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Cyberbullying on social network sites : an experimental study into bystanders' behavioral intentions to help the victim or reinforce the bully

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Cyberbullying on social network sites. An experimental study into bystanders' behavioural intentions to help the victim or reinforce the bully

## Abstract

*Cyberbullying on social network sites poses a significant threat to the mental and physical health of victimized adolescents. Although the role of bystanders in solving bullying instances has been demonstrated repeatedly in research on traditional bullying, their role in cyberbullying remains relatively understudied. Therefore, we set up an experimental scenario study in order to examine the influence of contextual factors (severity of the incident, identity and behaviour of other bystanders) on bystanders' behavioural intentions to help the victim or reinforce the bully in cases of harassment on Facebook. Four hundred and fifty-three second year students of Flemish secondary schools participated in the study. The results on the one hand showed that bystanders had higher behavioural intentions to help the victim when they witnessed a more severe incident. Incident severity also interacted with other bystanders' identity in influencing behavioural intentions to help the victim. On the other hand, bystanders had higher behavioural intentions to join in the bullying when other bystanders were good friends rather than acquaintances. In addition, an interaction effect was found between other bystanders' identity and behaviour on behavioural intentions to join in the bullying. Furthermore, both helping and reinforcing behavioural intentions differed according to gender.*

Keywords: cyberbullying; social network site; bystander behavior; experimental study; incident severity; peer influence

Cyberbullying on social network sites. An experimental study into bystanders' behavioural intentions to help the victim or reinforce the bully

### 1. Introduction: cyberbullying on social network sites (SNS)

Information- and communication technologies (ICT) offer this generation of youngsters ample opportunities to communicate with peers. However, in their social interactions via ICT youngsters can be confronted with undesirable phenomena such as cyberbullying. The large-scale EU Kids Online study on internet safety (Livingstone, Haddon, Görzig, & Olafsson, 2011) revealed that 9 % of children between nine and sixteen years old had been bullied through the internet or mobile phones within the past year, while 5 % had bullied others. Other studies in various countries, however, have reported higher prevalence rates: on average 24 % for cyberbullying victimization and 18 % for perpetration (Patchin & Hinduja, 2012). Cyberbullying victimization has been related to numerous negative health consequences, such as depression (e.g. Kowalski & Fedina, 2011; Machmutow, Perren, Sticca, & Alsaker, 2012; Schneider, O'Donnell, Stueve, & Coulter, 2012), emotional distress (e.g. Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012; Şahin, 2012; Šléglová & Černá, 2011) and in extreme cases even self-harming behaviour (Price & Dalgleish, 2010; Schneider et al., 2012) and suicide attempts (Schneider et al., 2012). We can therefore conclude that cyberbullying poses a significant threat for adolescents' mental and physical health.

Nowadays, social network sites (SNS) are very popular amongst teenagers (Lenhart, Madden, Macgill, & Smith, 2007; Livingstone et al., 2011), and we can see that these sites form a common venue for cyberbullying (Livingstone et al., 2011; Ybarra & Mitchell, 2008). The important role of SNS in cyberbullying has led researchers to examine the prevalence of perpetrators and victims of cyberbullying on SNS (Ybarra & Mitchell, 2008). Nevertheless, the largest group involved in cyberbullying on SNS appears to be the bystanders or witnesses

of cyberbullying incidents: Lenhart and colleagues (2011) found that 88 % of US social-media using teens had witnessed harassment on SNS, while 15 % had been victimized and 19 % had harassed someone on SNS. They also investigated bystanders' reactions towards harassment on SNS. A variety of reactions was found: 80 % of bystanders had defended the victim (at least once in a while) and 79 % indicated that they had told the bully to stop. In contrast, 91 % indicated that they had just ignored what was going on and 21 % had even joined in the bullying (Lenhart et al., 2011). The latter data, however, do not provide insight in the reasons why bystanders act or intend to act in a certain way when witnessing cyberbullying on SNS, insight which is essential in order to promote bystander behaviour aimed at helping the victim and discourage behaviour that reinforces the bully. Bystanders' behaviour or behavioural intentions could for example be influenced by personal characteristics of the bystanders themselves (e.g. socio-demographic characteristics, personality, attitudes, norms), but also by contextual characteristics, such as features of the cyberbullying incident and characteristics of other people involved in the incident (the bully, other bystanders). In order to shed light on the latter category of characteristics, we set up an experimental design through which we investigated the influence of contextual characteristics of a harassing incident on SNS on bystanders' behavioural intentions to help the victim or reinforce the bully.

## 2. Role of bystanders in cyberbullying on SNS

Research on traditional bullying has shown that bystanders are important actors in bullying instances. Since perpetrators often engage in bullying to achieve a higher status, exert dominance, gain prestige or demonstrate social power in the peer group, they are dependent on the members of this peer group – the bystanders – to achieve their goal (Pepler, Craig, & O'Connell, 2010; Salmivalli, 2010; Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009). Bystanders can respond to incidents of bullying in roughly three different ways:

remaining an outsider, assisting or reinforcing the bully and supporting or defending the victim (O'Connell, Pepler, & Craig, 1999; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996). When bystanders reinforce the bully by giving positive feedback, they are rewarding the bully for his or her behaviour, which can make the bully become increasingly aggressive (Pepler et al., 2010; Salmivalli, 2010). In addition, research on traditional bullying has shown that reinforcing behaviours by bystanders are associated with a higher frequency of bullying incidents in classrooms (Salmivalli, Voeten, & Poskiparta, 2011). Positive feedback can be awarded by joining in the bullying, but also by showing the bully you approve of it. Sometimes observing and passively standing by can even provide the bully with positive feedback (O'Connell et al., 1999; Salmivalli et al., 1996). At the same time, reinforcing the bully will cause the victim to experience increased negative effects, such as higher anxiety, depression and lower self-esteem (Salmivalli, 2010). Contrarily, bystanders can take sides with the victim, which can threaten the bully's status and as such make the bully decide to stop (Hawkins, Pepler, & Craig, 2001; Pepler et al., 2010). Bystanders can do this by trying to stop the bully (O'Connell et al., 1999; Salmivalli et al., 1996) and by supporting the victim, so as to buffer negative effects caused by bullying victimization (Salmivalli, 2010).

Although cyberbullying is related to traditional bullying, the specific characteristics of the ICT used can influence bullying dynamics and consequently also bystander behaviour. First, adolescents using SNS can be confronted with cyberbullying within but also outside of their own social circle, partly because of SNS characteristics (the ability to see public content and sometimes also content made by "friends-of-friends") and because SNS are often used to connect with so-called "weak ties" and sometimes even with strangers (Ellison, Steinfeld, & Lampe, 2007). As such, a bystander can have different types of relationships with the people involved in a cyberbullying incident, which can cause dynamics that can influence the bystander's response. Secondly, the technological applications integrated in SNS grant

bystanders the opportunity to react to cyberbullying incidents through text- and picture-based communication or even just by clicking a button (e.g. the “I like” button or the report button). Besides these SNS applications, which are used for more public communication (for others to see), bystanders also have the opportunity to react through other ICT that allow more private (one-to-one) communication, for instance mobile phones, instant messenger and e-mail. Evidently, bystanders can also still choose to respond to cyberbullying on SNS by communicating with those involved in “the real world”, in private or when others are present, creating a whole range of possible responses to cyberbullying incidents on SNS.

### 3. Determinants of bystander behaviour in cases of cyberbullying on SNS

In order to understand bystander behaviour in bullying, scholars until now have mainly complemented research on socio-demographic and psychological/personality determinants with an examination of the socio-cognitive processes that determine bystander behaviour (Van Cleemput, Vandebosch, & Pabian, Unpublished results). With regard to socio-cognitive processes, cyberbullying research has investigated the influence of empathy (Barlińska, Szuster, & Winiewski, 2013), emotions and group norms (Jones, Manstead, & Livingstone, 2011), and beliefs (Li & Fung, 2012) on bystander behaviour. However, until now little attention has been paid to *contextual determinants*, caused by characteristics of the cyberbullying incident itself and the other actors involved.

