0.2
Spreading gossip / rumours	55	11
public posting, sending, or forwarding personal images or movies	6	1.3
Exclusion	22	4.8

Table 2: nature and prevalence

Respondents reported being a traditional bully more often than being involved in any form of cyberbullying. Although the differences seem to be significant, chi square tests - except for the difference between traditional bullying and spreading gossip or rumours in cyberspace ($p=.000$) - revealed no reliable results due to the small number of cyberbullies. Forms of bullying that were reported the most are: spreading gossip and rumours (11%), exclusion (4.8%) and calling somebody names or threatening another person (4.2%).

The results indicate that bullies do not perceive spreading rumours, calling somebody names or excluding another person as cyberbullying behaviour. After all, the prevalence reported on the explicit measure for cyberbullying is lower than the prevalence rates reported for these forms of cyberbullying.

5.1.2 Offender characteristics

Gender

Table 3 presents the gender distribution of non-cyberbullies and cyberbullies. Of the non-cyberbullies 56.3 percent are boys and 43.7 percent are girls. Of the cyberbullies, 46.9 percent are boys and 53.1 percent are girls. The differences found are not significant.

The gender of cyberbullies				
	No cyberbully		Cyberbully	
	N	%	N	%
Male	211	56.3	38	46.9
Female	164	43.7	43	53.1
Total	375	100	81	100

Table 3: gender

However, as figure 1 shows, significant gender differences were found for involvement in forms of (cyber) bullying.

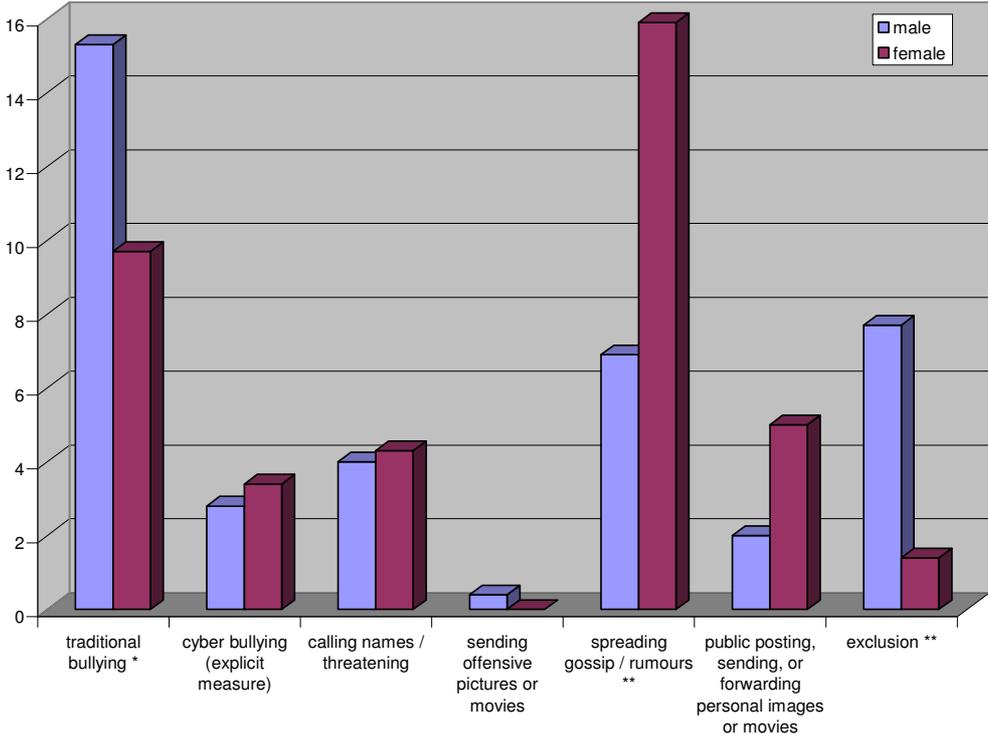


Figure 1: gender* involvement in forms of (cyber)bullying

Based on a chi square test for independence (with Yates Continuity Correction) it can be stated with 90% certainty that boys are significantly more involved in traditional bullying than girls ($p=.071$): 15.3 percent of the male respondents and 9.7 percent of our female respondents bullied somebody else in the traditional manner. A significant difference in

gender was also found between respondents who spread rumours and respondents who exclude another person in cyberspace. Girls spread significantly more rumours online than boys ($p=.003$) and boys exclude others more often on the internet than girls ($p=.004$). No further gender differences were found.

Age

Table 4 presents the age distribution of cyberbullies compared to the age distribution of non-cyberbullies. Cyberbullies seem to be between 14 and 16 years old more often than non-cyberbullies. However, the differences found are not significant.

The age of cyberbullies				
	no cyberbully		cyberbully	
	N	%	N	%
10	24	6.4	4	4.9
11	35	9.3	3	3.7
12	69	18.4	10	12.3
13	80	21.3	17	21
14	59	15.7	20	24.7
15	69	18.4	17	21
16	30	8	9	11.1
17	9	2.4	1	1.2
Total (N=456)	375	100	81	100

Table 4: age

An analysis was also conducted to see if there were any age differences with regard to involvement in forms of cyberbullying. This analysis did not reveal reliable results because of the low number of bullies within each age category and is therefore disregarded.

Educational level

Table 5 compares the educational level of cyberbullies to the educational level of non-cyberbullies. The educational level of cyberbullies does not significantly differ from the educational level of non-cyberbullies.

The educational level of cyberbullies				
	no cyberbully		cyberbully	
	N	%	N	%
Primary School	59	15.7	10	12.3
Secondary school 'vmbo'	142	37.9	38	46.9
Secondary school 'havo-vwo'	174	46.4	33	40.7
Total (N=456)	375	100	81	100

Table 5: educational level

However, as figure 2 illustrates, there are some significant differences when educational level and involvement in forms of cyberbullying are compared.

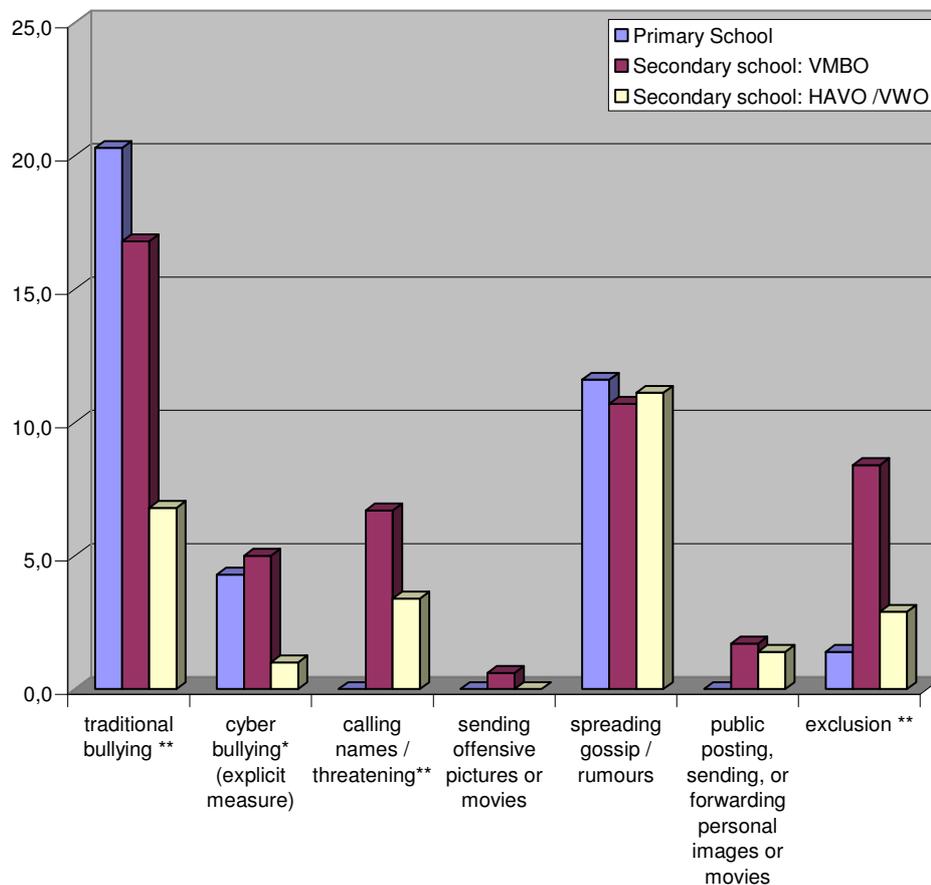


Figure 2: educational level*forms of cyberbullying (* $p < 0.10$; ** $P < 0.05$)

Firstly, there is a significant difference in involvement in traditional bullying between respondents from the various educational levels ($p = .002$). 20.3 percent ($n = 14$) of the respondents within primary school reported being a traditional bully, compared to 16.8 ($N = 30$) percent of the VMBO respondents from secondary school and 6.8 ($N = 14$) percent of the HAVO/VWO respondents. Furthermore, the results indicate that, with 90 percent certainty, there are significantly fewer cyberbullies in the 'HAVO-VWO' group of respondents compared to the other educational levels ($p = .056$). In addition, respondents from the 'VMBO' group reported calling somebody names or threatening another person online significantly more often than respondents from the other groups ($p = .045$). Exclusion is also significantly more prevalent within the VMBO respondents than in the other groups ($p = .015$).

5.1.3 The Rational Choice Hypothesis

Hereafter, the research results regarding to the rational choice hypothesis are presented.

Involvement in traditional- and cyberbullying

First, it was expected that traditional bullies would also bully in cyberspace. Moreover, it was assumed that there would be a new group of bullies that exclusively bully while online. Table 6 presents to what extent there is an overlap in involvement in traditional bullying and cyberbullying.

