The role of empathy for adolescents' cyberbullying behaviour

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Abstract

The negative relationship between empathy and aggressive behaviour has been demonstrated in meta-analyses (e.g., Jolliffe & Farrington 2004). On the basis of these findings it was hypothesized that a lack of empathic responsiveness may also be a characteristic of cyber bullies. In the present study 2,070 students of Luxembourg secondary schools completed an online survey that included a German version of the Cyberbullying questionnaire (Smith et al. 2008) and a newly developed empathy scale. ANOVAs indicated significant differences between cyber bullies and non-cyber bullies. Most importantly, it was observed that cyber bullies demonstrated less empathic responsiveness than non-bullies. The findings confirm and substantially extend the research on the relationship between empathy and aggressive behaviour. From an educational point of view the findings suggest that training of empathy skills might be an important tool in decreasing cyberbullying.

Keywords

Cyberbullying, traditional bullying, empathy, Luxembourg

1. Introduction

School violence and bullying are serious societal problems (Smith 2003), also in Luxembourg (Huberty & Steffgen 2008; Steffgen & Ewen 2004). Many teachers and school administrators recognize the problem of school bullying. However, only few are aware that students may also suffer from harassment in electronic communication. The present study aims at expanding the understanding of this new phenomenon, called cyberbullying (Smith et al. 2008). To do so, this study presents a definition of cyberbullying. In addition, particular attention will be devoted to the role of empathy in this new form of aggressive behaviour.

1.1 Definition of cyberbullying

Cyberbullying has emerged as a recent phenomenon resulting from the advancement of new communication technologies. In current definitions, it has been described as the deliberate and repeated harm inflicted through the use of computers, cell phones, and other electronic devices (Hinduja & Patchin 2009), carried out as an aggressive act by a group or individual, against a victim who cannot easily defend him or herself (Smith et al. 2006).

Cyberbullying may occur in various forms, including flaming/trolling, harassment, cyber stalking, denigration, impersonation/identity theft, outing, photo shopping, exclusion, threatening with physical harm or happy slapping (Willard 2006). The latter issue denotes that traditional bullying and cyberbullying may even occur in combination: with happy slapping, an unsuspecting person is recorded while being harassed or physically abused, and the resultant digital photo or video is uploaded to a web site or otherwise sent around for public viewing.

A great number of electronic communication tools provide opportunities for cyberbullying, including cell phones (e.g., phone call, text message, picture/video clip bullying), or the Internet (e.g., email, instant messaging, via websites, chat room bullying).

Studies in different European countries, USA, Canada and Australia report a prevalence rate of cyber victimisation of 3% to 26%, and cyberbullying of 6% to 17% (Campbell 2005, Li 2006, NCH 2005, Smith et al. 2008, Ybarra & Mitchell 2004).

Unlike traditional bullies, cyber bullies benefit from greater anonymity. Although there are some technological possibilities to identify the cyber perpetrator, in many cases the victims may not have the knowledge or administrator rights to identify the user of an anonymous email account or a mobile phone card (Hinduja & Patchin 2009). In addition, cyber bullies have a more unique sense of power and control and a stronger feeling of imperviousness to sanctions than traditional bullies. Altogether, cyberbullying appears to be a more pervasive phenomenon, which may occur anywhere and at any time (Willard 2006). With respect to the specific characteristics of current communication technologies there seems to be no place to hide for those becoming victims of cyberbullying. In contrast, the perpetrators benefit from the breadth of the audience and the greater invisibility compared to traditional forms.

Irrespective of the differences mentioned above, the question emerges whether or not cyberbullying is only a covert form of psychological bullying (Smith et al. 2008). Overt forms of aggression include direct face-to-face confrontations between the perpetrator and the victim, for example through verbal insults or physical attacks. Covert aggression, on the other hand, implies a harm, which is indirectly delivered through third parties. By rumour spreading, social exclusion or stealing friends the perpetrator may remain less apparent.

If cyberbullying is a covert form of traditional psychological bullying, then the same causal risk and protection factors or psychosocial correlates of becoming the target or the perpetrator of traditional bullying might apply also to cyberbullying. In line with this notion, recent studies suggested that students' roles in traditional bullying predicted the same behaviour in cyberbullying (Juvonen & Gross 2008; Kowalski & Limber 2007; Slonje & Smith 2007; Smith et al 2008). Whereas victims of traditional bullying were shown also to be targets of online attacks, bullied students proved to be also cyber bullies (Ybarra & Mitchell 2004; Ybarra at al. 2007).