#### 3.1. *Severity of the cyberbullying incident*

First, in a focus group study on cyberbullying, adolescents reported the cognitive perception of the cyberbullying incident itself, more specifically the perceived *severity of the incident*, as an important factor in their bystander behaviour. Adolescents appeared to be more inclined to help the victim when a cyberbullying instance was considered as severe (DeSmet et al., 2012). However, this finding has not yet been confirmed by cross-sectional or

experimental research. Therefore, we will further investigate the influence of the severity of the incident by comparing bystander reactions to more severe and less severe instances of SNS harassment in an experimental design. We expect that bystanders will be more likely to help in a more severe harassing incident on SNS and in an analogous way we hypothesise that bystanders will be less likely to reinforce the bully when confronted with such a severe incident.

*H 1: Bystanders who are exposed to a more severe harassing incident on SNS, will have higher behavioural intentions to help the victim and lower behavioural intentions to reinforce the bully, compared to bystanders who are exposed to a less severe harassing incident on SNS.*

### 3.2. Other bystanders

Research on traditional bullying (Bellmore, Ma, You, & Hughes, 2012) and cyberbullying (DeSmet et al., 2012) has investigated the influence of the bystander's relationship with the victim or the perpetrator on subsequent behavioural intentions. However, to the best of our knowledge, the *influence of other bystanders* who are present in cyberbullying incidents has not been studied yet. Since bullying events on SNS potentially have a large number of bystanders, the presence of these other bystanders is likely to be (consciously or unconsciously) experienced and cognitively processed by bystanders (Latané & Darley, 1970; Thornberg, 2007).

As proposed in Festl, Scharnow and Quandt's (2012) study on peer influences in cyberbullying victimization and perpetration, adolescents' actions can be influenced by peers through processes of *social influence*. The only precondition of social influence is the availability of information on the other's attitudes or behaviour (Marsden & Friedkin, 1993). Social influence by peers has already been demonstrated with regard to bystanders of

traditional bullying. While Nickerson, Mele and Princiotta (2008) found that processes of peer pressure and the desire to be accepted by peers can urge bystanders to join in bullying, Pozzoli and Gini (2010) demonstrated that positive peer pressure for intervention positively predicted defending behaviour. Since the process of social influence by other bystanders still needs to be confirmed for cyberbullying, we hypothesise that information on the behaviour of other bystanders will convince bystanders to display similar behavioural intentions towards harassing incidents on SNS.

*H 2: Bystanders who see other bystanders defend a victim of harassment on SNS, will have higher behavioural intentions to help the victim and lower behavioural intentions to reinforce the bully, compared to bystanders who see other bystanders reinforce the bully.*

Following the *social identity approach*, we also hypothesise that the identity of these other bystanders can influence bystanders' behavioural intentions. The *social identity approach* by Tajfel and Turner (1979 in Jones et al., 2011) posits that people strive to view their own group (the *in-group*) in a positive light, by making comparisons with other groups (the *out-groups*) in a way that favours the in-group. Consequently, we expect that bystanders will be more likely to comply with the behaviour of other bystanders when these other bystanders are part of the in-group. Due to the nature of relationships on SNS, where everyone in the network is named a "friend" and thus constitutes a member of the in-group, we need to narrow our definition of in-group membership by making a distinction according to relationship strength. This distinction has also been supported by research among adolescents. Research on adolescents' substance use, for example, showed that social influence exerted by friends is more important than influences by other same-aged peers and that social influence by best friends is more important than the impact of other good friends (Morgan & Grube, 1991). A similar mechanism can be found in adolescents' pro-social behaviour, as Barry and Wentzel (2006) found that an adolescent's pro-social tendencies are

more likely to be affected by the pro-social behaviour of a friend when he or she has a strong, positive bond with that friend. Inspired by these studies on social influences between different types of friends, we will distinguish between a harassing situation on SNS in which other bystanders are good friends (members of the in-group) and one in which other bystanders are mere acquaintances (members of the out-group). Since bystanders also use information on the other bystanders' behaviour (Marsden & Friedkin, 1993), we expect an interaction effect between the behaviour and the identity of the other bystanders.

*H 3a: Bystanders who see good friends defend a victim of harassment on SNS will have higher behavioural intentions to help the victim and lower behavioural intentions to reinforce the bully, compared to bystanders who see acquaintances defend the victim.*

*H 3b: Bystanders who see good friends reinforce the bully in case of harassment on SNS will have higher behavioural intentions to reinforce the bully and lower behavioural intentions to help the victim, compared to bystanders who see acquaintances reinforce the bully.*

### 3.3. Gender

Since bystanders of traditional bullying appear to react differently according to their own gender (e.g. Obermann, 2011; Oh & Hazler, 2009; Pöyhönen, Juvonen, & Salmivalli, 2012), this factor has also been of interest in research on bystanders of cyberbullying. Until now, studies on cyberbullying have reported contradictory results: while Macháčková, Dedkova, Sevcikova and Cerna (2013) found no effect of gender on supportive behaviour towards the victim, the study of Van Cleemput, Vandebosch and Pabian (Unpublished) showed that girls were more likely to help the victim, while boys were more likely to join in the bullying. In order to shed more light on the effect of gender on bystander behaviour, we included gender as a control variable in our models.

## 4. Material and methods

### 4.1. *Stimulus materials and manipulations*

In order to test the aforementioned hypotheses, we set up an experimental design with a 2 (low vs. high perceived severity) x 2 (other bystanders reinforce the bully vs. defend the victim) x 2 (other bystanders are acquaintances vs. good friends) between-subjects design. These factors were manipulated in a scenario that reported a harassing incident on Facebook, involving one perpetrator and one victim and other bystanders reacting to it. We chose to use a Facebook setting, since it is the most popular SNS with Flemish youngsters (Pabian & Vandebosch, Unpublished results). The perpetrator and the victim were introduced as hypothetical school acquaintances of the participants. In the scenario it was stated that other bystanders reacted to the events, without specifying how many bystanders did so. These other bystanders were either said to be acquaintances or good friends of the participants (participants were provided with definitions to guide the distinction<sup>1</sup>). These other bystanders could perform two different types of actions: reinforce the bully by clicking “I like” or by writing similar offensive remarks, or defend the victim by telling the perpetrator to stop.

With regard to the manipulation of the severity of the harassing incident, a pre-test was set up in order to investigate the perceived severity of different types of harassing incidents on SNS (e.g. harassing remark or photo, physical threat, hate page). The aim of this pre-test was to choose two types of situations with a large and significant difference in severity as perceived by youngsters. Preferably, both situations would also be perceived as credible by youngsters, in order to provide the feeling that this could happen in real life and therefore ensure external and ecological validity. The pre-test was performed in two Flemish schools

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<sup>1</sup> Acquaintance: “someone you occasionally see and talk to, but whom you do not have a close connection with or tell personal things to” / Good friend: “someone you hang out with and talk to a lot, someone whom you have a close connection with and whom you tell personal things to”.

with 98 students of the second year of secondary education (age:  $N=96^2$ ,  $M=13.38$ ,  $SD=0.548$ ; gender: 49 % boys; educational level: 51 % general education, 49 % preparatory vocational or technical education).<sup>3</sup> The students all scored nine harassing and potentially hurtful situations on SNS on credibility and on five dimensions of severity<sup>4</sup>, measured on seven-point Likert scales. With regard to the severity items, a mean severity scale was created for each situation (reliability, measured via internal consistency, of the scales for all situations:  $\alpha > .75$ ). A repeated measures ANOVA showed a significant difference in severity perception of the different situations ( $F(8,80)=17.60$ ,  $p < .001$ ,  $\eta^2 = .64$ )<sup>5</sup>. By examining subsequent univariate tests we were able to select two situations with a large and significant mean difference in severity ( $MD = 1.26$ ,  $SE = 0.15$ ,  $p < .001$ ): one in which the perpetrator put a privacy-invading photo of the victim on Facebook with a deriding comment (more severe situation:  $N=88$ ,  $M=6.13$ ,  $SD=1.04$ ), and one in which the perpetrator put an offensive comment or insult on the victim's Facebook wall (less severe situation:  $N=88$ ,  $M=4.87$ ,  $SD=1.42$ ). These two situations both scored fairly on credibility (respectively:  $N=96$ ,  $M=4.80$ ,  $SD=2.02$ ;  $N=96$ ,  $M=4.03$ ,  $SD=1.83$ ). Figures A.1 and A.2 in appendix show how these two situations were operationalized in this study. The results of the pre-test correspond with those of existing research on cyberbullying which found that youngsters consider bullying through photos and videos worse than bullying through offensive comments (Menesini, Nocentini, & Calussi, 2011).