Rational Choice perspective: the overlap of traditional bullying and cyberbullying				
		no traditional bully	traditional bully	Total
no cyberbully	N	341	33	374
	% within cyber	91.2	8.8	100
	% within traditional	85.9	56.9	82.2
	% of total	74.9	7.3	82.2
cyberbully	N	56	25	81
	% within cyber	69.1	30.9	100
	% within traditional	14.1	43.1	17.8
	% of total	12.3	5.5	17.8
Total	N	397	58	455
	% within cyber	87.3	12.7	100
	% within traditional	100	100	100

Table 6: overlap traditional and cyberbullying

This study found that traditional bullies now also bully while online: although 56.9 percent of the traditional bullies are not a cyberbully, 43.1 percent of the traditional bullies are.

Moreover, there is a new group of bullies: a majority of 69.1 percent of the cyberbullies do not bully while offline.

In addition, an analysis was conducted to control the overlap between involvement in traditional bullying and involvement in the different forms of cyberbullying. The result of this analysis confirms the aforementioned finding. For example, 70 percent (N=35) of the respondents who spread rumours online, did not report bullying another person offline. Moreover, from those respondents who reported having traditionally bullied somebody else in the past couple of months, 26 percent (N=15) has also spread rumours about another person online.

Anonymity and cyberbullying

According to the Rational Choice perspective, the perceived anonymity of cyberspace makes cyberbullying a form of behaviour that poses little risk of getting caught and punished. The

focus groups confirmed this assumption. A boy, for example, stated that: ‘bullying on the internet is, due to the possibility to be anonymous, much easier than traditional bullying’.

The survey also tested to what extent cyberbullying behaviour is conducted anonymously. Two groups of bullies were differentiated for this analysis: (1) all-round bullies and (2) cyberbullies only. All-round bullies are defined as those who bully offline as well as online. The second group consists of those who exclusively bully in cyberspace. Table 7 presents the results of this analysis.

The anonymity of cyberbullies					
		Did the person you cyberbullied know your identity?			
		Yes	No	I don't know	total
all-round bully (bullies off and online)	N	12	5	8	25
	% within all-round bully (row)	48	20	32	100
	% within identity (column)	44.4	31.2	21.1	30.9
	% of total	14.8	6.2	9.9	30.9
cyberbullies only	N	15	11	30	56
	% within all-round bully (row)	26.8	19.6	53.6	100
	% within identity (column)	55.6	68.8	78.9	69.1
	% of total	18.5	13.6	37	69.1
Total	N	27	16	38	81
	% within all-round bully (row)	33.3	19.8	46.9	100
	% within identity (column)	100	100	100	100
	% of total	33.3	19.8	46.9	100

Table 7: anonymity

Overall, 33.3 percent of the cyberbullies reported that the person they cyberbullied knew their identity and 19.8 percent indicated that their victims did not know their identity. However, 46.9 percent reported not knowing whether their last victim knew their identity. Therefore, no definite conclusions can be drawn about the anonymity of cyberbullies.

In addition, there seems to be no difference in the extent to which all-round bullies and those who only bully in cyberspace bully anonymously: 20 percent of the all-round bullies and 19.6 percent of those who only bully in cyberspace report cyberbullying anonymously. However, 48 percent of the all-round bullies report that their last victim knew their identity compared to 26.8 percent of those who exclusively cyberbully. Thus, fewer respondents who only bully in cyberspace report that their victims know their identity. In addition, it is notable that of the 16 respondents who reported bullying anonymously a majority of 68.8 percent (N=11) are those who exclusively bully in cyberspace.

Nevertheless, a Chi-square test reveals that the differences found between all-round bullies and those who only bully in cyberspace are not significant. Therefore, these results should be interpreted with care. In addition, no significant differences were found with regard to anonymity between respondents who were and respondents who were not involved in forms of cyberbullying.

Perceived risks of cyberspace

The focus groups indicated that the risks of getting caught and punished for bullying another person in cyberspace are notably smaller than the risks of getting caught and punished for traditional bullying. In addition, in the survey cyberbullies were asked how big they perceive the chance of getting caught and punished for offline and for online bullying. Since no significant differences were found between all-round bullies and those who only bully in cyberspace, the following graph presents the view of all cyberbullies on the perceived risks of cyberspace (Fig. 3).

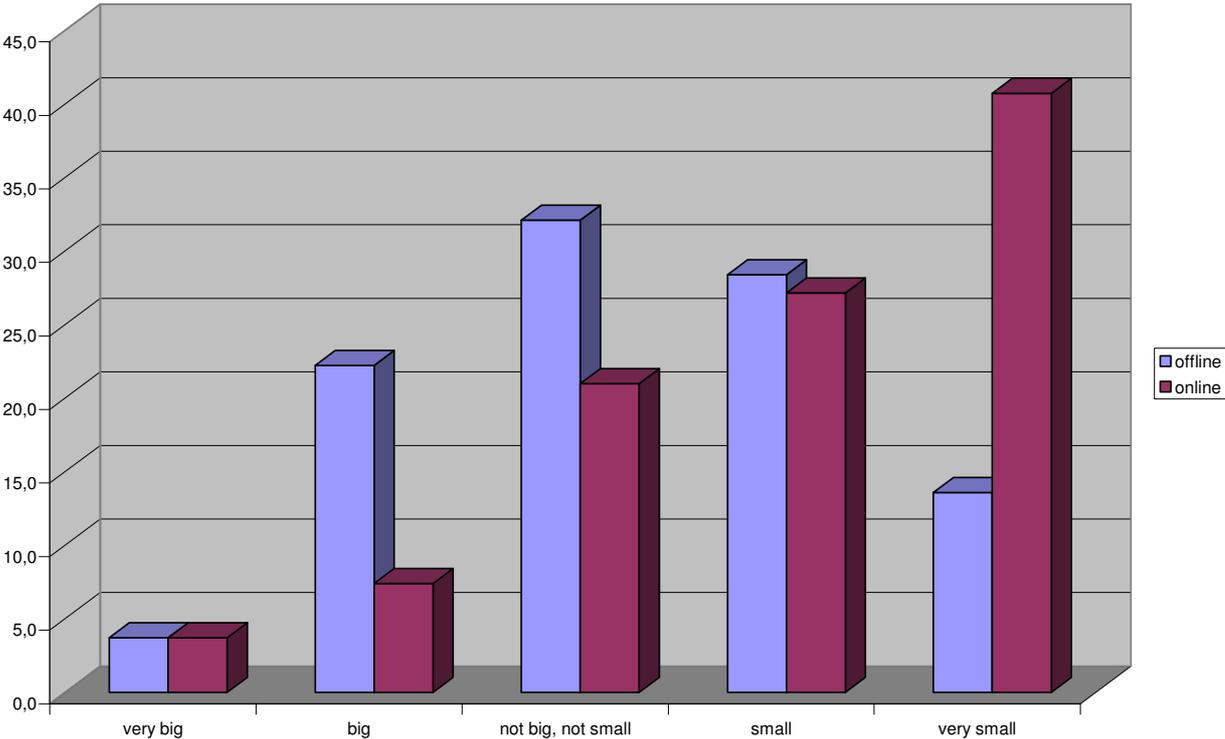


Figure 3: getting caught and punished

Although the difference between getting caught and punished for offline and online bullying seems to be significant ($p=.000$), due to the low number of cyberbullies the chi square test was not reliable, even after combining the categories *very big* and *big* and *very small* and *small*. However, as the results illustrate, the risk of getting caught and punished for online

bullying, as perceived by cyberbullies, is notably smaller than the perceived risk of getting caught and punished for offline bullying. No differentiation is made in the perceived risk of getting caught and punished for the various forms of cyberbullying, because the analysis revealed no reliable or significant results.

The extent of disinhibition

During the focus groups, a respondent mentioned that he had been anonymously cyberbullied. When he found out who the boy was that bullied him, it turned out to be a 'pathetic boy' from school 'who has no guts in real life'. In this case, cyberspace possibly 'disinhibited' the behaviour of the bully. To check whether the internet has a disinhibitive effect on bullies, this study tested to what extent youth feel freed from restraints on their behaviour in cyberspace.

Cyberbullies were found to experience a significantly greater disinhibition effect than non-cyberbullies ($p=.008$). The mean score for non-cyberbullies on the disinhibition scale was 2.63. The mean score for cyberbullies was 2.76. A similar analysis was conducted for the various forms of cyberbullying measured in this study. Due to the low number of bullies within the sample, only the results of the most prevalent forms will be mentioned here. It was found that those who call names or threaten somebody else score significantly higher than those who don't ($p=.003$), those who spread rumours about others score significantly ($P<0.10$) higher than those who don't ($p=.061$) and those who exclude others in cyberspace also score significantly higher than those who don't ($p=.002$).

5.1.4 The Self-Control Hypothesis

Because the Rational Choice perspective does not explain why certain youngsters make the rational decision to cyberbully while others don't, the Self-Control Theory is tested in this study. It is assumed that cyberbullies have a lower extent of self-control than non-cyberbullies.

Testing a self-control construct

Since the construct used to measure self-control was not reliable, this study measured to what extent cyberbullies score different on the various items in the construct than non-cyberbullies. Table 8 presents the results.

Cyberbullying and self-control						
	no cyberbully			cyberbully		
	(almost) never	sometimes	often	(almost) never	sometimes	often
	%	%	%	%	%	%
I am able to concentrate**	7.2	44	48.8	14.8	54.3	30.9
I say things without first thinking them over	28.5	57.3	14.1	22.2	58	19.8
I save money on a regular basis	13.3	33.3	53.3	16	37	46.9
I buy things spontaneously	56.3	32.5	11.2	50.6	35.8	13.6
I plan things I have to do carefully**	20.3	52.8	26.9	31	53.5	15.5
I get bored fast*	33.3	45.6	21.1	23.5	44.4	32.1
I do things spontaneously	10.4	57.9	31.7	12.3	55.6	32.1

Table 8: self-control (*P<0.10; ** P<0.05)

The results reveal that, for all items, cyberbullies seem to have a lower extent of self-control than non-cyberbullies. For example, 7.2 percent of the non-bullies reported never being able to concentrate compared to 14.8 percent of the cyberbullies. The differences between cyberbullies and non-cyberbullies are only significant for the item about concentration ($p=.005$), the item about planning things carefully ($p=.049$) and the item about getting bored ($p=.061$).