1.2 Cyberbullying and empathy

Empathy can be defined as sharing another person's emotional state (Eisenberg & Strayer 1987). Empathy is denoted as the ability to experience a vicarious emotion when observing another person in distress, for example. In this context, it is suggested to differentiate between sympathy and empathy, with sympathy being a concern for another person based on the apprehension or comprehension of the other's emotional state or condition. Empathy, on the other hand, may be defined as an emotional reaction elicited by and congruent with another's emotional state or condition. Thus, Eisenberg et al. (2002) recognize sympathy as an affective state *different* from that of the other, whereas empathy is *congruent* with the affective state of the other. In contrast, Hoffman (2001) sees empathy as a feeling that fits someone else's condition more then one's own, but this feeling must not exactly match that of the other person. For example, empathic persons could observe an angry friend and feel themselves angry or sad or compassionate, depending on the situation and the reason that caused the angry feeling of the friend.

Other approaches suggest that empathy not only involves an emotional dimension but also a cognitive dimension. Here, empathy is defined as the ability to *understand* and *share* another person's emotional state or context (Cohen & Strayer 1996). Although no consensus has yet been reached among researchers, it is suggested to conceptualize empathy as a multidimensional construct with cognitive and emotional components (Davis 1994, Jolliffe & Farrington 2004) that have to be taken into account to understand empathy as a fundamental emotional ability that develops from the cradle on (Hoffmann 2001).

All the aforementioned approaches conceptualize empathy as a personality trait that differs between individuals. This personality trait will be revealed in specific situations as state or empathic responsiveness. This may occur, for example, as a reaction to a person in distress, which then facilitates altruistic or prosocial behaviour (Batson et al. 1981).

The relationship between empathy and aggressive behaviour has been examined with a particular focus on adolescence (Miller & Eisenberg 1988). Two meta-analyses confirmed the negative relationship between antisocial behaviour and empathy (Jolliffe & Farrington 2004, Miller & Eisenberg 1988). Both cognitive and emotional components of empathy were shown to mitigate aggressive and violent behaviour (Jolliffe & Farrington 2004).

As yet some research has been conducted on the link between empathy and aggression in general. However, only few studies addressed the empathic skills of traditional bullies. These studies revealed an inconsistent pattern, which seems to be related to the gender of participants. Some studies reported a weak to moderate negative relationship between empathy and involvement in bullying others (Correia & Dalbert 2008, Endresen & Olweus 2001, Espelage et al. 2004, Jolliffe & Farrington 2006, Nickerson et al. 2008). Other studies found a significant difference between prosocial children and bullies, but this difference disappeared, when controlled for gender (Warden & Mackinnon 2003). Also, a negative relationship between empathy and bullying was observed either only for boys (Gini et al. 2007), or only for girls (Jolliffe & Farrington, 2006, for affective empathy). The latter study differentiated three forms of bullying (name calling, violent bullying, and indirect bullying). Differences were found between

bullies and non-bullies for boys regarding violent bullying and for girls regarding indirect bullying (Jolliffe & Farrington 2006).

As mentioned above, cyber bullies remain more anonymous than traditional face-to-face bullies. This anonymity, or distance, between the perpetrator and the victim implies that perpetrators will be prevented from observing the immediate consequences of their behaviour. Therefore, cyber bullies may even experience less empathy for their victims than traditional bullies. Alternatively, cyberbullying may particularly attract persons with low trait empathy. However, and in contrast to findings with traditional bullying, first research findings do not support this role of empathy for cyberbullying. Cyber bullies were not found to show a lack of empathy in comparison to victims, bully-victims, and non-involved persons (Almeida et al. 2008).

Given these inconclusive findings, the aim of the present study was to further examine the role of empathy for cyberbullying. In particular, the hypothesis was tested that cyber bullies show less empathy than non-cyber bullies.

2. Method

The methods section will start with a description of the study sample. Next, the measures used will be described.