#### 4.2. Research instrument

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<sup>2</sup> Two participants did not indicate their age.

<sup>3</sup> All students and their parents provided their consent; response rate: 100 %.

<sup>4</sup> Higher scores indicating higher severity: severe – not severe (reversed), amusing – not amusing, hurtful – not hurtful (reversed), not a problem at all – a big problem, funny – not funny

<sup>5</sup> Statistical analyses were performed using IBM SPSS Statistics, version 20. Significance was tested using a 95 % confidence interval.

The research instrument consisted of a scenario on a harassing incident on Facebook that was put into a paper-and-pencil questionnaire. Participants were instructed to read the scenario carefully and imagine that they encountered the incident on Facebook as bystanders. After the scenario, questions were presented on the participants' behavioural intentions to help the victim and reinforce the bully. The questions had been pre-tested in two preparatory vocational/technical classes, after which they had been adapted to ensure comprehensibility.

In accordance with our goal to measure a large range of possible bystander responses, we aimed to assess five behavioural intentions to help the victim ("telling the victim you think the bullying is not OK", "comforting the victim", "giving the victim advice", "reporting the cyberbullying incident to someone who can help" and "defending the victim") and three behavioural intentions to reinforce the bully ("sharing it with others to make fun of the victim/the situation", "telling the bully you think it is funny" and "doing something similar"). Each behavioural intention was divided into more specific behavioural intentions that happen via ICT (e.g. posting on Facebook, sending a text) or at school, and behaviours that happen in private (e.g. only towards the victim/the bully) or in public (e.g. in front of a larger audience). The behavioural intentions of these specific behaviours were measured on seven-point Likert scales, ranging from "I would definitely not do this" (1) to "I would definitely do this" (7). Reliability analyses on the experimental data, measured via internal consistency, showed that the eight groups of specific behavioural intentions all formed reliable scales (all  $\alpha > 0.72$ , see tables B.1 and B.2 in appendix). Consequently, their means were calculated in order to create five behavioural intentions to help the victim and three behavioural intentions to reinforce the bully. The latter behavioural intentions were used in the analyses of this study.

As we aimed to account for participants' background differences, we included questions on socio-demographic variables (gender, educational level), participants' internet use (in days per week and in hours on a school or week-end day), SNS profile ownership (profile

ownership and most used profile), SNS use (in hours on a school or week-end day) and number of contacts on the most used SNS. We also asked personal questions on involvement in cyberbullying on SNS as a victim, perpetrator or bystander within the last six months. By comparing the participants in the different conditions on these background variables, we would be able to ensure that there were no systematic background differences between participants in the different conditions.

#### 4.3. *Participants*

A total of 453 Flemish students from the second year of secondary education, thirteen to fourteen years old, participated in this study. We chose second year students because research (Tokunaga, 2010; Williams & Guerra, 2007) has shown that cyberbullying peaks in this age group. We recruited participants in six secondary schools in the surroundings of two Flemish cities: five schools in the surroundings of Turnhout and one in the surroundings of Mechelen. All of these schools indicated that they have a policy on how to handle (cyber)bullying and three out of six already informed their second year students on (cyber)bullying this school year. Eighty-eight per cent of the second year students in these schools received parental consent and consented to participate in the study themselves. Participants had an average age of thirteen years ( $N=450$ ,  $M=13.29$ ,  $SD=0.58$ ), 55 % of them being boys. All three educational levels were included: 69 % of participants indicated that they were in general secondary education, while 26 % were in preparatory vocational or technical education.<sup>6</sup>

#### 4.4. *Research procedures*

The participants were randomly allocated to one of the eight experimental conditions (56 or 57 participants per condition). During the experiment, participants of each school were gathered in one room to ensure comparable circumstances. If there were too many participants to fit in one room, they were split into two consecutive groups. Before handing out the

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<sup>6</sup> Educational level: 6 % non-response.

questionnaires, the researchers gave the participants some information on the topic of the study<sup>7</sup> and instructions on how to fill in the questions, while ensuring anonymity. The participants had approximately 50 minutes to complete all questions. On a form that was collected separately from the questionnaires, participants could indicate their willingness to participate in a raffle to win a cinema ticket (as an incentive to increase motivation). Afterwards, participants were debriefed and they received a form with information on whom to contact when encountering cyberbullying.

#### 4.5. *Analysis*

Before conducting any analyses, we first calculated the dependent variables'  $z$ -scores for skewness and kurtosis<sup>8</sup> (see table 1) and we visually examined the distribution of the dependent variables, in order to check their normality (Tabachnick & Fidell, 2007)<sup>9</sup>. We saw that while the behavioural intentions to help the victim ("telling the victim you think the bullying is not OK", "comforting the victim", "giving the victim advice", "reporting the cyberbullying incident to someone who can help" and "defending the victim") could be considered as normally distributed, the distributions of the behavioural intentions to reinforce the bully ("sharing it with others to make fun of the victim/the situation", "telling the bully you think it is funny" and "doing something similar") appeared to be non-normally distributed.

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<sup>7</sup> Cover story: questionnaire on social interactions between youngsters on SNS.

<sup>8</sup> Coefficient divided by standard error (Tabachnick & Fidell, 2007)

<sup>9</sup> We did not base our assessment of normality on the Shapiro-Wilk Test, since it is found to be limited to a sample size of  $N=50$  (Rahman & Govindarajulu, 1997; Royston, 1982). Instead, we followed the suggestions of Tabachnick & Fidell (2007), by looking at  $z$ -scores for skewness and kurtosis and examining the visual appearance of the distributions.

Table 1. Summary analysis of the behavioural intentions to help the victim/reinforce the bully

Behavioural intentions (dependent variables)	<i>N</i>	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>Z</i> <sub>skewness</sub>	<i>Z</i> <sub>kurtosis</sub>
“Telling the bully you think it is not OK”	446	4.75	5.00	1.54	-5.08	-1.03
“Comforting the victim”	449	4.68	5.00	1.67	-4.72	-2.54
“Giving the victim advice”	445	4.78	5.00	1.57	-5.11	-0.98
“Reporting the incident”	449	3.98	4.00	1.67	-0.57	-3.71
“Defending the victim”	448	4.64	4.75	1.67	-2.96	-3.14
“Spreading the incident”	452	1.71	1.00	1.10	18.56	22.28
“Telling the bully you think it is funny”	451	2.03	1.75	1.15	9.49	1.62
“Doing something similar”	447	1.83	1.00	1.43	17.57	15.94

Note. *Mdn*=Median; *Z*<sub>skewness</sub>, *Z*<sub>kurtosis</sub> = z-scores for skewness and kurtosis

Since the behavioural intentions to help the victim could be considered as normally distributed, we were able to perform parametric tests. We first composed a multivariate ANOVA<sup>10</sup> with gender, the contextual factors (incident severity, other bystanders' identity and other bystanders' behaviour) and all possible interaction effects between the contextual factors as independent variables, and with these five behavioural intentions to help the victim as dependent variables. Afterwards, separate ANOVA analyses were performed to further examine significant results.