An analysis that compared the extent of self-control between respondents who have and respondents who have not conducted the most prevalent forms of cyberbullying confirms the aforementioned finding. The results suggest that respondents who called names or threatened, who spread gossip or rumours or who excluded others in cyberspace have a lower level of self-control than non-cyberbullies. For example, respondents who reported calling another person names are significantly less able to concentrate ($p=.001$), more often say things without first thinking them over ($p=.016$) and get bored faster ($p=.000$) than respondents who did not report calling another person names in the past couple of months.

Attachment with parents

To determine the level of attachment between parents and their children, respondents were asked how they get along with their parents (table 9).

How do you get along with your parents				
	no cyberbully		cyberbully	
	N	%	N	%
Very good	234	62.4	42	51.9
Good	123	32.8	30	37
not good. not bad	18	4.8	9	11.1
Total	375	100	81	100

Table 9: attachment with parents

Overall, respondents seem to get along with their parents quite well. There were no respondents that reported getting along with their parents poorly or very poorly. However, there is a significant difference between cyberbullies and non-cyberbullies ($p=.048$). Cyberbullies report that their relationship with parents is not as good as the relationship between non-cyberbullies and their parents. 51.9 percent of the cyberbullies report getting along very well with their parents compared to 62.4 percent of the non-cyberbullies. Moreover, 11.1 percent of the cyberbullies reported a relationship with parents that is not good and / or not bad, compared to 4.8 percent of the non-cyberbullies.

An analysis that compared how well respondents that did, and how well respondents that did not report conducting the most prevalent forms of cyberbullying, confirms the aforementioned findings. Overall, respondents who called somebody names, who spread rumours or who excluded another person in cyberspace report having an inferior relationship with their parents. However, the difference was only significant for those who called another person names or threatened somebody in the past couple of months ($p=.017$).

The extent of parental supervision

The second factor that influences the level of self-control among youth according to the Self-Control Theory is the extent of parental supervision. Therefore, respondents were asked whether parents monitor their online behaviour (Table 10).

Do your parents monitor your online behaviour?				
	no cyberbully		cyberbully	
	N	%	N	%
yes, often	18	4.8	2	2.5
yes, sometimes	112	29.9	16	19.8
no, never	129	34.4	34	42
I don't know	116	30.9	29	35.8

Table 10: parental monitoring

No significant difference was found in the extent of parental monitoring between bullies and non-bullies. A comparison between the involvement in forms of cyberbullying and the extent of parents monitoring online behaviour of the respondents also found no significant differences. However, overall the results indicate that the online behaviour of cyberbullies is monitored less than the online behaviour of non-cyberbullies. For example, 42 percent of the cyberbullies indicate that their parents never monitor their online behaviour compared to 34.4 percent of the non-cyberbullies.

Rules and consequences

Respondents were subsequently asked whether their parents set rules; whether they adhere to the rules and to what extent parents control whether their children adhere to the rules.

A Chi-square test for independence (With Yate Continuity Correction) indicated that, with 90 percent certainty ($P < 0.10$), there is a significant difference in the extent in which parents set rules for using the internet between cyberbullies and non-cyberbullies ($p = .069$). 42 percent of the parents of cyberbullies set internet rules compared to 53.9 percent of the parents of non-cyberbullies.

Are there rules about what you can and can't do online?				
	no cyberbully		cyberbully	
	N	%	N	%
No	173	46.1	47	58
Yes	202	53.9	34	42
Total	375	100	81	100

Table 11: internet rules

A comparison between the involvement in the most prevalent forms of cyberbullying and the extent in which parents set rules showed that parents of respondents who called names or threatened somebody in cyberspace set internet rules significantly less than parents of respondents who have not called names or threatened another person on the internet ($p = .041$). In addition, although not significant, the results indicate that parents of respondents who spread rumours or exclude others in cyberspace also set less internet rules than parents of non cyberbullies

Furthermore, as table 12 illustrates, cyberbullies seem to adhere to the rules less than non-cyberbullies.

Do you adhere to the internet rules				
	no cyberbully		cyberbully	
	N	%	N	%
Never	3	1.5	2	5.9
usually not	5	2.5	3	8.8
Sometimes	23	11.4	7	20.6
Usually I do	97	48	14	41.2
Always	74	36.6	8	23.5

Table 12: adhering to internet rules

14.7 percent of the cyberbullies report never or usually not adhering to the internet rules, compared to 4 percent of the non-cyberbullies. Moreover, 64.7 percent of the cyberbullies indicate usually or always adhering to the internet rules compared to 84.7 percent of the non-

cyberbullies. A chi square test indicates that the difference found is significant ($p=.044$), however – even after combining the answer categories never and usually not, and usually and always – the test was not reliable because over 20% of the cells had an expected count of less than 5.

A comparison between the involvement in the most prevalent forms of cyberbullying and the extent to which respondents adhere to the rules showed similar results: those who call another person names, spread rumours or exclude somebody else in cyberspace seem to adhere to internet rules of parents less than those who are not involved in these forms of bullying. However, these results were not significant.

In addition, respondents were asked to what extent their parents control whether or not they adhere to the rules (Table 13).

To what extent do your parents control the internet rules?				
	no cyberbully		cyberbully	
	N	%	N	%
Never	24	12	6	18.2
usually not	30	15	4	12.1
Sometimes	36	18	8	24.2
Usually I do	44	22	5	15.2
Always	12	6	1	3
I don't know	54	27	9	27.3
Total	200	100	33	100

Table 13: parental control on internet rules

Overall, parents of cyberbullies control whether their children adhere to the internet rules less than parents of non-cyberbullies. 30.3 percent of the cyberbullies reported that their parents never or usually not control the internet rules that apply to them, compared to 27 percent of the non-cyberbullies. Moreover, 18.2 percent of the cyberbullies indicated that their parents usually or always control the internet rules that apply to them, compared to 28 percent of the non-cyberbullies. However, a Chi-square test indicated – even after recoding the answers to four categories - that this difference was not significant. Similar, non-significant, results were found when controlling for the most prevalent forms of cyberbullying.

5.2 Victims of cyberbullying

5.2.1 Nature and prevalence

Overall, 19.3 percent (N=88) of the respondents in this study reported being a victim of cyberbullying in either the explicit measure or the measure of the diverse forms. Table 14 differentiates between the explicit and the implicit measures.

The nature and prevalence of (cyber) bullying	Victimization	N
victim of traditional bullying	15.1	69
victim of cyberbullying (explicit measure)	4.6	21
called names or threatened	7.0	32
received offensive pictures or movies	2.6	12
gossip and rumours	11.0	50
public posting, sending, or forwarding personal images or movies	1.3	6
Exclusion	3.3	15

Table 14: nature and prevalence

The explicit measures show that being a victim of traditional bullying (15.1%) occurs more often than being a victim of any form of cyberbullying. Although the differences seem to be significant, chi square tests - except for the difference between traditional bullying and spreading gossip or rumours in cyberspace ($p=.000$) - revealed no reliable results due to the small number of victims. Victims report gossiping and spreading rumours (11%) and calling names or being threatened (7%) as the most prevalent forms of cyberbullying.

As was the case with offenders of cyberbullying, victims also apparently do not perceive spreading rumours and or calling names or threatening somebody as forms of bullying, since they report higher scores on the measures of this forms than on the explicit measure for cyberbullying.

5.2.2 Victim characteristics

Gender

Table 15 presents the gender distribution of non-victims and victims (Table 15).

The gender of victims				
	No victim		Victim	
	N	%	N	%
Male	202	54.9	47	53.4
Female	166	45.1	41	46.6
Total	368	100	88	100

Table 15: gender

No significant gender differences between victims and non-victims of cyberbullying were found. In addition, an analysis was also conducted to see whether there were gender differences in victimization of one of the forms of cyberbullying. A Chi-square test for independence (With Yate Continuity Correction) indicated that, with 90 percent certainty ($P < 0.10$), boys are significantly more often excluded in cyberspace than girls ($p = .080$). No other significant gender differences were found.

Age distribution

Table 16 presents the age distribution of victims and non-victims in the sample. No significant differences in age between victims and non-victims were found.

The age of victims					
	No victim		Victim		
	N	%	N	%	
10	23	6.2	5	5.7	
11	31	8.4	7	8	
12	66	17.9	13	14.8	
13	81	22	16	18.2	
14	56	15.2	23	26.1	
15	72	19.6	14	15.9	
16	31	8.4	8	9.1	
17	8	2.2	2	2.3	
Total (N=456)	368	100	88	100	

Table 16: age

An analysis that was conducted to see if there were any age differences between cyberbullies and non-cyberbullies and the forms of cyberbullying they use, did not reveal reliable results and will therefore be disregarded.

Educational level

This study found no significant differences in the educational level of victims compared to the educational level of non-victims, as shown in Table 17.

The educational level of victims					
		No victim		Victim	
		N	%	N	%
Educational level	Primary School	55	14.9	14	15.9
	Secondary school 'vmbo'	140	38	40	45.5
	Secondary school 'havo-vwo'	173	47	34	38.6
	Total (N=456)	368	100	88	100

Table 17: educational level

However, as figure 4 illustrates, there are some significant differences when educational level and involvement in forms of cyberbullying are compared.