2.1 Participants and Procedure

The sample consisted of 2,070 students. A total of 941 (45.5%) boys and 1,127 (54.5%) girls who attended 7th to 13th grade classes in Luxembourg secondary schools (56.9% were 7th to 9th graders) participated (2 missing values). A total of 73.3% (or 22 of 30) of all secondary schools in Luxembourg participated. The mean age of the sample was 15.9 years (SD = 2.3; range: 12 - 24). Participants received school permission to participate before data were collected as an online survey using PCs in the computer science room. Each class was tested at once with each student working on a separate PC. Also, students participated voluntarily and were allowed to end the questionnaire whenever they wanted. Nevertheless, almost all students answered the questions, such that only few participants (1.1%) had to be excluded from analyses because of missing data.

2.2 Measures

Cyberbullying questionnaire. A German short version of the cyberbullying questionnaire (30 items) was used (Smith et al. 2006). Each item used a 6-point ordinal scale (almost daily, several times a week, about once a week, about once in a month, 1-3 times a year, never). Students indicated how often they had become victim, perpetrator, or witness of traditional bullying, or cyberbullying, in the current school year (the study was conducted at the end of the school year).

In addition to these six items, participants were also given 24 additional items that more closely focused on cyberbullying. In particular, they were asked how often they had become victim of cyberbullying or actively cyber bullied others, both inside or outside

school and for each of six media types (i.e., text message, picture/video clip, phone call, email, websites/chat room, or instant messaging).

Empathy scale. A novel scale was designed for the present study. Empathy was measured with three context specific items. Students indicated their agreement to statements on a 5-point Likert scale ("fully agree", "slightly agree", "partly agree/disagree", "slightly disagree", "totally disagree"; König & Steffgen 2008). Statements included, for example, "Persons being harassed or threatened via cell phone or Internet deserve so." (Cronbach's $\alpha = .69$; r_{it} range .46 to .57).

In addition, anxiousness about being cyber bullied was tested with three items (Cronbach's $\alpha = .79$; r_{it} range .59 to .70; e.g., "I am afraid of being harassed or threatened via cell phone or Internet."). Finally, preference for "virtual" contacts was tested with four items (Cronbach's $\alpha = .68$; r_{it} range .46 to .51; e.g., "It's easier to make friends online than in everyday life."). Both anxiousness and preference for "virtual" contacts used the 5-point Likert scale mentioned earlier.

Demographic questionnaire. To test for demographic pattern of involvement in cyberbullying, students recorded their gender, age, and overall years in school.

3. Results

To gain a basic understanding of the situation in Luxembourg, the extent to which students experience cyberbullying was examined. Given that adolescents' experiences of bullying may enhance the understanding of cyberbullying, traditional bullying was also investigated. Next, the role of empathy for both cyberbullying and traditional bullying was analyzed. This was done with respect to different modes of communication and whether bullying occurred inside and outside school. Finally, the relationship between becoming a victim of both traditional and cyberbullying was tested.

3.1 Prevalence of bullying in Luxembourg

With respect to becoming a victim of either traditional bullying or cyberbullying, 11.5% of the students reported being bullied by traditional bullying *frequently* (almost daily, several times a week, about once a week, about once in a month), 17.8% only *1-3 times a year,* and 70.7% *never* during the last school year. With respect to cyberbullying, 4.3% of the students reported having experienced cyberbullying *frequently*, 9.8% only *1-3 times a year*, and 85.9% *never*.

The prevalence rates for traditionally bullying other students were 14.0% *frequently*, 18.1% only *1-3 times a year,* and 67.9% *never* during the last school year. With respect to cyberbullying, 5.0% reported having bullied others *frequently*, 5.6% only *1-3 times a year,* and 89.4% *never*.

In terms of becoming a witness 40.3% reported having witnessed traditional bullying *frequently*, 30.7% only *1-3 times a year,* and 29.0% *never*. With respect to cyberbullying, the numbers were 17.0% *frequently*, 22.9% only *1-3 times a year,* and 60.1% *never*.

Overall, cyberbullying was more often experienced outside school (N=598) than inside school (N=287). These results are in line with other research findings (Smith et al. 2008).