As the behavioural intentions to reinforce the bully appeared to be non-normally distributed, we accounted for this problem by using dichotomisation. For each behavioural

<sup>10</sup> The multivariate ANOVA was aimed to control for the significant correlations between the behavioural intentions to help the victim.

intention, participants who scored 1, were recoded into 0. This group of participants had no intention to perform this reinforcing behaviour (from 34.4 to 63.1 % of respondents). Participants who had a score ranging from 1.01 to 7 were recoded into 1 and thus formed the group of participants who displayed some intention to reinforce the bully (from 36.9 to 65.6 % of respondents). These dichotomised behavioural intentions to reinforce the bully were then included as dependent variables in separate logistic regression models. Again, gender, the contextual factors (incident severity, other bystanders' identity and other bystanders' behaviour) and all possible interaction effects between the contextual factors were included in the models.

In this study, statistical analyses were performed using IBM SPSS Statistics, version 20. Significance was tested using a 95 % confidence interval.

## 5. Results

### 5.1. *Equality of treatment groups*

In order to ensure that the groups of participants assigned to the different conditions were comparable, Pearson Chi-square tests were performed for each background variable separately (see section 4.2. for an overview of the background variables). These tests showed no significant background differences between the treatment groups ( $1.02 \leq \chi^2 \leq 52.84$ , all  $p > .05$ ).

### 5.2. *Manipulation check: perceived severity*

In the questionnaire perceived severity was measured using the same items as in the pre-test (see section 4.1). Reliability analysis measured via internal consistency showed that the five items formed a reliable scale ( $\alpha = 0.85$ ) and therefore their mean was calculated. An Independent Samples T-test was then used to assess mean differences in perceived severity between participants who saw the situation with the photo (supposed to be more severe) and

participants who were exposed to the situation with the insult (supposed to be less severe).

Results of this test revealed that the manipulation of severity was successful: there was a significant positive mean difference ( $t(439)=5.47, p<.001, 95\% \text{ CI } [0.38, 0.81], d=0.60$ ) between the perceived severity of the photo ( $n=219, M=5.94, SD=1.12$ ) and the insult ( $n=222, M=5.35, SD=1.17$ ).

### 5.3. Analysis of the behavioural intentions

The behavioural intentions to help the victim were first analysed through a multivariate ANOVA with gender, the contextual factors (incident severity, other bystanders' identity and other bystanders' behaviour) and all possible interaction effects between these contextual factors as independent variables, and with the five behavioural intentions to help the victim ("telling the victim you think the bullying is not OK", "comforting the victim", "giving the victim advice", "reporting the cyberbullying incident to someone who can help" and "defending the victim") as dependent variables. This model showed that gender, incident severity and the interaction between incident severity and the identity of other bystanders were significantly related to the behavioural intentions to help the victim (see table 2).

Table 2. Results of multivariate ANOVA of independent variables on behavioural intentions to help the victim (dependent variables)

Independent variables	<i>A</i>	<i>F</i>	$\eta^2$
Incident severity	0.91	8.75***	.10
Other bystanders' identity	0.99	0.70	.01
Other bystanders' behaviour	0.99	0.66	.01
Other bystanders' identity x other bystanders' behaviour	0.99	0.98	.01
Incident severity x other bystanders' identity	0.96	3.66**	.04
Incident severity x other bystanders' behaviour	0.99	0.87	.01
Incident severity x other bystanders' identity x other bystanders' behaviour	0.98	1.70	.02
Gender	0.85	6.80***	.08

Note. *A* = Wilks' Lambda; \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$

In order to further inspect the significant effects produced by the multivariate ANOVA, the behavioural intentions to help the victim were subsequently analysed through ANOVA analyses for each behavioural intention separately. As independent variables, gender, the main contextual factors (incident severity, other bystanders' identity and other bystanders' behaviour) and all possible interactions between the contextual factors were included. The models turned out significant for four out of five behavioural intentions to help the victim: "comforting the victim" ( $F(8,439)=6.97, p<.001, \eta^2=.11$ ), "giving the victim advice" ( $F(8,435)=3.62, p<.001, \eta^2=.06$ ), "reporting the incident" ( $F(8,439)=6.55, p<.001, \eta^2=.11$ ) and "defending the victim" ( $F(8,438)=2.55, p=.010, \eta^2=.04$ ). The variance ( $R^2_a$ ) explained by these models ranged from 2.7 % for "defending the victim" and 4.5 % for "giving the victim advice", to 9.0 % for "reporting the incident" and 9.6 % for "comforting the victim". With regard to "telling the bully you think it is not OK" the model was marginally significant ( $F(8,436)=1.96, p=.050, \eta^2=.04$ ). Table 3 below represents the effects of the independent variables for each behavioural intention to help the victim.

Table 3. Results for ANOVA analyses of independent variables on the behavioural intentions to help the victim

Independent variables	Behavioural intentions (dependent variables)									
	"Telling the bully you think it is not OK"		"Comforting the victim"		"Giving the victim advice"		"Reporting the incident"		"Defending the victim"	
	<i>F</i>	$\eta^2$	<i>F</i>	$\eta^2$	<i>F</i>	$\eta^2$	<i>F</i>	$\eta^2$	<i>F</i>	$\eta^2$
Incident severity	6.01*	.01	7.70**	.02	3.66	.01	45.26***	.09	9.14**	.02
Other bystanders' identity	0.72	.00	0.01	.00	0.08	.00	0.45	.00	1.18	.00
Other bystanders' behaviour	0.05	.00	0.66	.00	0.02	.00	0.34	.00	0.88	.00
Other bystanders' identity x other bystanders' behaviour	1.75	.00	0.16	.00	0.98	.00	0.00	.00	0.62	.00

Incident severity x other bystanders' identity	2.06	.01	7.83**	.02	9.76**	.02	0.85	.00	1.00	.00
Incident severity x other bystanders' behaviour	1.13	.00	0.05	.00	0.20	.00	1.01	.00	0.52	.00
Incident severity x other bystanders' identity x other bystanders' behaviour	2.16	.01	0.79	.00	0.12	.00	0.19	.00	2.34	.01
Gender	1.82	.00	38.96***	.08	13.24***	.03	4.34*	.01	5.17*	.01

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

In order to analyse the dichotomised behavioural intentions to reinforce the bully, logistic regression analyses were performed for each dichotomised behavioural intention separately. Gender, the contextual factors and all possible interactions between the contextual factors were included in the models as independent variables. The test of the full model against a constant model was statistically significant for “doing something similar” ( $\chi^2(8)=16.29$ ,  $p=.038$ ) and “telling the bully you think it is funny” ( $\chi^2(8)=16.28$ ,  $p=.039$ ), indicating that for these behavioural intentions the model with the independent variables entered was significantly better than a constant model. The logistic regression model of “spreading the incident” did not appear to be significantly better than the model with only a constant ( $\chi^2(8)=9.44$ ,  $p=.306$ ). Nagelkerke’s  $R^2$  indicated a weak relationship between prediction and grouping for all reinforcing behavioural intentions ( $.03 \leq R^2 \leq .05$ ). The overall prediction success by the models was between 56.1 % and 66.0 %. In table 4 below, the effects of the independent variables on the dichotomised behavioural intentions to reinforce the bully are represented.

Table 4. Results for logistic regression analyses of independent variables on dichotomised behavioural intentions to reinforce the bully

Independent variables	Behavioural intentions (dependent variables)					
	“Spreading the incident”		“Telling the bully you think it is funny”		“Doing something similar”	
	Wald’s $\chi^2$	OR (95 % CI)	Wald’s $\chi^2$	OR (95 % CI)	Wald’s $\chi^2$	OR (95 % CI)
Incident severity	0.32	0.81 [0.38,1.70]	0.10	0.88 [0.40,1.95]	0.39	1.29 [0.58,2.83]
Other bystanders’ identity	2.24	1.76 [0.84,3.71]	0.94	1.51 [0.66,3.49]	6.68*	2.77 [1.28,5.98]
Other bystanders’ behaviour	0.89	1.43 [0.68,3.02]	0.01	0.96 [0.43,2.15]	0.44	1.31 [0.59,2.93]
Other bystanders’ identity x other bystanders’ behaviour	1.95	0.47 [0.17,1.36]	3.67	0.33 [0.10,1.03]	4.06*	0.32 [0.11,0.97]
Incident severity x other bystanders’ identity	0.62	0.66 [0.23,1.88]	0.01	0.95 [0.30,3.05]	0.79	0.61 [0.21,1.81]
Incident severity x other bystanders’ behaviour	1.05	0.57 [0.20,1.66]	0.29	0.74 [0.24,2.25]	0.82	0.59 [0.19,1.83]
Incident severity x other bystanders’ identity x other bystanders’ behaviour	1.64	2.66 [0.60,11.90]	1.02	2.27 [0.46,11.22]	0.30	1.55 [0.32,7.49]
Gender	0.00	1.01 [0.69,1.47]	4.04*	0.66 [0.45,0.99]	0.87	0.83 [0.56,1.23]

Note. OR = odds ratio; CI=confidence interval; \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$

### 5.3.1. Influence of incident severity

We hypothesised (H1) that incident severity would have an enhancing effect on the behavioural intentions to help the victim and an inhibiting effect on the behavioural intentions to reinforce the bully.