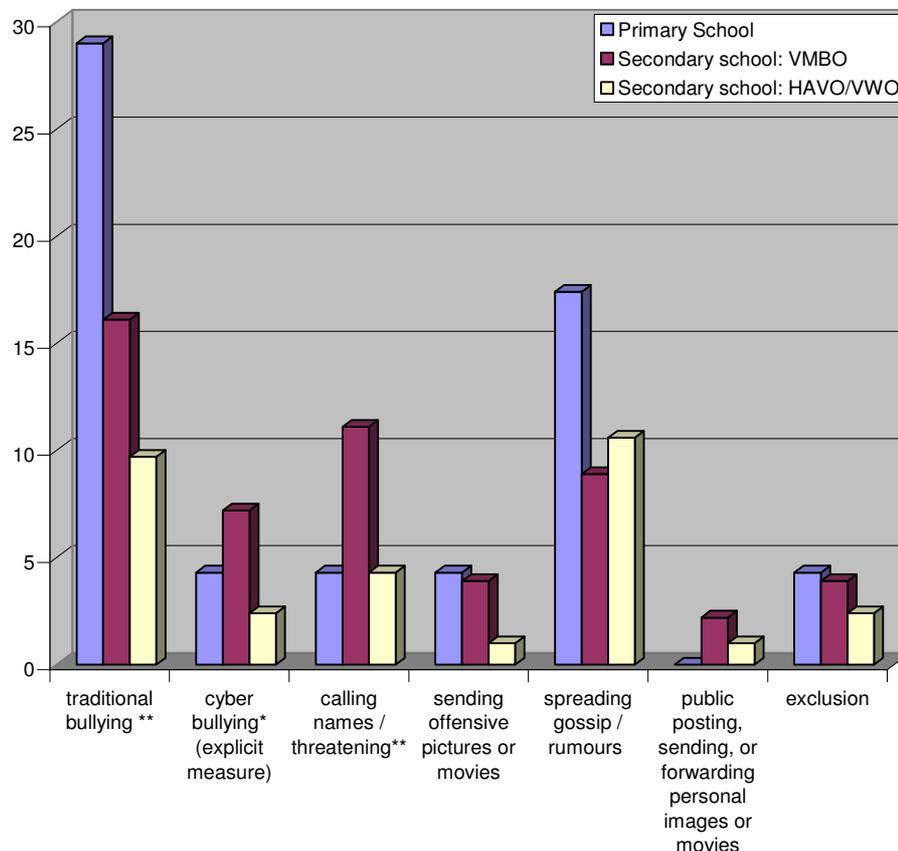


Figure 4: educational level*forms of cyberbullying (* $p < 0.10$; ** $P < 0.05$)

Firstly, a significant difference in educational level and victimization of traditional bullying was found ($p = .000$). Traditional bullying occurs significantly more often in primary school than in the various levels of secondary school. 29 percent of the primary school respondents reported being the victim of traditional bullying compared to 16.1 percent of the secondary school respondents from the VMBO and 9.7 percent of the HAVO/VWO respondents.

Furthermore, a significant difference in educational level and victimization of cyberbullying was found ($p = .079$). Victims of cyberbullying are more often VMBO students (7.2%), than primary school pupils (4.3%) or HAVO-VWO students (2.4%). In addition, victims who reported being threatened or called names are significantly more often VMBO students (11.1%) than primary school pupils or HAVO-VWO students (4.3%) ($p = .022$). No other significant differences between educational level and victimization of forms of (cyber) bullying were found.

5.2.3 The Routine Activity Theory Hypothesis

In line with the Routine Activity Theory, it is assumed that there is a convergence of three minimal elements in cyberspace: a likely offender, a suitable target and the absence of a capable guardian.

The presence of motivated offenders

Firstly, the presence of motivated offenders in cyberspace was examined. 17.8 percent of the respondents (N=81) reported being involved in (a form of) cyberbullying. These respondents were subsequently asked, through a multiple choice question, why they bullied somebody else in cyberspace. The results indicate that cyberbullies have divergent motivations for their behaviour. The following table provides an overview of reported reasons to bully somebody else in cyberspace (Table 18).

Motivation of cyberbullies		
	N	%
Because he or she bullies me to	25	25
To take revenge	22	22
For fun	17	17
Because of a disagreement in an online game	5	5
Because my friends also bully	4	4
Because I am jealous of the person I bully	1	1
Other: the respondent did not see the last incident as bullying	21	21
Other: no valid reason	5	5
Total	100	100

Table 18: motivation

The most prevalent motivations for cyberbullying are: because bullies are bullied themselves and, as a reaction, they bully back (25%), because bullies wanted to take revenge for something the victim did to them (22%) and for fun (17%). Another answer that was frequently given indicated that respondents do not see forms of cyberbullying, such as calling another person names or spreading rumours about somebody else, as bullying. In that case respondents for example answered: ‘I haven’t bullied anyone’.

The presence of suitable targets

Furthermore, the presence of suitable targets in cyberspace was measured. Previous studies suggest that youth who are online more often and youth who use the internet for communicative purposes more often than their peers more frequently become cyberbully victims. Therefore, several measures were included to determine to what extent youth are online and for what purposes youth use the internet. First, respondents were asked how much time they spend online (Table 19).

Time spent online				
	No victim		Victim	
	N	%	N	%
< 1 hour per day	80	21.7	8	9.1
1 hour per day	119	32.3	27	30.7
2 hours per day	96	26.1	28	31.8
3 hours per day	31	8.4	13	14.8
4 hours per day	10	2.7	5	5.7
> 5 hours per day	32	8.7	7	8
Total	368	100	88	100

Table 19: time online

A Chi-square test for independence indicated that, with 95 percent certainty ($p < 0.05$), victims spend significantly more time online than respondents who reported not being a victim of (a form of) cyberbullying ($p = .039$). An analysis that compared the amount of time victims and non-victims of forms of cyberbullying spend online, revealed no reliable results and are therefore disregarded.

Next, respondents were asked to indicate which internet applications they use most. The focus groups indicated that the internet is mainly used for communicative purposes: especially Instant Messaging and Social Networking Sites seem to be popular. The survey found similar results: the 387 respondents from secondary school report that the internet is mainly used for Instant Messaging (64.3%), playing online games (40.3%) and using Social Networking Sites (35.7%). Subsequently an analysis was conducted to see whether the online activities of cyberbully victims differ from the online activities of non-victims (Table 20). The results reveal that victims of cyberbullying report using Instant Messaging significantly more than non-victims ($p = .001$).

Online activities				
	No victim		Victim	
	N	%	N	%
Playing online games	126	40.3	30	40.5
e-mail	31	9.9	4	5.4
Surfing / looking for information	45	14.4	5	6.8
Downloading	36	11.5	8	10.8
Chatting in a public chatroom	8	2.6	2	2.7
Instant messaging**	189	60.4	60	81.1
Blogging	1	0.3	0	0
Twitter	19	6.1	1	1.4
Social Networking Sites	112	35.8	26	35.1
gambling	6	1.9	2	2.7
Youtube	4	1.3	0	0
Listening to music	2	0.6	0	0
** $p < 0.05$				

Table 20: online activities (** $P < 0.05$)

In addition, an analysis was conducted to see whether the use of certain internet applications increases the chance of being the victim of a form of cyberbullying. The analysis revealed that victims who were called names ($p=.006$) and victims who were spread rumours ($p=.001$) use Instant Messaging significantly more.

The 69 respondents from primary school were asked a slightly different question. Primary school respondents had to indicate how often they use the various internet applications. Answer categories were, on a 5-point scale, from never to very often. They indicated mainly using the internet for similar purposes as secondary school respondents. Internet is mainly used to visit Social Networking Sites (72.5%), play online games (42%), to search for information (31.8%) or to chat with their friends via Instant Messaging (28.9%). Similar to the Secondary school results, primary school victims of cyberbullying seem to use IM more often than non-victims. However, because only 14 (20.3%) of the respondents from primary school were victims of cyberbullying, the N was too low to find significant differences between victims and non-victims (even after combining the answers *never* and *almost never*, and *often* and *very often*). For that same reason, an analysis that was conducted to see whether the use of certain internet application increases the chance of being the victim of a form of (cyber)bullying did not reveal any reliable results and will be disregarded.

The absence of capable guardians

As was found in the literature, the focus groups indicated that the extent of parental mediation regarding to internet behaviour is low. The survey results regarding the influence of parents as capable guardians are presented below.

Attachment with parents

First, respondents were asked to indicate how well they get along with their parents (Table 21).

How do you get along with your parents				
	No victim		Victim	
	N	%	N	%
Very good	231	62.8	45	51.1
Good	121	32.9	32	36.4
not good, not bad	16	4.3	11	12.5
Total	368	100	88	100

Table 21: getting along with parents

None of the respondents indicated getting along with their parents poorly or very poorly. Overall, the respondents in this study get along with their parents quite well. However a significant difference was found between victims and non-victims of cyberbullying ($p=.007$). Victims of cyberbullying do not get along with their parents as well as non-victims. The percentage of victims that report getting along with parents very well (51.1%) is notably smaller than the percentage of non-victims that report getting along their parents very well (62.8%). Moreover, almost three times as many victims as non-victims reported getting along with their parents ‘not good, not bad’.

Supplementary analyses confirm the aforementioned finding. Overall, respondents who were the victim of a form of cyberbullying reported having a worse relationship with their parents. The difference found between victims and non-victims was significant for those who were called names ($p=.006$) and those who were spread rumours about ($p=.005$).

The extent of parental supervision

To measure the influence of parents as capable guardians against cyberbullying, subsequently several questions were asked about parental supervision and monitoring. Firstly, respondents were asked to what extent their parents monitor the time they spent on the internet. The following table differentiates between the extent of parental monitoring of victims and non-victims (Table 22).

Parental monitoring: time spent online				
	no victim		Victim	
	N	%	N	%
(almost) always	82	22.3	13	14.8
Sometimes	190	51.6	46	52.3
Never	96	26.1	29	33
Total	368	100	88	100

Table 22: parental monitoring - time online

No significant difference was found in the extent to which parents of victims monitor the time their child(ren) spend online compared to the extent of parental monitoring of non-victims. However, the results suggest that the time spent online by victims is less monitored than the time spent online by non-victims. 14.8 percent of the victims report that the time they spent online is (almost) always monitored, compared to 22.3 percent of the non-victims. Moreover, 33 percent of the victims indicate that the time they spent on the internet is never monitored compared to 26.1 percent of the non-victims. In addition, a supplementary analysis was conducted that controlled parental monitoring of time spent online for the various forms of

cyberbullying. The time spent online by respondents who were called names or threatened, is, with 90 percent certainty ($P < 0.10$), significantly less monitored by parents than the time spent online by those who were not called names or threatened ($p = .085$). The results of this analysis for the other forms of cyberbullying were not significant and/or reliable and will therefore be disregarded.