In addition, gender differences were found for traditional bullying and cyberbullying. Girls were more likely to become victims of cyberbullying than boys ($\chi^2 = 23.06$; $p < .001$). However, this was not the case for becoming perpetrators of cyberbullying ($\chi^2 = 0.24$; n.s.). On the other hand, boys were more often traditional bullies than girls ($\chi^2 = 23.48$; $p < .001$). No significant gender differences were found in the probability of becoming a victim of traditional bullying ($\chi^2 = 1.08$; $p = .31$) or of becoming a witness of traditional bullying ($\chi^2 = .04$; $p = .44$), or a witness of cyberbullying ($\chi^2 = 2.43$; $p = .07$), respectively.

3.2 Traditional bullying, cyberbullying, and empathy

To test for mean differences in a general approach of cyberbullying, a series of 2 (bullies vs. non-bullies) x 2 (boys vs. girls) ANOVAs were performed. Cyber bullies (bullying another student at least once a month) show a greater lack of empathy for others being victimized than do non-cyber bullies ($F_{(1, 2,065)} = 25.20$; $p < .001$, for the main effect). However, no differences were found between victims and non-victims of cyberbullying (see Table 1 for group means). Also, there was no significant gender effect ($F_{(1, 2,065)} = 1.84$; $p = .18$).

- Insert Table 1 -

With respect to traditional bullying, a similar pattern of results was observed. Traditional bullies show a greater lack of empathy than non-bullies ($F_{(1, 2,063)} = 20.17$; $p < .001$, for the main effect), and, again, no differences were found between victims and non-victims of bullying (see Table 2 for group means). In contrast to other findings (Gini et al. 2007), bullying behaviour of both boys ($F_{(1, 939)} = 28.57$; $p < .001$) and girls ($F_{(1, 1127)} = 33.35$; $p < .001$) was significantly associated with lower levels of empathic responsiveness.

- Insert Table 2 -

Compared to those who have not become victims of bullying, victims of traditional bullying are also more anxious being cyber bullied ($F_{(1, 2,062)} = 9.14$; $p < .01$, for the main effect, see Table 3 for group means). This is especially true for the female sample ($F_{(1, 1127)} = 22.32$; $p < .001$).

3.3 Empathy and cyberbullying via mobile phone or Internet

Two 2x2 ANOVAs were performed to further explore the differences in empathy between cyber bullies and non-cyber bullies, depending on the specific media used for perpetration, with gender serving as second independent variable. To perform this analysis, a group variable for Internet bullies was computed, combining acts of bullying in chat rooms, via email, and instant messenger. The resulting group variable for mobile phone bullies comprised acts of bullying via mobile phone calls, sending pictures or sending short messages to the victim. Any student using one of the respective forms of bullying at least once a month within the last school year was considered a cyber bully. When separated by means used for perpetration, a closer look at cyber bullies reveals

that both mobile phone bullies ($F_{(1, 2,065)} = 44.20$; $p < .001$, for the main effect), as well as Internet bullies ($F_{(1, 2,065)} = 31.61$; $p < .001$, for the main effect) show a greater lack of empathy than non-cyber bullies. Additionally, the ANOVA comparing Internet bullies to non-bullies, there was a significant gender difference with males showing a greater lack of empathy than females ($F_{(1, 2,064)} = 9.86$; $p < .01$).

3.4 Empathy and cyberbullying inside or outside of school

An equivalent grouping variable (see 3.3) was computed for cyber bullies perpetrating from inside versus outside school, accounting for all methods of cyberbullying that may be used. Again two 2x2 ANOVA indicated that cyber bullies both within school ($F_{(1, 2,060)} = 48.27$; $p < .001$, for the main effect) and outside of school ($F_{(1, 2,064)} = 46.45$; $p < .001$, for the main effect) show a greater lack of empathy than non-cyber bullies. In addition, and with respect to cyber bullies outside of school, boys showed a significantly greater lack of empathy than girls ($F_{(1, 2,064)} = 7.88$; $p < .01$).