Regarding the behavioural intentions to help the victim, the multivariate ANOVA analysis (see table 2) demonstrated a significant effect of incident severity. The separate ANOVA analyses (see table 3) revealed that there was a significant difference with regard to incident severity for four out of five behavioural intentions: “telling the victim you think it is not OK”, “comforting the victim”, “reporting the cyberbullying incident” and “defending the victim”. Compliant with hypothesis H1, participants appeared to have higher behavioural

intentions to help the victim when they were exposed to the more severe incident, than when they were exposed to the less severe incident (see table 5 below).

Table 5. Specific results for incident severity in ANOVA analyses of independent variables on the behavioural intentions to help the victim

Behavioural intentions (dependent variables)	Incident severity (independent variable)					
	ANOVA test		Level of incident severity			
	<i>F</i>	$\eta^2$	<i>n</i>	Low severity <i>M</i> ( <i>SD</i> )	High severity <i>n</i>	<i>M</i> ( <i>SD</i> )
“Telling the bully you think it is not OK”	6.01*	.01	221	4.56 (1.47)	224	4.92 (1.59)
“Comforting the victim”	7.70**	.02	225	4.47 (1.65)	223	4.88 (1.67)
“Giving the victim advice”	3.66	.01	222	4.64 (1.56)	222	4.92 (1.57)
“Reporting the cyberbullying incident”	45.26***	.09	225	3.48 (1.54)	223	4.50 (1.64)
“Defending the victim”	9.14**	.02	223	4.40 (1.63)	224	4.87 (1.69)

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

In addition, the multivariate ANOVA analysis showed an unexpected significant interaction effect between incident severity and other bystanders' identity on behavioural intentions to help the victim (see table 2), while the separate ANOVA analyses demonstrated this interaction effect for “comforting the victim” and “giving the victim advice” (see table 3). In order to further examine this significant interaction effect, we first excluded respondents with missing values on either “comforting the victim” or “giving the victim advice” ( $n=12$ ), in order to be able to compare equal groups. Then, the data were split according to incident severity and Independent Samples T-tests were performed with other bystanders' identity as grouping variable and the two behavioural intentions to help the victim as dependent variables. The significant interaction effect seemed to follow the same pattern for the two behavioural intentions to help the victim: in the low severity case, participants had significantly higher behavioural intentions to comfort the victim ( $t(220)=2.34$ ,  $p=.020$ , 95% CI [0.08,0.94],  $d=0.51$ ) and give the victim advice ( $t(220)=2.03$ ,  $p=.043$ , 95% CI [0.01,0.83],  $d=0.42$ ) when other bystanders were acquaintances (“comforting the victim”:  $n=112$ ,  $M=4.72$ ,

$SD=1.59$ ; “giving the victim advice”:  $n=112$ ,  $M=4.85$ ,  $SD=1.54$ ) than when other bystanders were good friends (“comforting the victim”:  $n=110$ ,  $M=4.21$ ,  $SD=1.65$ ; “giving the victim advice”:  $n=110$ ,  $M=4.43$ ,  $SD=1.55$ ). In the high severity case, however, a reverse relationship became visible: participants had significantly higher behavioural intentions to comfort the victim ( $t(217)=-2.42$ ,  $p=.016$ , 95% CI [-0.96,-0.10],  $d=-0.53$ ) and give the victim advice ( $t(217)=-2.63$ ,  $p=.009$ , 95% CI [-0.96,-0.14],  $d=-0.55$ ) when other bystanders were good friends (“comforting the victim”:  $n=110$ ,  $M=5.16$ ,  $SD=1.51$ ; “giving the victim advice”:  $n=110$ ,  $M=5.19$ ,  $SD=1.45$ ) than when other bystanders were mere acquaintances (“comforting the victim”:  $n=109$ ,  $M=4.63$ ,  $SD=1.72$ ; “giving the victim advice”:  $n=109$ ,  $M=4.64$ ,  $SD=1.65$ ).

Figures 1 and 2 below serve to clarify the interaction effect in a visual way.

*Figure 1.* Significant interaction effect of incident severity x other bystanders’ identity (independent variables) on “comforting the victim” (dependent variable)

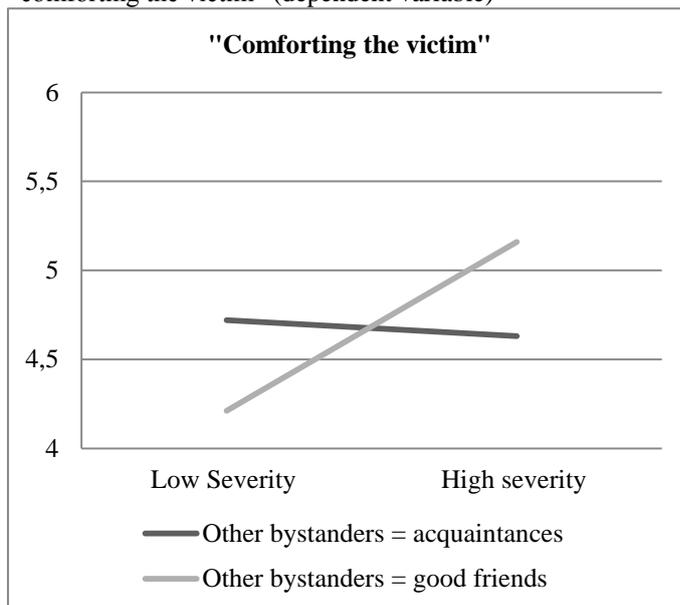
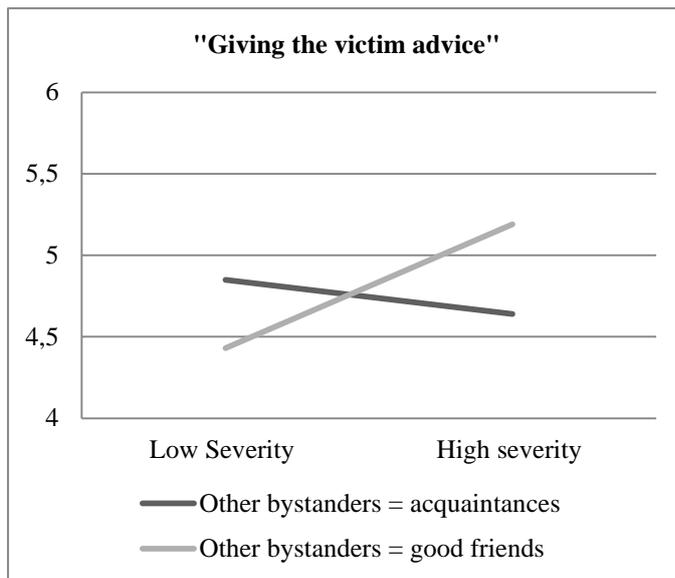


Figure 2. Significant interaction effect of incident severity x other bystanders' identity (independent variables) on "giving the victim advice" (dependent variable)



The logistic regression analyses on the dichotomised behavioural intentions to reinforce the bully showed that incident severity did not have a significant effect on either of these behavioural intentions (see table 4). Consequently, hypothesis H1 needs to be rejected with regard to the behavioural intentions to reinforce the bully.