Next, respondents were asked ‘do your parents monitor your online behaviour?’. The following table presents the results (Table 23).

Do your parents monitor your online behaviour?				
	No Victim		Victim	
	N	%	N	%
yes, often	15	4.1	5	5.7
yes, sometimes	105	28.5	23	26.1
no, never	130	35.3	33	37.5
I don't know	118	32.1	27	30.7
Total	368	100	88	100

Table 23: parental monitoring

There is no significant difference between the extent of parental monitoring of victims and non-victims of cyberbullying. A comparison between victimization of forms of cyberbullying and the extent of parental monitoring of online behaviour of the respondents also found no significant differences.

Rules and consequences

Furthermore, the influence of parents as capable guardians against cyberbullying was measured by asking whether parents set rules, whether respondents adhere to the rules and to what extent parents control whether their children adhere to the rules.

The extent to which parents of victims set rules for using the internet does not significantly differ from the extent to which parents of non-victims set internet rules. Nevertheless, as the figures in the table illustrate, the results indicate that parents of victims set rules to a smaller extent (48.9%) than parents of non-victims (52.4%).

Are there rules about what you can and can't do online?				
	no victim		victim	
	N	%	N	%
No	175	47.6	45	51.1
Yes	193	52.4	43	48.9
Total	375	100	81	100

Table 24: internet rules

The results of a supplementary analysis that compared the extent to which parents set rules to victimization of the various forms of cyberbullying revealed no significant and/or reliable findings and will therefore be disregarded.

Next, respondents were asked whether they adhere to the rules. As table 25 illustrates, cyberbully victims seem to adhere to the rules less than non-cyberbullies: 13.9 percent of the victims report never or usually not adhering to the internet rules, compared to 3.7 percent of the non-cyberbullies.

Do you adhere to the internet rules				
	no victim		Victim	
	N	%	N	%
Never	4	2.1	1	2.3
usually not	3	1.6	5	11.6
Sometimes	19	9.8	11	25.6
Usually I do	94	48.7	17	39.5
Always	73	37.8	9	20.9
Total	193	100	43	100

Table 25: adhering to internet rules

Moreover, 60.4 percent of the victims indicate usually or always adhering to the internet rules compared to 86.5 percent of the non-victims. A chi square test indicates that – after combining the answer categories never & usually not and usually & always – the difference found is significant ($p=.000$). A supplementary analysis that compared adhering to internet rules for victimization of the various forms of cyberbullying found similar results: those who were the victim of any of the forms included in this study adhere to the rules to a smaller extent than non-victims. However, these results were not significant.

In addition, respondents were asked to what extent their parents control whether or not they adhere to the rules (table 26).

To what extent do your parents control the internet rules?				
	no victim		Victim	
	N	%	N	%
Never	22	11.6	8	18.6
Usually not	27	14.2	7	16.3
Sometimes	34	17.9	10	23.3
Usually I do	42	22.1	7	16.3
Always	9	4.7	4	9.3
I don't know	56	29.5	7	16.3
Total	190	100	43	100

Table 26: parental control on internet rules

Overall, parents of victims seem to control whether their children adhere to their internet rules to a lesser extent than parents of respondents who were not the victim of cyberbullying. 25.6 percent of the victims indicated that their parents usually or always control the internet rules that apply to them, compared to 26.8 percent of the non-cyberbullies. Moreover, 34.9 percent of the victims reported that their parents never or usually not control the internet rules that apply to them, compared to 25.8 percent of the non-cyberbullies. Nevertheless, these results were not significant. In addition, similar non-significant results were found when controlling for the various forms of cyberbullying.

5.2.4 Effects of cyberbullying

Respondents who reported being the victim of a form of cyberbullying were asked to indicate to what extent the last cyberbullying incident upset them. The following graph shows that, overall, victims more often indicate being upset than not upset as a consequence of the bullying. However, it should be kept in mind that the number of victims for each form of cyberbullying is low.

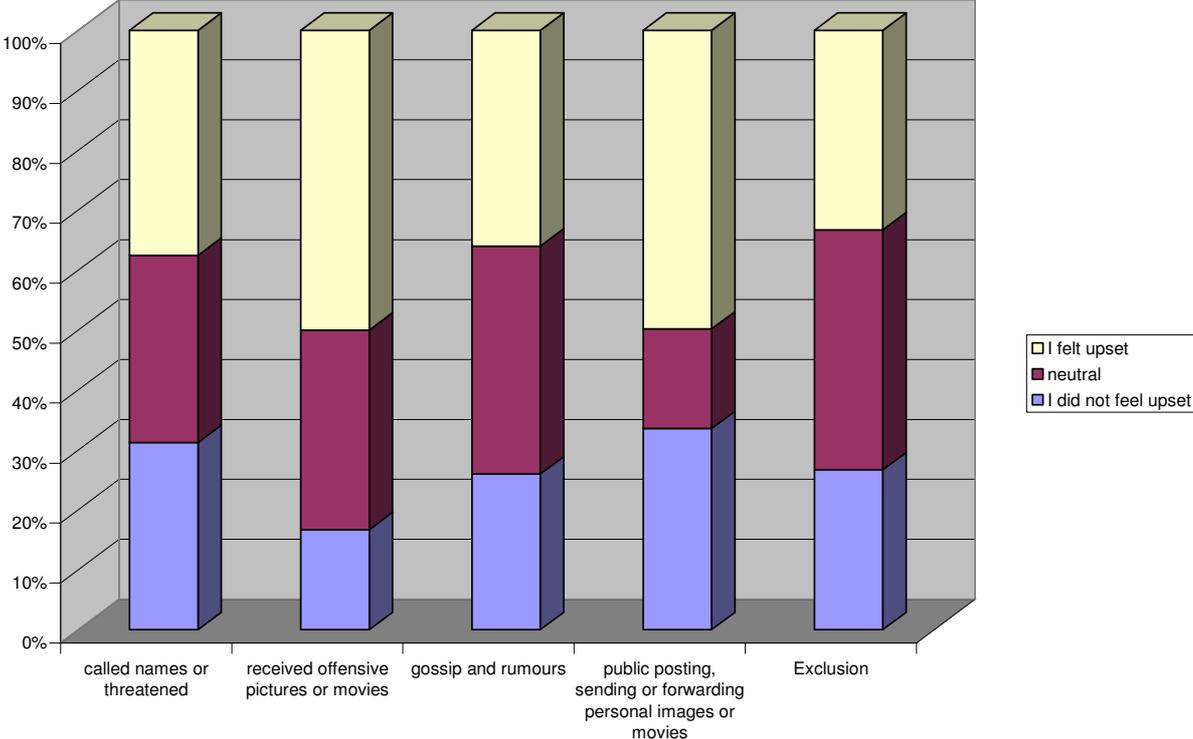


Figure 5: extent of feeling upset

In addition, a 13-item construct was used to measure the psychosocial well-being of respondents. Answers were (re)coded from 1 (a good psychosocial well-being) thru 5 (a poor psychosocial well-being). Therefore, the higher the score on this construct, the worse the

psychosocial well-being of respondents. Overall, the psychosocial well-being of victims of cyberbullying is significantly worse than the psychosocial well-being of respondents who did not report being a victim of cyberbullying ($p=.001$). The mean score of non-victims on the scale is 2.23 compared to a score of 2.41 for victims of cyberbullying.

A comparison of the psychosocial well-being between victims of forms of cyberbullying and non-victims confirms the aforementioned findings. Respondents who were called names or threatened ($p=.001$), victims of gossip and rumours ($p=.004$) and victims of exclusion, score significantly lower on the well-being scale than non-victims.

Furthermore, bivariate analysis reveal that victims especially feel more insecure ($p=.012$), they more often feel down or depressed ($p=.000$), they more often feel nervous or tensed ($p=.069$), they more often feel useless ($p=.013$) and indicate to have less to be proud of than non-victims ($p=.004$). No significant differences between victims and non-victims were found for the other items in the psychosocial well-being construct.

Next, no significant difference in the effects on psychosocial well-being between victims of traditional and victims of cyberbullying was found. Finally, no significant difference was found between victims of both traditional as well as cyberbullying and victims of cyberbullying only.

6. Discussion & Conclusion

In this chapter, the research results and their wider significance are discussed. The chapter is divided into five sections. First, the results with regard to offenders will be discussed (section 6.1). Subsequently the results with regard to victims are addressed (section 6.2). In addition, it is discussed to what extent this study contributed to measures against cyberbullying (section 6.3). Next, the limitations of this study are described (section 6.4). This chapter ends with the main conclusions that are derived from the study.

6.1 Offenders

Nature and prevalence

In all, 17.8 percent of the respondents reported being the perpetrator of any form of cyberbullying in the past months. The most prevalent forms are spreading rumours (11%), excluding another person (4.8%) and calling names or threatening (4.2%) somebody else in cyberspace. Consistent with literature, traditional bullying is more prevalent than cyberbullying.

Characteristics

Within the total group of respondents that reported being the perpetrator of any form of cyberbullying (17.8%) no gender differences were found. However, supplementary analysis revealed some significant differences between the involvement of boys and girls in the various forms of cyberbullying. As was found in the literature, girls seem to be involved in indirect forms of cyberbullying more than boys. Boys seem to be the perpetrators of direct forms of cyberbullying more often than girls. In this study girls reported spreading rumours significantly more often than boys and boys indicated excluding others significantly more often than girls.

No significant age differences were found between cyberbullies and non-cyberbullies. Nevertheless, cyberbullies appear to be between 14 and 16 years old more often than non-cyberbullies.

Overall, the educational level of cyberbullies does not significantly differ from the educational level of non-cyberbullies. However, there are some significant differences when educational level and involvement in forms of cyberbullying are compared: traditional bullying occurs significantly more often in primary school than in the various levels of

secondary school; there are significantly fewer cyberbullies (explicit measure) in the 'HAVO-VWO' group of respondents compared to the other educational levels; and respondents from the 'VMBO' group reported calling somebody names and excluding others in cyberspace significantly more often than respondents from the other educational levels.