3.5 Empathy and cyberbullying: Being both bully and victim

It has been argued that differences in empathy between bullies and non-bullies may result from the inclusion of persons that are both cyberbullies *and* victims of cyberbullying (Almeida et al. 2008). To further investigate the differences between the victim status of cyber bullies and non-cyber bullies, participants were split into four groups, taking into account their status both as victims and perpetrators. The resulting four groups (neither cyberbully nor victim: "not-involved", victims-only, cyber bullies-only, and those who were both cyber bullies and victims: "bully and victim") were compared in a 4x2 ANOVA with gender as second independent variable. Results show a significant main effect for the created grouping variable regarding the perpetrator/victim status ($F_{(3, 2,056)} = 10.87$; $p < .001$, see Table 3 for group means).

A post-hoc analysis (Scheffé Test) revealed significant differences for the group of cyber bullies-only compared to the "not-involved" group (mean difference =.71, $p < .001$) and the victims-only group (mean difference =.69, $p < .01$), and a tendency compared to the "bully and victim" group (mean difference =.60, $p = .07$).

- Insert Table 3 -

4. Discussion

The present study that tested a large sample of adolescents in Luxembourg confirms that cyberbullying is less prevalent than traditional bullying and that cyberbullying is experienced more often outside than inside of school (Smith et al 2008). Even if findings are not directly comparable because of methodological differences (e.g. use of different measures) in the studies, the current prevalence rate for Luxembourg appears to be rather low.

It was found that cyber bullies show less empathy for others being victimized than did non-cyber bullies, those who have become both cyber bullies and victims, or who were not at all involved in cyber bullying. This finding stands in sharp contrast to the results reported by Almeida et al. (2008). In their study, cyber bullies were not found to show a lack of empathy in comparison to victims, bully-victims, and non-involved persons, perhaps due to the use of a different measure instrument for empathy.

In addition, only some small gender effects and no effects of media type (Internet versus cell phone) or location of the perpetration (inside versus outside of school) were observed. Altogether, these findings are in accordance with studies showing a negative relationship between empathy and aggression (Miller & Eisenberg 1988).

It is important to note that the literature on the relation of empathy and bullying is not entirely clear-cut. However, the mixed results are likely to reflect differences in a specific methodological characteristic: most studies that found an overall negative relationship between empathy and bullying used self-reported bullying scales, including the present study (Correia & Dalbert 2008; Endresen & Olweus 2001; Espelage et al. 2004; Jolliffe & Farrington 2006; Nickerson et al. 2008). In contrast, studies that yielded mixed or gender moderated effects used peers reporting bullying behaviour (Gini et al. 2007; Warden & Mackinnon 2003).

The present study further corroborates that a lack of empathy is a risk factor of cyberbullying behaviour. Therefore, these findings also have important implications for prevention and intervention. Approaches that address the improvement of empathy skills might be promising in decreasing traditional bullying as well as cyberbullying. Feeling empathy for others seems to be an important prerequisite for preventing such unwanted behaviour. Hence, the findings of this study have to be considered during the design and development of new anti-cyberbullying trainings. The success of such an approach has to await future evaluation.

However, the present study also has some limitations. For example, data were collected online. Therefore generalization of findings may be limited. Furthermore, from a methodological point of view, the way in which empathy was measured may have contributed to the results. The reliability and validity of the novel instrument (i.e., empathy short scale) has to be confirmed in further studies. In addition, only a global measure for empathy was used. It has been suggested that affective and cognitive components separately contribute to empathy (Davis 1994; Jolliffe & Farrington 2004). Future research that includes both aspects of empathy has to show whether the current findings hold.

Another limitation of the study is the domain specificity of the empathy scale for the area of media use (Internet and cell phones), so the results obtained may not be generalized for empathy at large.

As the focus of the study was cyberbullying in general, future research should also take into account different modes and roles in cyberbullying (e.g. as direct versus indirect aggression; Jolliffe & Farrington 2004).

Finally, and irrespective of the large sample used in the present study, the cross-sectional design and the used methodology do not allow interpreting for causal effects. Rather, experimental or longitudinal study designs have to be realized.

In sum, the study highlights the role of empathy in cyberbullying. In contrast to previous findings, cyber bullies were found to show less empathy for others than did non-cyber bullies. Thus, the findings confirm the importance of implementing empathy training in anti-cyberbullying programs. More specifically, skills training for adolescents should also include specific components to train empathic responsiveness in the context of media use.

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REFERENCES

Almeida A., Marinho S., Esteves C., Gomes S., Correia I. (2008), *Virtual but not less real: A study of cyber bullying and its relations with moral disengagement and empathy,* Abstracts book 20th Biennial ISSBD Meeting, 2008, Würzburg.