### 5.3.2. Influence of other bystanders

With regard to the influence of other bystanders, we first hypothesised a main effect of other bystanders' behaviour (hypothesis H2). The multivariate ANOVA and the separate ANOVA analyses on the behavioural intentions to help the victim did not yield significant results for this contextual factor (see tables 2 and 3), nor did the logistic regression models of the dichotomised behavioural intentions to reinforce the bully (see table 4). As such, we need to reject hypothesis H2.

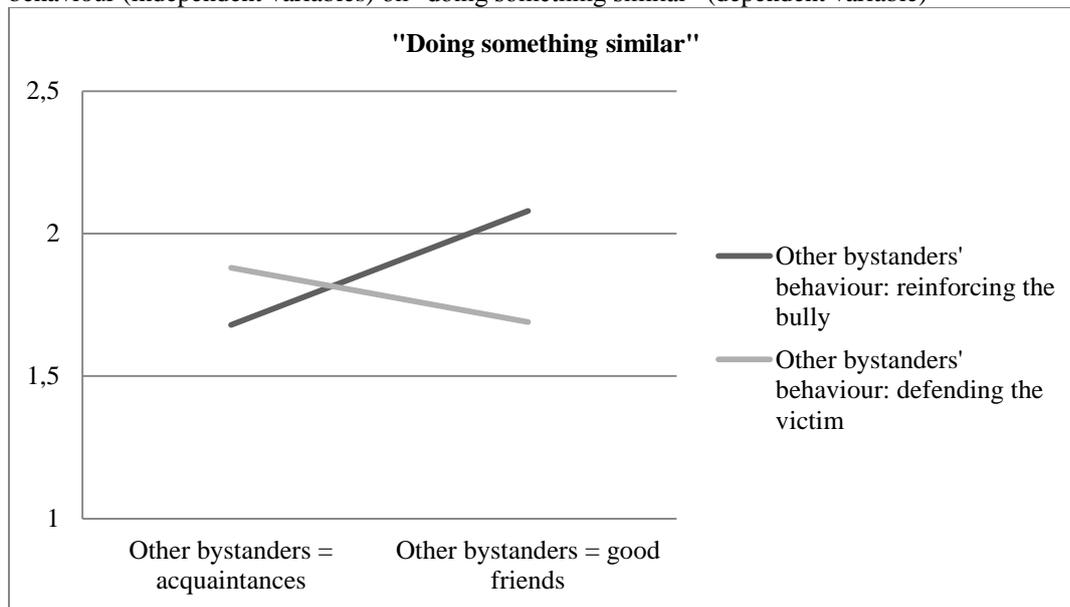
Secondly, we expected an interaction effect between other bystanders' identity and their behaviour (hypotheses H3a and H3b). With regard to the behavioural intentions to help the victim, the multivariate ANOVA and separate ANOVA analyses showed no significant interaction effect of this kind (see tables 2 and 3). However, as described in the former

section, the multivariate ANOVA (see table 2) revealed a significant interaction effect between other bystanders' identity and incident severity, more specifically for two out of five behavioural intentions to help the victim, as revealed in the separate ANOVA analyses (see table 3).

With regard to the behavioural intentions to reinforce the bully, the model for "doing something similar" showed an unexpected significant main effect of other bystanders' identity (see table 4). The odds ratio (OR=2.77) revealed that when other bystanders were said to be good friends, bystanders' behavioural intentions to reinforce the bully by doing something similar were almost three times as high compared to when other bystanders were acquaintances. The hypothesised interaction effect between other bystanders' identity and other bystanders' behaviour turned out to be significant only for "doing something similar" (see table 4). In order to further examine the significant interaction effect, the data were split according to other bystanders' behaviour, followed by non-parametric Independent Samples Mann-Whitney tests with other bystanders' identity as grouping variable and with "doing something similar" (undichotomised) as dependent variable. With regard to the case in which other bystanders reinforce the bully, the tests showed a significant difference between other bystanders' identity in "doing something similar" ( $U=5209.50$ ,  $Z=-2.68$ ,  $p<.001$ ,  $r=-0.18$ ). When we examined the means and medians, we saw that in cases when other bystanders reinforce the bully, participants had significantly higher behavioural intentions to reinforce the bully by doing something similar when these bystanders were good friends ( $n=113$ ,  $M=2.08$ ,  $Mdn=2$ ,  $SD=1.46$ ) compared to when these other bystanders were mere acquaintances ( $n=113$ ,  $M=1.68$ ,  $Mdn=1$ ,  $SD=1.24$ ). In the case in which other bystanders defended the victim, a significant difference between bystanders' identity in "doing something similar" ( $U=5859.50$ ,  $Z=-0.62$ ,  $p<.001$ ,  $r=-0.04$ ) was found as well. This difference was in the expected direction: in cases when other bystanders defended the victim,

participants had lower behavioural intentions to reinforce the bully by doing something similar when these other bystanders were good friends ( $n=113$ ,  $M=1.69$ ,  $Mdn=1$ ,  $SD=1.34$ ) than when these were acquaintances ( $n=108$ ,  $M=1.88$ ,  $Mdn=1$ ,  $SD=1.63$ ). The significant interaction effects are visually displayed in figure 3. Based on these results, we can accept Hypothesis H3a and H3B with regard to one of the behavioural intentions to reinforce the bully (“doing something similar”).

Figure 3. Significant interaction effect of other bystanders' identity x other bystanders' behaviour (independent variables) on “doing something similar” (dependent variable)



### 5.3.3. Influence of gender

While the multivariate ANOVA model showed a significant effect of gender on the behavioural intentions to help the victim (see table 2), the separate ANOVA models (see table 3) more specifically showed that gender had a significant effect on four out of five behavioural intentions to help the victim: “comforting the victim”, “giving the victim advice”, “reporting the incident” and “defending the victim”. In order to further examine this gender effect, we used Independent Samples T-Tests with gender as grouping variable and these four behavioural intentions to help the victim as dependent variables. These tests replicated the significant difference for three out of four behavioural intentions to help the victim: “comforting the victim”, “giving the victim advice” and “defending the victim” (see

table 6). With regard to “reporting the cyberbullying incident” the test was marginally significant ( $p=.054$ ). On average, girls appeared to have higher behavioural intentions to comfort the victim, give the victim advice and defend the victim than boys.

*Table 6.* Results of Independent Samples T-Tests with gender as grouping variable and four behavioural intentions to help the victim as dependent variables

Behavioural intentions (dependent variables)	T-Test statistics			Gender (grouping variable)			
	<i>t</i> ( <i>df</i> )	95 % CI	<i>d</i>	<i>n</i>	<i>M</i> ( <i>SD</i> )	<i>n</i>	<i>M</i> ( <i>SD</i> )
“Comforting the victim”	-6.22*** (443.52)	[-1.23, -0.64]	-0.94	201	5.19 (1.49)	247	4.26 (1.70)
“Giving the victim advice”	-3.74*** (442)	[-0.84, -0.26]	-0.55	200	5.09 (1.44)	244	4.53 (1.63)
“Reporting the cyberbullying incident”	-1.93 (446)	[-0.62, 0.01]	-0.31	202	4.16 (1.60)	246	3.85 (1.72)
“Defending the victim”	-2.16* (445)	[-0.65, -0.03]	-0.34	199	4.82 (1.66)	248	4.48 (1.67)

*Note.* CI=confidence interval; \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$

Concerning the behavioural intentions to reinforce the bully, the logistic regression analyses revealed that gender significantly influenced “telling the bully you think it is funny” (see table 4). A subsequent Independent Samples Mann-Whitney Test with gender as grouping variable and “telling the bully you think it is funny” (undichotomised) as dependent variable showed that boys ( $n=247$ ,  $M=2.18$ ,  $Mdn=1.75$ ,  $SD=1.24$ ) displayed significantly ( $U=21293.50$ ,  $Z=-2.81$ ,  $p=.005$ ,  $r=-0.13$ ) higher behavioural intentions to tell the bully they think it is funny than girls ( $n=203$ ,  $M=1.84$ ,  $Mdn=1.50$ ,  $SD=1.02$ ).