Rational Choice Hypothesis

Rational Choice Theory states that deviant behaviour is the result of an assessment of costs and benefits whereby the benefits outweigh the costs. Since the literature suggests that the risks involved with cyberbullying are small, it was expected that cyberbullying is a rational choice. The results seem to confirm rather than reject this hypothesis.

Firstly, it was assumed that, because cyberspace seems to be a low risk environment for bullying, compared to the offline world, some traditional bullies would now also bully while online. Furthermore it was assumed that there would be a group of bullies that exclusively bully in cyberspace. For the latter group, the characteristics of the Internet have affected their rational choice. Because of the high risks involved with traditional bullying they previously did not conduct this kind of deviant behaviour. However, because of the relatively low risks involved with cyberbullying, they do conduct such behaviour. The research results confirmed this assumption.

Furthermore, the perceived anonymity of cyberspace makes cyberbullying a form of behaviour that poses little risk of getting caught and punished. Therefore it was expected that cyberbullies would conduct their behaviour anonymously. Since almost half of the cyberbullies reported not knowing whether their last victim knew their identity, no definite conclusions can be drawn about the anonymity of cyberbullies. Nevertheless, the results indicate that all-round (traditional- and cyber)bullies less often bully anonymously than those who exclusively cyberbully. Moreover, of all respondents who reported bullying anonymously, a majority of 68.8 percent are those who exclusively bully in cyberspace. Since these findings suggest that the perceived anonymity of cyberspace plays a bigger role for those who exclusively bully online than for all-round bullies, one could arguably state that this result supports the rational choice hypothesis.

In addition, the risk, as perceived by cyberbullies, of getting caught and punished for online bullying is notably smaller than the perceived risk of getting caught and punished for offline bullying.

Finally, cyberbullies indicate feeling free from restraints on their behaviour in cyberspace. They experience a significantly greater 'disinhibition effect' than non-

cyberbullies and are therefore less restrained to conduct deviant behaviour such as cyberbullying.

Self-Control hypothesis

Since the Rational Choice hypothesis does not explain why certain youngsters make the rational decision to cyberbully while others don't, Self-Control Theory was used to explain engagement in cyberbullying. The results of this study suggest that the theory provides an appropriate framework to explain engagement in cyberbullying.

Firstly, cyberbullies scored worse on all items in a self-control construct, which indicates that cyberbullies have a lower extent of self-control than non-cyberbullies. Cyberbullies are, for example, significantly less able to concentrate and get bored significantly faster than non-cyberbullies.

According to the Self-Control Theory, a good bond between parents and their children is essential to prevent deviance. Although respondents generally report getting along with their parents quite well, cyberbullies report that the relationship with their parents is significantly poorer than the relationship between non-cyberbullies and their parents.

Hence, the results of this study indicate that the online behaviour of cyberbullies is supervised less than the online behaviour of non-cyberbullies. Since the theory suggests that parental supervision is important to prevent deviance, these results confirm rather than reject the Self-Control hypothesis. However, since the difference was not significant, this result should be interpreted with care.

Finally, consistent with the theory, parents of cyberbullies seem to be less able to recognize deviant behaviour. Parents of cyberbullies set significantly fewer rules than parents of non-cyberbullies. In addition, cyberbullies adhere to these rules less than non-cyberbullies. Finally, although not significant, parents of cyberbullies exert less control over their children adhering to internet rules than parents of non-cyberbullies.

6.2 Victims

Nature and prevalence

Overall, 19.3 percent of the respondents reported being a victim of (a form of) cyberbullying.

Gossiping and spreading rumours (11%) and being called names or threatened (7%) are the most prevalent forms of cyberbullying. Traditional bullying occurs more often than any form of cyberbullying.

Characteristics

Within the group of victims of (any form of) cyberbullying, no significant gender differences were found. However, supplementary analysis revealed that boys are excluded significantly more often than girls.

In addition, no significant age differences were found between cybervictims and non-victims. Nevertheless, the results suggest that victims are 14 years old more often than non-victims.

Overall, the educational level of victims does not significantly differ from the educational level of non-victims. However, there are some significant differences when comparing educational level and involvement in forms of cyberbullying: traditional bullying occurs significantly more often in primary school than in the various levels of secondary school. Furthermore, victims of cyberbullying (explicit measure) are VMBO students significantly more often than primary school pupils or HAVO-VWO students. In addition, respondents from the 'VMBO' group reported being called names or threatened more often than respondents from the other educational levels.

Routine Activity Theory Hypothesis

According to the Routine Activity Theory (RAT), there has to be a convergence of likely offenders, suitable targets and an absence of capable guardians for deviance to occur. This study confirmed rather than rejected the RAT hypothesis.

Firstly, as the prevalence rates suggest, offenders are present in cyberspace. Moreover, they seem to be motivated. After all, offenders reported bullying another person mainly because they are bullied themselves and as a reaction they bully back or because they want to take revenge for something else the victim did to them. Another frequently given answer was that cyberbullying was conducted 'for fun'. Smith *et al.* (2008: 383) conclude that cyberbullies might find it 'funny' to share their abusive actions with their gang. Furthermore, they state that the 'fun' factor could be an alternative to seeking revenge or that cyberbullies see it as 'fun' when someone else is humiliated. However, cyberbullying for fun can also mean that cyberbullies do not have the intention to hurt their victims. Since RAT assumes a likely offender to be someone who is motivated and has bad intentions, in the latter case it is

impossible to conclude that perpetrators are motivated. Therefore, supplementary research is needed to gain more insight in the motivation of cyberbullies.

Furthermore, suitable targets seem to be present in cyberspace. Previous studies suggest that youth who are often online and youth who use the internet for communicative purposes more often than their peers more frequently become cyberbully victims. This study confirms these findings. Victims spend significantly more time online than non-victims. Moreover, victims of cyberbullying report using Instant Messaging significantly more than non-victims.

Finally, the RAT assumes that an absence of capable guardians is crucial for deviance to occur. In accordance with the theory, this study found that parents of victims are less capable to protect their children from cyberbullying than parents of non-victims. Firstly, the bond between victims and their parents is significantly poorer than the bond between non-victims and their parents. Furthermore, although no significant differences were found in the extent of parental monitoring between victims and non-victims, supplementary analysis showed that parents of respondents who were called names or threatened, monitor the time their children spend online significantly less than parents of non-victims. Moreover, the results indicate that parents of victims set fewer internet rules than parents of non-victims. Victims of cyberbullying adhere to these rules to a significantly smaller extent than non-victims and, in addition, parents of victims seem to control whether their children adhere to their internet rules less than parents of non-victims.

Effects

Overall, the psychosocial well-being of victims of cyberbullying is significantly worse than the psychosocial well-being of respondents who did not report being a victim of cyberbullying. Especially respondents who were called names or threatened, victims of gossip and rumours and victims of exclusion, score significantly lower on the well-being scale than non-victims. Furthermore, bivariate analyses reveal that victims feel more insecure, they more often feel down or depressed, they more often feel nervous or tensed, they more often feel useless and indicate to have less to be proud of than non-victims. Finally, in contradiction to what was found in the literature, no significant difference in the effects on psychosocial well-being between victims of traditional and victims of cyberbullying was found.

6.3 Measures against cyberbullying

One of the main goals of this study was to contribute to the development of measures against cyberbullying. Several findings in this study can be used to inform prevention strategies.

Firstly, since this study found that boys and girls use different forms of cyberbullying, measures should be gender and form specific. Furthermore, forms of cyberbullying especially seem to be prevalent amongst VMBO scholars. Therefore, it seems worthwhile to focus measures on this group. Hence, it was found that victims spend significantly more time online and use Instant Messaging significantly more than non-victims. Therefore, measures to prevent victimization should be directed especially towards youth who spent an above average amount of time on the internet and, especially, on Instant Messaging.

The results indicate that youth feel freed from restraints on their behaviour in cyberspace. Moreover, respondents see cyberspace as an environment where the risks of bullying behaviour are small. Therefore, the perceived risks of cyberspace should increase. As Mesch (2009) also concluded, parents seem to have an essential role in this. Firstly, parents have to work on their relationship with their children: cyberbullies as well as victims indicate getting along with their parents less well than non-cyberbullies or victims.

Furthermore, parents should monitor the online behaviour of their children. Although not significant, the results suggest that the online behaviour of bullies as well as victims is monitored less. Parents of cyberbullies set rules to a significantly smaller extent than parents of non-cyberbullies and, although not significant, parents of victims also set fewer rules than parents of non-victims. Therefore, setting rules seems to have a preventative effect.

Furthermore, it is important to control the internet rules, because the findings suggest that parents of cyberbullies and victims control internet rules to a smaller extent than parents of non-cyberbullies and victims.

6.4 Limitations

Some limitations of this study warrant attention before drawing a final conclusion.

This study is about causes of cyberbullying. However, merely correlations between variables were found. Therefore, causality cannot be inferred from the results. In addition, since respondents were recruited from a random sample of two Dutch schools, the research findings are not generalizable for Dutch youth from 10 to 17 years old. Furthermore, due to the low number of cyberbullies and victims, a substantial part of the analysis conducted in this study did not reveal significant or reliable results. Therefore, it is recommended that future

research is conducted amongst a larger, representative group of respondents. Despite the fact that all correlations found confirm rather than reject the hypotheses that underlie this study, the aforementioned limitations indicate that the results should be interpreted with care.

Furthermore, due to the small number of cyberbullies and victims in the sample, it was impossible to distinguish between the Bully/Victim Questionnaire response alternatives. Therefore, the results presented relate to all cyberbullying incidents, whether they occurred once or twice in the past months or several times a week. Although disagreements exist about what 'repeatedly' is and over how long a period of time bullying has to occur (Slonje and Smith, 2008; David Ferdon and Feldman Hertz, 2007), it is questionable whether – considering the definition of cyberbullying – all incidents in this study should be called bullying. After all, if cyberbullying occurred only once or twice in the past months it seems to be incidental rather than repetitive in nature. To be able to distinguish between incidental and repetitive bullying, the number of respondents in future research should be larger.