Batson C.D., Duncan B.D., Ackerman P., Buckley T., Birch, K. (1981), Is empathic emotion a source of altruistic motivation? *Journal of Personality and Social Psychology,* Vol. 4, No. 2, pp. 290 – 302.

Campbell M. A. (2005), Cyber bullying: An old problem in a new guise? *Australian Journal of Guidance and Counselling,* Vol. 15, pp. 68 — 76.

Cohen D., Strayer J. (1996), Empathy in conduct disordered and comparison youth, *Developmental Psychology,* Vol. 32, No. 6, pp. 988 – 998.

Correia I., Dalbert C. (2008), School bullying. Belief in a personal just world of bullies, victims, and defenders, *European Psychologist,* Vol. 13, No. 4, pp. 248 – 254.

Davis M.H. (1994), *Empathy: A social psychological approach*. Wm. C. Brown Communications, Dubuque, Iowa.

Eisenberg N., Guthrie I.K., Cumberland A., Murphy B.C., Shepard S.A., Zhou Q., Carlo G. (2002), Prosocial development in early adulthood: a longitudinal study, *Journal of Personality and Social Psychology,* Vol. 82, No. 6, pp. 993 – 1006.

Eisenberg N., Strayer J. (1987), *Empathy and its development,* Cambridge University Press, Cambridge.

Endresen J.M., Olweus D. (2001), Self-reported empathy in Norwegian adolescents: Sex differences, age trends, and relationship to bullying, in: Bohart A., Stipek D. (ed.), *Constructive and Destructive Behavior. Implications for Family, School and Society,* American Psychological Association, New York, pp. 147 — 165.

Espelage D.L., Mebane S.E., Adams R.S. (2004), Empathy, caring, and bullying: Toward an understanding of complex associations, in: Espelage D.L., Swearer S.M. (ed.), *Bullying in American schools: A social-ecological perspective on prevention and intervention*, Erlbaum, Mahwah, pp. 37-61.

Gini G., Albiero P., Benelli B., Altoe G. (2007), Does empathy predict adolescents' bullying and defending behavior? *Aggressive Behavior*, Vol. 33, pp. 467 — 476.

Hinduja S., Patchin J.W. (2009), *Bullying. Beyond the schoolyard.* Corwin Press, Thousand Oaks, California.

Hoffman M.L. (2001), Toward a comprehensive empathy-based theory of prosocial moral development, in: Bohart A., Stipek D. (ed.), *Constructive and Destructive Behavior. Implications for Family, School and Society*, American Psychological Association, New York, pp. 61 — 86.

Huberty Y., Steffgen G. (2008), *Bullying in Schulen. Prädiktoren zivilcouragierten Verhaltens,* Verlag Dr. Müller, Saarbrücken.

Jolliffe D., Farrington D.P. (2004), Empathy and offending. A systematic review and meta-analysis. *Aggression and Violent Behavior,* Vol. 9, pp. 441 — 476.

Jolliffe D., Farrington D.P. (2006), Examining the role between low empathy and bullying, *Aggressive Behavior,* Vol. 32, pp. 540-550.

Juvonen J., Gross E.F. (2008), Extending the school grounds? Bullying experiences in cyberspace, *Journal of School Health,* Vol. 78, pp. 496 — 505.

König A., Steffgen G. (2008), *Do victims of bullying tend to be cyber bullies?* Abstracts book 13th Workshop Aggression, Potsdam.

Kowalski R.M., Limber S.P. (2007), Electronic bullying among middle school students. *Journal of Adolescents Health,* Vol. 41, No. 6, pp. 22 — 30.

Li Q. (2006), Cyber bullying in schools: A research of gender differences. *School Psychology International*, Vol. 27, pp. 157 — 170.

Miller P.A., Eisenberg N. (1988), The relationship of empathy to aggressive and externalizing/antisocial behavior, *Psychological Bulletin,* Vol. 103, pp. 324 — 344.

NCH. (2005), Putting U in the picture – Mobile phone bullying survey 2005. Available online http://www.nch.org.uk/uploads/documents/Mobile_bullying_%20report.pdf/ (accessed 12 January 2009).