## 6. Conclusion and discussion

In this study we used an experimental design to examine contextual influences of a harassing incident on SNS on bystanders’ behavioural intentions to help the victim or reinforce the bully. In total, three contextual influences were examined: the severity of the incident, the identity of other bystanders who are present and the behaviour of these other bystanders. In addition, gender was added to the models as a control variable.

### 6.1. *Influence of incident severity*

Participants who were exposed to the more severe harassing incident had significantly higher behavioural intentions to help the victim (four out of five behavioural intentions to help the victim), compared to participants who were exposed to the less severe harassing incident. These results confirmed the findings of focus group research on bystanders of cyberbullying (DeSmet et al., 2012), which found that bystanders were more likely to help the victim in a severe case. However, no significant effect of incident severity was found on the behavioural intentions to reinforce the bully. This could be due to the inclusion of incident type (photo or insult) as a manipulation of incident severity, instead of using participants' actual perceived severity scores. In order to inspect this suggestion further, we added bystanders' own perceived severity scores of the incident as independent variable in a second step of the logistic regression models. These extended models showed a significantly increased model fit and significant effects of bystanders' perceived severity scores on all behavioural intentions to reinforce the bully. As bystanders perceived the incident as more severe, the odds of behavioural intentions to reinforce the bully decreased, which is in line with our expectations. Furthermore, the significant effect of gender on "telling the bully you think it is funny" disappeared when adding perceived severity scores. Since boys appeared to have a significantly lower severity perception than girls, this leads us to suggest that the effect of gender on this behavioural intention to reinforce the bully is mediated by severity perception.

Unexpectedly, a significant interaction effect was found between incident severity and other bystanders' identity on two out of five behavioural intentions to help the victim: "comforting the victim" and "giving the victim advice". In the low severity case participants had higher behavioural intentions to help the victim when other bystanders were acquaintances than when other bystanders were good friends. In the high severity case there

was a reverse relationship: when other bystanders were good friends, participants had higher behavioural intentions to help the victim than when other bystanders were mere acquaintances. We believe this interaction effect could be due to bystanders weighing benefits and risks of helping the victim differently according to the contextual characteristics of the harassing situation and the type of helping behaviour. The process of weighing risks (costs) and benefits (rewards) has already been investigated by Dovidio and colleagues (1991) with regard to bystanders' helping behaviour in emergency situations. Their *arousal: cost-reward model* of helping behaviour posits that bystanders want to reduce arousal elicited by witnessing a victim in distress by acting in a way that incurs as few net costs (costs minus rewards) as possible. In the case of witnessing a harassing incident, it could be that the youngsters weigh the fear to appear foolish in front of others or the *fear of negative social evaluation* when helping the victim (Latané & Darley, 1970 in Hudson & Bruckman, 2004; Karakashian, Walter, Christopher, & Lucas, 2006) with the *prospect of (social) rewards* by helping the victim, such as feelings of personal efficacy and admiration from others (Dovidio et al., 1991). As explained before, we expect the outcome of this weighing, the resulting behavioural intentions to help the victim, to be different according to the contextual characteristics of the harassing situation. First, we suggest that incident severity may have an impact on the perceived opportunities to obtain social rewards. When the harassing incident is considered as more severe, it could be clearer for bystanders whether helping the victim is required and appropriate and could thus lead to social rewards. Secondly, based on Teachman and Allen's (2007) finding that close peer interactions predict a higher fear of negative evaluation, it might be that the fear of negative social evaluation is higher when other bystanders are good friends than when they are mere acquaintances. Thirdly, based on the social identity approach (Tajfel & Turner, 1979 Jones et al., 2011), it might follow that

bystanders assign a larger value to social rewards (admiration, approval) from good friends compared to social rewards from acquaintances.

In sum, we expect that, in this study, the (dis)inhibiting processes described above might explain the interaction effect between incident severity and other bystanders' identity on behavioural intentions to help the victim. On the one hand, when the harassing incident was considered as less severe, bystanders could perceive a lower opportunity to gain social rewards. In addition, the presence of other bystanders could cause a perceived risk for negative social evaluation when helping, a risk which may be larger in front of good friends compared to acquaintances. Consequently, in a less severe situation bystanders would have lower behavioural intentions to help the victim when good friends were present than when mere acquaintances were present. On the other hand, when the harassing incident was considered as more severe, bystanders would perceive a lower risk for negative social evaluation and a higher opportunity for achieving social rewards, especially in front of good friends. Consequently, in a more severe situation bystanders would have higher behavioural intentions to help the victim when good friends were present, than when acquaintances were present.

Naturally, additional research is needed to confirm or reject these theoretical suggestions on the arousal: cost-reward model. Furthermore, we need to acknowledge that the interaction effect between incident severity and other bystanders' identity was only found for "comforting the victim" and "giving the victim advice. This finding sets these two behavioural intentions to help the victim apart from the other three ("telling the bully you think it is not OK", "reporting the incident" and "defending the victim"). Further investigation is warranted in order to examine why the interaction between incident severity and the identity of other bystanders has an effect on certain behavioural intentions to help the victim and not on others.

## 6.2. *Influence of other bystanders*

The behaviour of other bystanders did not seem to significantly influence any of the behavioural intentions to help the victim or reinforce the bully. Apparently, the behaviour of other bystanders on its own does not play such an important role in social influence or peer pressure on bystanders of harassment on SNS as we expected.

The hypothesised interaction effect between other bystanders' identity and their behaviour was not significant for any of the behavioural intentions to help the victim, but it was for "doing something similar". The direction of the effect was as expected. On the one hand, bystanders displayed higher behavioural intentions to reinforce the bully by doing something similar when good friends reinforced the bully than when acquaintances did. On the other hand, bystanders had lower behavioural intentions to reinforce the bully by doing something similar when good friends defended the victim than when acquaintances did so.

With regard to the influence of other bystanders' identity, the analyses revealed two unexpected results. First, as explained before, the interaction between other bystanders' identity and incident severity was found to be significant for two out of five behavioural intentions to help the victim. These results showed that the identity of other bystanders indeed plays an important role in bystanders' behavioural intentions to help the victim, as suggested by the social identity approach (Tajfel & Turner, 1979 in Jones et al., 2011). Secondly, a significant main effect of other bystanders' identity was found on one of the behavioural intentions to reinforce the bully: "doing something similar" (joining in the bullying). With regard to the latter result, it appears that bystanders have higher behavioural intentions to do something similar (or join in the bullying) when other bystanders are good friends than when other bystanders are mere acquaintances. This could be due to a desire to "show off" in front of good friends, to achieve status goals (Salmivalli, 2010) or other social rewards by performing this very visible reinforcing behaviour. This result also seems to provide evidence

for the role of the identity of the other bystanders (Tajfel & Turner, 1979 in Jones et al., 2011) and for our suggestion that social rewards granted by bystanders who are good friends might be deemed more important than social rewards provided by acquaintances.

It should be noted that the hypothesised interaction effect between other bystanders' identity and their behaviour was only found for one out of three behavioural intentions to reinforce the bully. Additional research could better clarify why "doing something similar" is influenced by other bystanders' identity and behaviour, while "telling the bully you think it is funny" and "sharing the cyberbullying incident" are not. Furthermore, we did not expect other bystanders' identity to have a main effect on (one of the) behavioural intentions (to reinforce the bully), without interacting with other bystanders' behaviour. This finding also warrants further investigation.

### 6.3. *Influence of gender*

By including gender in our models as a control variable, we found that girls had higher behavioural intentions to comfort the victim, give the victim advice, report the cyberbullying incident and defend the victim, while boys displayed higher behavioural intentions to tell the bully they think it is funny. These results are mainly in line with the research of Van Cleemput, Vandebosch and Pabian (Unpublished), who found that girls were more likely to help the victim and boys were more likely to join in the bullying.