In addition, the commonly used definition for cyberbullying is questionable. As long as cyberbullying is only an extension of traditional bullying, the elements of intention, repetition and power imbalance are easy to determine. However, to determine these elements in bullying behaviour that exclusively takes place in cyberspace is no sinecure. Firstly, to determine 'repetition' in cyberspace is problematic. For example, if a victim rereads an aggressive posting on the internet about him or her or if such a message becomes widely disseminated in cyberspace, does it remain one incident or does it become a repeated act (David Ferdon and Feldman Hertz, 2007)? Secondly, the absence of relational clues in cyberspace impedes determining the intention of bullying behaviour. As Smith *et al.* (2008: 383) illustrate: 'In cyberbullying, the perpetrator is less likely to see any direct response from the victim; this might reduce direct gratification for pupils who enjoy watching pain inflicted on others, but might also reduce any inhibition of inflicting pain due to empathy at seeing the victim's distress'. Finally, determining the power imbalance between a bully and a victim in cyberspace is complicated. For instance, in traditional bullying there often is an imbalance in physical power between the bully and the victim (Campbell, 2005, cited in Walrave *et al.*, 2009). However, in (anonymous) cyberbullying, components like physical strength do not necessarily play a role (Strom & Strom, 2005). Overseeing this critique, it is questionable whether the commonly used definition of cyberbullying is applicable.

Furthermore, this study found that respondents do not see forms of cyberbullying, such as calling another person names or spreading rumours about somebody else, as bullying.

When respondents who conducted these forms of bullying were asked what their motivations for bullying were, some of them reported that they did not bully anyone. For supplementary research it is therefore recommended to ask these respondents for their motivations to, for example, call names or spread rumours instead of asking them for their motivations to bully.

Moreover, the results seem to confirm the Rational Choice perspective: respondents perceive cyberspace as a low-risk environment and therefore make the rational decision to bully. However, considering this finding, it is remarkable that, as was found in the literature, traditional bullying is still more prevalent than any form of cyberbullying. Therefore, an interesting question for future research is why traditional bullying occurs more often than cyberbullying while bullying in cyberspace is perceived to be less risky.

6.5 Final considerations

Despite the aforementioned limitations, the findings indicate that the criminological perspectives that underlie this study provide an appropriate framework to explain causes of cyberbullying. Therefore, this study obtained its primary goal to contribute to understanding causes of cyberbullying. Furthermore, the study resulted in new insights with regard to measures against cyberbullying. Overall, the results indicate the need for more parental mediation to reduce cyberbullying. Finally, this study suggests that existing criminological theories, which were developed to explain traditional forms of deviance, can also be used to explain deviant behaviour in cyberspace.

References

- Agatston, P.W., Kowalski, R. and Limber, S. (2007) 'Students Perspectives on Cyber Bullying' *Journal of Adolescent Health* **41** (6): s59-s60
- Armsden, G. C., and Greenberg, M. T. (1987) 'The Inventory of Parent and Peer Attachment: Individual differences and their relationship to psychological well-being in adolescence' *Journal of Youth and Adolescence*, **16** (5): 427-454.
- Bauwens, J., Pauwels, C., Lobet-Maris, C., Pouillet, Y., Walrave, M. (2009) *Cyberteens, cyberrisks, cybertools: Tieners en ICT, risico's en opportuniteiten* [cyberteens, cyberrisks, cybertools: teens and ICT, risks and opportunities] Gent: Academia Press
- Berson, I.R, Berson, M.J, and Ferron, J.M. (2002) 'Emerging Risks of Violence in the Digital Age: Lessons for Educators from an Online Study of Adolescent Girls in the United States' *Journal of School Violence* **1** (2): 51-71
- Bird, S. (2009) 'Holly Grogan, 15, leapt to her dead after abuse from facebook bullies', *Times Online*, September 21, 2009, <http://www.timesonline.co.uk/tol/news/uk/article6841908.ece>, (Accessed 11th December 2009)
- Cassidy, W., Jackson, M and K.N. Brown (2009) 'Sticks and Stones Can Break My Bones But How Can Pixels Hurt Me' *School Psychology International* **30** (4): 383-402
- Charlesworth, L.W. and Rodwell, M.K. (1997). 'Focus groups with children: A resource for sexual abuse prevention program evaluation' *Child Abuse & Neglect* **21** (12): 1205-1216.
- Clarke, R.V. and Felson, M. (2008) *Routine Activity and Rational Choice: Advances in Criminological Theory* (Volume 5), New Jersey: Transaction Publishers
- Cohen, L.E., and Felson, M. (1979) 'Social Change and Crime Rate Trends: A Routine Activity Approach' *American Sociological Review* **44** (4): 588-608
- Collins, D. (2003) 'Pretesting survey instruments: an overview of cognitive methods' *Quality of Life Research* **12**: 229-238.
- David-Ferdon, C., and Feldman Hertz, M. (2007) 'Electronic Media, Violence and Adolescents : An Emerging Public Health Problem' *Journal of Adolescent Health* **41** (6) s1-s5
- Dehue, F., Bolman, C. and Völlink, T. (2006) Cyberpesten onder jongeren: prevalentie, uitingsvormen en inschatting van ouders.[cyberbullying among youngsters:

- prevalence, forms and the perception of parents] Open universiteit Nederland
, faculteit Psychologie
- Dehue, F. Bolman, C. and T. Vollink (2008) 'Cyberpesten: wat doen kinderen en wat weten ouders? [Cyberbullying: the role of youth and the role of parents]' *Pedagogische studiën: tijdschrift voor onderwijskunde en opvoedkunde* **85** (5): 359-370
- Delver, B. (2006) *Vet Veilig Internet*. [Safe Internet] Alkmaar: Vives Media
- Dijk, J.J.M. van, Sagel-Grande, H.I. en L.G. Toornvliet (2006) *Actuele Criminologie* [Contemporary Criminology], Den Haag: Sdu uitgevers
- Eijnden, R. van, Vermulst, A., Rooij, van T. and G.J. Meerkerk (2006) *Monitor internet en jongeren: Pesten op internet en het Psychosociale Welbevinden van Jongeren* [Monitoring youth and the internet: Cyberbullying and the wellbeing of youth]. Rotterdam: IVO
- Erdur Baker, Ö. (2010) 'Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools' *New Media & Society* **12** (1): 109-125
- Felson, M., and Clarke R.V. (1998) *Opportunity Makes the Thief: Practical theory for crime prevention*. Police Research Series Paper 98, London: Home Office
- Finkelhor, D., Mitchell, K., and Wolak, J. (2000) *Online victimization: a report on the nations youth*. University of New Hampshire: Crimes against Children Research Center
- Goberecht, T. (2008) *Onderzoek naar het verband tussen emotionele en gedragsproblemen en cyberpesten bij jongeren uit de eerste graad secundair onderwijs* [A study on the correlation between emotional and behavioural problems and cyberbullying amongst youth in the first class of secondary school] Brussel: Vrije Universiteit
- Gottfredson, M. and T. Hirschi (1990) *A General Theory of Crime*. Stanford: Stanford University Press
- Grasmick, Harold G., Charles R. Tittle, Robert J. Bursik, Jr., and Bruce J. Arneklev (1993) 'Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime', *Journal of Research in Crime and Delinquency* **30**: 5-29.
- Hay, C. and Meldrum, R. (2010) 'Bullying Victimization and Adolescent Self-Harm: Testing Hypotheses from General Strain Theory', *Journal of Youth Adolescence* **39**: 446-459
- Hay, C., Meldrum, R. and Mann, K. (2010) 'Traditional Bullying, Cyberbullying, and Deviance: A General Strain Theory Approach' *Journal of Contemporary Criminal Justice* **XX** (X): 1-18

- Hinduja, S., and Patchin, J.W. (2008) 'Cyberbullying: an exploratory analysis of factors related to offending and victimization' *Deviant Behavior* **29** (2): 129-156
- Hinduja, S., and Patchin, J.W. (2009) *Bullying Beyond the Schoolyard: preventing and responding to cyberbullying*. Thousand Oaks (California U.S.): Corwin Press
- Hinduja, S. and Patchin, J.W. (2010a) 'Bullying, Cyberbullying, and Suicide' *Archives of Suicide Research* **14** (3): 206-221
- Hinduja, S. and Patchin, J.W. (2010b) *Cyberbullying Research Summary: Cyberbullying and Strain*, Cyberbullying Research Center
- Hinduja, S. and Patchin, J.W. (2010c) 'Offline Consequences of Online Victimization', *Journal of School Violence* **6** (3): 89-112
- Hoppe, M.J., Wells, E.A., Morrison, D.M., Gillmore, M.R. and Wilsdon, A. (1995). 'Using focus groups to discuss sensitive topics with children', *Evaluation Review* **19** (1): 102-114.
- Horner, S.D. (2000) 'Focus on research methods: Using focus group methods with middle school children' *Research in Nursing & Health*, **23**: 510-517.
- Junger-Tas, J., Steketee, M. and Moll, M. (2008) *Achtergronden van jeugd delinquentie en middelengebruik* [youth delinquency and substance abuse], Verwey Jonker Intstituut
- Juvonen, J. and Gross, E.F. (2008) 'Extending the School Grounds? Bullying Experiences in Cyberspace' *Journal of School Health* **78** (9): 496-505
- Kidd, P.S. and Parshall, M.B. (2000). Getting the focus and the group: Enhancing analytical rigor in focus group research. *Qualitative Health Research*, **10** (3): 293-308.
- Kiriakidis, S.P. and Kavoura, A. (2010) 'A Review of the Literature on Harassment Through the Internet and Other Electronic Means' *Family and Community Health* **33** (2): 82-93
- Kowalski, R., and Limber, S. (2007) 'Electronic Bullying Among Middle School Students' *Journal of Adolescent Health* **41** (6): s22-s30
- Kowalski, R., Limber, S., and Agatston, P. (2008). *Cyberbullying: Bullying in the Digital Age*. Malden: Blackwell Publishers.
- Lenhart, A. (2007) *Cyberbullying and online teens*. Pew internet and American life project
- Lenhart, A., Madden, M. and P. Hitlin. (2005) *Teens and technology: youth are leading the transition to a fully wired and mobile nation*, Pew internet and American life project, <http://www.pewinternet.org/Reports/2005/Teens-and-Technology.aspx> (accessed Novemer 27, 2009)
- Leukfeldt, E.R., M.M.L. Domenie en W.Ph. Stol (2010) *Verkenning Cybercrime in Nederland 2009* [Cybercrime in the Netherlands]. Den Haag: Boom Juridische Uitgevers.