Nickerson A.B., Mele D., Princiotta D. (2008), Attachment and empathy as predictors of roles as defenders or outsiders in bullying interactions, *Journal of School Psychology,* Vol. 46, pp. 687 – 703.

Slonje R., Smith P.K. (2007), Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology,* Vol. 49, No. 2, pp. 147 — 154.

Smith P.K. (2003), *Violence in schools. The response in Europe*, Routledge, London.

Smith P.K., Mahdavi J., Carvalho M., Tippett N. (2006), *An investigation into cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying.* Unit for school and family studies, Goldsmiths College, University of London, London.

Smith P.K., Mahdavi J., Carvalho M., Fisher S., Russell S., Tippett N. (2008), Cyberbullying: Its nature and impact in secondary school pupils, *Journal of Child Psychology and Psychiatry,* Vol. 49, No. 4, pp. 376 — 385.

Steffgen G., Ewen N. (2004), *Gewalt an Luxemburger Schulen,* Imprimerie Saint Paul, Luxembourg.

Strayer J., Roberts W. (2004), Empathy and observed anger and aggression in five-year-olds, *Social Development,* Vol. 13, No. 1, pp. 1 – 13.

Warden D., Mackinnon, S. (2003), Prosocial children, bullies and victims: an investigation of their sociometric status, empathy and social problem-solving strategies, *British Journal of Developmental Psychology,* Vol. 21, 367 – 385.

Willard N. (2006), *Cyberbullying and cyberthreats: responding to the challenge of online social cruelty, threats, and distress,* Center for Safe and Responsible Internet Use, Champaign, Illinois.

Ybarra M., Mitchell K. (2004), Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics, *Journal of Child Psychology and Psychiatry and Allied Disciplines,* Vol. 45, No. 7, pp. 1308 — 1316.

Ybarra M.L., Diener-West M., Leaf P.J. (2007), Examining the overlap in Internet-harassment and school bullying: Implications for school intervention, *Journal of Adolescent Health,* Vol. 41, No. 6, pp. 42 — 50.

Table 1: Mean differences of cyber bullies and non-cyber bullies with respect to preference for "virtual" contacts, lack of empathy, and anxiousness. Standard deviations are given in parentheses

	Non-cyber bullies	**Cyber bullies**	***F***	***p***
Preference for "virtual" contacts	2.60 (1.01)	2.78 (0.99)	5.27	< .05
Lack of empathy	2.33 (1.04)	2.87 (1.16)	25.20	< .001
Anxiousness about being cyber bullied	1.95 (1.11)	2.26 (1.24)	13.75	< .001
	non-victim of cyberbullying	**victim of cyberbullying**		
Preference for "virtual" contacts	2.61 (1.02)	2.67 (0.95)	1.27	n.s.
Lack of empathy	2.37 (1.06)	2.28 (1.00)	0.15	n.s.
Anxiousness about being cyber bullied	1.96 (1.14)	2.11 (1.03)	4.13	< .05

Table 2: Mean differences of bullies and victims with respect to preference for "virtual" contacts, lack of empathy, and anxiousness. Standard deviations are given in parentheses

	Non-bullies	**Bullies**	***F***	***p***
Preference for "virtual" contacts	2.60 (1.02)	2.65 (0.96)	1.21	n.s.
Lack of empathy	2.28 (1.03)	2.84 (1.05)	61.39	< .001
Anxiousness about being cyber bullied	1.99 (1.13)	1.98 (1.13)	0.03	n.s.
	Non-victim of bullying	**Victim of bullying**		
Preference for "virtual" contacts	2.59 (1.01)	2.68 (0.97)	3.13	n.s.
Lack of empathy	2.42 (0.99)	2.46 (0.96)	0.44	n.s.
Anxiousness about being cyber bullied	1.93 (1.13)	2.11 (1.11)	9.14	< .01

Table 3: Mean differences in lack of empathy differentiated by status of both perpetrator and victim. Standard deviations are given in parentheses

Role of cyber bullies and victims						
	Non-involved	**Victims-only**	**Bullies-only**	**Bully and victim**	***F***	***p***
Lack of empathy	2.33 (1.04)	2.36 (1.08)	3.04 (1.15)	2.44 (1.09)	10.87	< .001