## 7. Strengths and limitations

In this study, we aimed to contribute to existing research on harassing online incidents and cyberbullying by investigating a fairly new type of ICT (SNS) and by focusing on the behaviour of a group that remains relatively understudied (bystanders). In contrast to most other studies on cyberbullying bystanders that present correlational findings, this study employed an experimental design with a large number of participants. As it allows making

causal inferences about behavioural determinants, we believe the experiment is a promising method for studying bystander behaviour. Although the use of the experimental method is not unique in cyberbullying research on bystanders (see Barlińska et al., 2013; Freis & Gurung, 2013), we believe that by investigating this combination of contextual factors on SNS we can add to the existing knowledge on bystanders of harassing incidents or cyberbullying.

This experimental study also has some limitations that should be recognized. First, we must admit that we did not measure whether the harassing situations utilized are actually considered as cyberbullying by the adolescent participants. Research has shown that adolescents mainly look at intentionality and power imbalance when determining whether an action is considered as cyberbullying. This means they need information on the perspective of the bully, whether the actions are meant to hurt, and on the perspective of the victim, with regard to upset feelings and defending capabilities (Menesini et al., 2012). Due to the lack of this background information in our paper-and-pencil questionnaires, it could have been hard for adolescents to determine whether it was an incident of cyberbullying. Nevertheless, we aimed to counter part of this problem by selecting two situations (from the pre-test) that youngsters gave relatively high ratings on hurtfulness in the pre-test ( $M=4.38$  for the photo and  $M=6.19$  for the insult, on seven-point Likert scales).

Secondly, the stimulus materials were scenarios that the participants had to read in a questionnaire at school. These circumstances, however, are quite different from the ones in which youngsters typically encounter harassing incidents on SNS. Usually, they are actually using the SNS when they encounter such instances, either on their computer or on mobile devices. In addition, the behavioural intentions that students indicated in the questionnaire could differ from real life actions, due to social desirability or misinterpretation of the scenario or the questions, but also due to a possible misfit between behavioural intentions and actual behaviour.

Thirdly, the analyses showed fairly low explained variance for the models of the behavioural intentions to help the victim and reinforce the bully. We expect that the inclusion of psychological processes, such as empathy (Barlińska et al., 2013; Gini, Albiero, Benelli, & Altoe, 2008), moral disengagement (Hymel, Rocke-Henderson, & Bonnano, 2005; Obermann, 2011) and beliefs with regard to cyberbullying (Li & Fung, 2012) could make a significant contribution to our models, in addition to the participants' own perceived severity scores.

#### 8. Recommendations and implications for cyberbullying research and interventions

The experimental scenario design used in this study could be applied to investigate the influence of other contextual factors of a harassing incident on SNS, such as the identity and behaviour of perpetrators and victims. A similar scenario could also be implemented in virtual reality, as has recently been done by Slater and colleagues (2013) in order to investigate bystander responses to a violent incident. Such an approach would allow the scenario to be described in a more realistic way, while at the same time enabling researchers to monitor real computer-mediated behaviours.

The results of this experimental study have revealed an influence of other bystanders' behaviour and their identity on (one of the) behavioural intentions to reinforce the bully and an influence of other bystanders' identity on behavioural intentions to help the victim, which can be related to social influence and peer pressure. Accordingly, we would advise cyberbullying interventions to teach youngsters how to resist to negative peer pressure, focusing on both social influence caused by the behaviour of other bystanders and by who these other bystanders are (good friends or acquaintances). For example, youngsters could be taught how to resist reinforcing the bully when other bystanders are doing so, even when these other bystanders are good friends. In addition, they could learn how to help the victim, even when good friends are watching. Although this study has shown that bystanders are willing to help the victim in (severe) instances of cyberbullying, until now limited knowledge

is available on which type of helping behaviour adequately stops the bullying or buffers the negative effects on the victim. Additional research is warranted in order for cyberbullying interventions to be able to advise effective helping behaviours. By providing adolescent bystanders with behavioural options that have been proven to be effective and that they feel confident with, intervention developers could take an important step in tackling cyberbullying on SNS.

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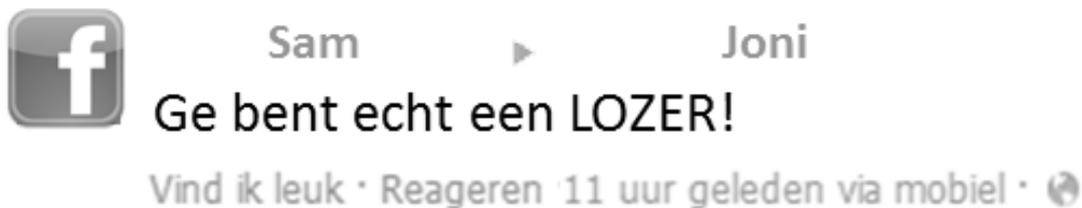
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## Appendix A

*Figure A.1.* High severity harassing Facebook incident: the perpetrator put a privacy-invading photo of the victim on Facebook with a deriding comment (“HAHA, check out Joni sitting there, what a failure!”)<sup>11</sup>



*Figure A.2.* Low severity harassing Facebook incident: the perpetrator put an offensive comment on the victim’s Facebook wall (“You are such a LOSER!”)



<sup>11</sup> The model on the picture provided consent.

## Appendix B

Table B.1. Overview of the questioned behavioural intentions of behaviours that are aimed to help the victim

Telling the victim you think the bullying is not OK $\alpha=.80$	Telling Joni (= <i>the victim</i> ) you think it is not OK in a comment on Facebook. In this way other people on Facebook can see that I think it is not OK.
	Telling Joni you think it is not OK via SMS, chat or e-mail. In this way it is “private” (= only between you and Joni, other people cannot see it).
	Telling Joni you think it is not OK at school, when other people are present.
	Telling Joni you think it is not OK at school, when we are alone, “in private”.
Comforting the victim $\alpha=.87$	Comforting Joni in a Facebook comment. In this way other people on Facebook can see it.
	Comforting Joni via SMS, chat or e-mail. In this way it is “private” (= only between you and Joni, other people cannot see it).
	Comforting Joni at school, when other people are present.
	Comforting Joni at school, when we are alone, “in private”.
Giving the victim advice $\alpha=.83$	Giving Joni advice on what to do, on Facebook (in a comment). In this way other people on Facebook can see it.
	Giving Joni advice on what to do via SMS, chat or e-mail. In this way it is “private” (= only between you and Joni, other people cannot see it).
	Giving Joni advice on what to do, at school, when other people are present.
	Giving Joni advice on what to do, at school, when we are alone, “in private”.
Reporting the cyberbullying	Telling someone who can help, on the internet, e.g. an organization for youngsters via e-mail, chat, their website or

incident $\alpha=.72$	forum...
	Reporting to Facebook to help Joni. In this way Facebook can solve it.
	Telling a teacher, a student counsellor, my parents... to help Joni.
Defending the victim $\alpha=.87$	Defending Joni in a Facebook comment, e.g. by telling Sam to stop. In this way other people on Facebook can see it.
	Defending Joni via SMS, chat or e-mail, e.g. by telling Sam to stop. In this way it is "private" (= only between you and Sam, other people cannot see it).
	Defending Joni at school, e.g. by telling Sam to stop, when other people are present.
	Defending Joni at school, e.g. by telling Sam to stop, when we are alone, "in private".

Table B.2. Overview of the questioned behavioural intentions of behaviours that reinforce the bully

Sharing with others (to make fun of the victim/the situation) $\alpha=.83$	Sending it to others or telling them about it via SMS, chat, or e-mail, to make fun of it.
	Showing others at school or telling them about it, to make fun of it.
Telling the bully you think it is funny $\alpha=.81$	Telling Sam (= <i>the bully</i> ) you think it is funny via Facebook, by clicking "I like" or by writing it in a comment. In this way other people can see that you think it is funny.
	Telling Sam you think it is funny via SMS, chat or e-mail. In this way it is "private" (= only between you and Sam, other people cannot see it).
	Telling Sam you think it is funny at school, when other people are present.
	Telling Sam you think it is funny at school, when we are alone, "in private".
Doing something similar	Saying something similar about Joni on Facebook, e.g. by writing a similar comment. In this way other people on Facebook can see it.