- Li, Q. (2006) 'Cyberbullying in Schools: A research of Gender Differences' *School Psychology International* **27** (2): 157-170
- Li, Q (2007) 'New bottle but old wine: A research of cyberbullying in schools' *Computers in Human Behavior* **23** (4): 1777-1791
- Li, Q. (2008) 'A cross-cultural comparison of adolescents' experience related to cyberbullying' *Educational Research* **50** (3): 223-234
- Livingstone, S., and Haddon, L. (2009) *EU Kids Online: Final report*. LSE, London: EU Kids Online.
- Mason, K. L. (2008) 'Cyberbullying: A preliminary assessment for school personnel' *Psychology in the Schools* **45** (4): 323-348
- Mesch, G.S. (2009) 'Parental Mediation, Online Activiteis, and Cyberbullying' *CyberPsychology & Behavior* **12** (4): 387-393
- Mishna, F., Saini, M., and Solomon, S. (2009) 'Ongoing and online : Children and youth's perceptions of cyberbullying' *Children and Youth Services Review* **31** (12): 1222 – 1228
- Mitchell, K., Finkelhor, D., and Becker-Blase, K (2007) 'Linking Youth Internet and Conventional Problems: Findings from a Clinical Perspective' *Journal of Aggression, Maltreatment & Trauma* **15** (2): 39-58
- Morgan, D.L. (1996) 'Focus groups', *Annual Review of Sociology*, **22**: 129-152.
- Morgan, M., Gibbs, S., Maxwell, K. and Britten, N. (2002) 'Hearing children's voices: Methodological issues in conducting focus groups with children aged 7-11 years', *Qualitative Research*, **2** (1): 5-20.
- Olweus, D. (1993) *Bullying at School: What We Know and What We Can Do*. Oxford: Blackwell Publishers
- Olweus D. (1996) *The Revised Olweus Bully/Victim Questionnaire*. Mimeo. Bergen, Norway: Research Center for Health Promotion (HEMIL Center), University of Bergen.
- Olweus, D. (1999) 'Sweden' in Smith, P.K., Morita, Y., Junger-Tas, J., Olweus, D. Catala, R., & Slee, P. (eds) *The nature of school bullying* (pp. 7-27). London: Routledge
- Ortega, R., Mora-Merchán, J.A., & Jäger, T. (2007) *Acting against school bullying and violence. The role of media, local authorities and the Internet* [E-book]. Landau: Verlag Empirische Pädagogik.
- Patchin, J. W. and Hinduja, S. (2006) 'Bullies Move beyond the Schoolyard: A Preliminary Look at Cyberbullying' *Youth Violence and Juvenile Justice* **4** (2): 148-169
- Piquero, A.R. and Rosay, A.B. (1998) 'testing the reliability and validity of Grasmick *et al.*'s

- self-control scale: a comment on Longshore *et al.*, *Criminology* **36** (1): 157-173
- Raskauskas, J. and Stolz, A.D. (2009) 'Involvement in Traditional and Electronic Bullying Among Adolescents' *Developmental Psychology* **43** (3): 564-575
- Rinzema, J. (2008) *Digitaal pestgedrag: een kwantitatieve analyse van aard en omvang*. Amsterdam: Vrije Universiteit
- Rock, P. (2007) 'Sociological Theories of Crime' in Maguire, M., Morgan, R. and R. Reiner (eds) *The Oxford Handbook of Criminology*, New York: Oxford University Press
- Rooij, T. van, and Eijnden, R., van den (2007) *Monitor internet en jongeren 2006 en 2007: ontwikkelingen in internetgebruik en de rol van opvoeding*. Rotterdam: IVO
- Schrock, A., and Boyd, D. (2010) *Online Threats to Youth: Solicitation, Harassment and Problematic Content*, Harvard University
- Shariff, S. (2008) *Cyber-Bullying: issues and solutions for the school, the classroom and the home*. New York: Routledge
- Sim, J. (1998). Collecting and analysing qualitative data: Issues raised by the focus group. *Journal of Advanced Nursing*, **28** (2): 345-352.
- Skogan, W.G. (2003) *The validity of official crime statistics: an empirical investigation*, Austing: University of Texas Press
- Slonje R. and Smith, P.K. (2008) 'Cyberbullying: Another main type of bullying' *Scandinavian Journal of Psychology* **49**: 147-154
- Smith, P.K., Cowie, H., Olafsson, R.F., and Liefhoghe, A.P.D. (2002) 'Definitions of Bullying: A comparison of Terms Used, and Age and Gender Differences, in a Fourteen-Country International Comparison', *Child Development* **73** (4): 1119-1133
- Smith, P., Mahdavi, J., Carvalho, M. and Tippett, N. (2006) *An investigation into cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying*. London: University of London
- Smith, P.K., Mahdavi, J., Carvalho, M., Fisher, S., Russel, S., and Tippett, N. (2008) 'Cyberbullying: its nature and impact in secondary school pupils' *Journal of Child Psychology and Psychiatry* **49** (4): 376-385
- Smith, P.K. and Brain, P. (2000) 'Bullying in schools: Lessons from two decades of research', *Aggressive Behavior*, **26** (1): 1-9
- Solberg, M. and Olweus, D. (2003) 'Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire' *Aggressive Behaviour* **29** (3): 239-268.
- Stassen Berger, K. S. (2007) Update on bullying at school: Science forgotten? *Developmental Review* **27** (1) 90-126

- Stol, W. Ph. (2008) 'Cybercrime' in Stol, W.ph and van Wijk, A. (eds) Den Haag: Boom Juridische Uitgevers
- Strom, P. S., and Strom, R. D. (2005) 'Cyberbullying by Adolescents: A Preliminary Assessment' *The Educational Forum* **70**: 21-36
- Vandebosch, H. and van Cleemput, K (2010) 'Cyberbullying among youngsters: profiles of bullies and victims' *New Media & Society* **11** (8): 1349-1371
- Vandebosch, H., Cleemput, K. van, Mortelmans, D. and M. Walrave. (2006) *Cyberpesten bij jongeren in Vlaanderen [Cyberbullying among youngsters in Belgium]*. Brussel: viWTA
- Van der Vorst, H., Engels, R. C. M. E., Meeus, W., and Dekovic, M. (2006) 'The impact of alcohol-specific rules, parental norms about early drinking and parental alcohol use on adolescents' drinking behavior'. *Journal of Child Psychology and Psychiatry*, **47** (12): 1299-1306.
- Walrave, M., Demoulin, M., Heirman, W. and A. van der Perre (2009) *Cyberpesten: Pesten in Bits & Bytes [Cyberbullying: bullying in bits and bytes]*, Observatorium van de Rechten op het Internet
- Walrave, M., Lenaerts, S. and Moor, S. de (2009) *Cyberteens @ Risk? Tieners verknocht aan internet, maar ook waakzaam voor risico's?* Antwerpen: TIRO-OSC
- Wijngaards, G., Franssen, J., and Swager, P. (2006) *Jongeren en hun digitale wereld [the digital world of youngsters]* Assen: Van Gorcum
- Wikstrom, P.O. (2008) 'In search of causes and explanations of crime' in King, R.D. and E. Wincup (eds) *Doing research on crime and justice*, New York: Oxford University Press
- Willard, N. E. (2007) *Cyberbullying and Cyberthreats: responding to the challenge of online social aggression, threats and distress*. Champaign, Illinois: Research Press
- Williams, K.R. and Guerra, N.G. (2007) 'Prevalence and Predictors of Internet Bullying' *Journal of Adolescent Health* **41** (6): s14-s21
- Wing, C. and V. Steeves (2005) *Young Canadians in a wired world: trends and recommendations*. Ottawa: Media Awareness Network
- Wolak, J., Mitchell, K., and Finkelhor, D. (2006) *online victimiation of youth: five years later*. University of New Hampshire: Crimes against Children Research Center
- Wolak, J. Mitchell, K., and Finkelhor, D (2007) 'Does Online Harassment Constitute Bullying? An exploration of Online Harassment by Known Peers and Online-Only Contactsbullying' *Journal of Adolescent Health* **41** (6): 51-58.

- Ybarra, M.L., Diener-West, M., and Leaf, P.J. (2007) 'Examining the Overlap in Internet Harassment and School Bullying: Implications for School intervention' *Journal of Adolescent Health* **41** (6): s42-s50
- Ybarra, M.L., Espelage, D.L. and Mitchell, K. (2007) 'The Co-occurrence of Internet Harassment and Unwanted Sexual Solicitation Victimization and Perpetration: Associations with Psychological Indicators' *Journal of Adolescent Health* **41** (6): s31-s41
- Ybarra, M. L., and Mitchell, K. (2004a) 'Youth engaging in online harassment: associations with caregiver-child relationships, Internet use and personal characteristics' *Journal of Adolescence* **27** (3): 319-336
- Ybarra, M. L., and Mitchell, K. (2004b) ' Online aggressor/targets, aggressors, targets: a comparison of associated youth characteristics' *Journal of Child Psychology and Psychiatry* **45** (7): 1308-1316
- Ybarra, M.L., and Mitchell, K. (2007) 'Prevalence and Frequency of internet harassment Instigation: Implications for Adolescent Health' *Journal of Adolescent Health* **41** (2): 189-195