A Process Model of Cyberbullying in Adolescence

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<td>Lazuras, Lambros; South-East European Research Centre (SEERC), Psychology Barkoukis, Vassilis; Aristotle University of Thessaloniki, Department of Physical Education &amp; Sport Science Ourda, Despoina; Aristotle University of Thessaloniki, Department of Physical Education &amp; Sport Science Tsorbatzoudis, Haralambos; Aristotle University of Thessaloniki, Department of Physical Education and Sport Science</td>
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Abstract

Cyberbullying is an emerging form of aggression utilizing means of information and communication technologies (ICTs), and the available knowledge base about the causes and psychosocial predictors of cyberbullying is still limited. The present study used an integrated theoretical model incorporating empathy, moral disengagement, and social cognitions related to cyberbullying. Structured questionnaires were administered to 355 randomly selected adolescents ($M = 14.7, SD = 1.20$). Linear regression analysis showed that social norms, prototype similarity and situational self-efficacy directly predicted cyberbullying expectations. Multiple mediation modelling indicated that normative influences mediated the effects of moral disengagement and affective empathy on cyberbullying expectations. These findings provide valuable information regarding the effect of both distal and proximal risk factors for cyberbullying in adolescence, highlight the relationship between normative processes and moral self-regulation, and set the basis for related educational and preventive interventions.
A Process Model of Cyberbullying in Adolescence

Cyberbullying

Cyberbullying\(^1\) is an emerging form of aggression that takes place in cyberspace and is utilized by contemporary information and communication technologies (ICTs). Unlike traditional face-to-face bullying, cyberbullying provides total anonymity to the aggressor, and can reach a wide audience (e.g., a humiliating video against another person posted on social networking or file sharing websites can become visible to millions of Internet users; Beran & Li, 2007; Patchin & Hinduja, 2006). Most importantly, cyberbullying can have a significant psychological impact on the victim, leading to withdrawal and social exclusion, lower self-esteem and academic achievement, or even depression and suicide ideation and attempts (Hinduja & Patchin, 2010; Junoven & Gross, 2008; Klomek, Sourander, & Gould, 2010; Li, 2007). The rates of cyberbullying range between 12-25% in Europe, USA, and Canada, while the overall rates of other forms of online aggression may be even higher (Patchin & Hinduja, 2006; Slonje & Smith, 2008; Ybarra & Mitchell, 2004).

Because cyberbullying has only recently attracted research attention (most empirical studies on the subject being published after 2008), there are still important questions to be answered and accordingly inform evidence-based preventive strategies (Li, 2007; Pathcin & Hinduja, 2006). One such question is whether cyberbullying can be explained solely by individual characteristics and traits, or by the interplay between traits and social cognitions that facilitate behaviour initiation. So far, empirical research has pointed out some relevant traits for cyberbullying, such as empathy, and has also identified the role of cognitive processes like moral disengagement, and personal beliefs, including attitudes, normative beliefs, and...
demographic characteristics, such as age and gender (Ang & Goh, 2010; Pornari & Wood, 2010; Walrave & Heirman, 2011). Nevertheless, researchers have yet to examine the interplay among these risk factors, and, accordingly provide an integrated behavioural model for cyberbullying in young people.

**Empathy**

Empathy is a cardinal aspect of human behaviour that facilitates and eases social interaction by allowing people to identify and communicate each other’s emotions (Cohen & Strayer, 1996; Davis, 1994; Preston & De Waal, 2002). Researchers have argued that empathy should be treated as a relatively stable attribute in a person’s lifetime that may affect different types of social behaviours (Loudin, Loukas, & Robinson, 2003; Strayer, 1987). Studies have shown that empathy comprises two rather distinct processes: a cognitive process reflecting one’s ability to identify and cognitively process another person’s emotional states, and an affective process that facilitates emotional understanding and communication through an emotional and less cognitively-bound channel, also termed “vicarious emotional sharing” (Davis, 1983; Shamay-Tsoory, Aharon-Peretz, & Perry, 2009).

In relation to bullying, several studies have shown that lower levels of empathy are associated with higher frequency of bullying behaviours in children and adolescents (Bartholow, Sestir, & Davis, 2005; Endresen & Olweus, 2002; Jolliffe & Farrington, 2006; Lovett & Sheffield, 2007; Olweus, 1993). In a similar fashion, recent studies confirmed that empathy plays an important role in cyberbullying behaviour. Specifically, Ang and Goh (2010) showed that both male and female adolescents with lower empathy levels, reported higher cyberbullying scores, and Schultze-Krumbholz and Scheithauer (2009) found that both cyberbullying
perpetrators and victims reported lower empathy levels, as compared to individuals not involved in cyberbullying. In a similar vein, Steffgen, Konig, Pfetsch, and Melzer (2011) found that cyberbullies had significantly lower scores on empathy than non-cyberbullies adolescents. It is noteworthy that the aforementioned studies did not employ the same measures of empathy. Thus, the findings actually show that the relationship between cyberbullying and empathy is independent of the methods used to assess this effect.

Moral disengagement

In their course of life, individuals engage in behaviours that are in discord with their moral or personal values. In order to cope with and resolve this dissonance one can cognitively re-process the moral values attached to the behaviours and accordingly initiate a moral disengagement mechanism (Bandura, 1986, 1991). This strategy allows the individual to cognitively moralize actions that would otherwise be judged as against personal values and moral norms (Bandura, Barbaranelli, Caprara, & Pastoretti, 1996; McAlister, Bandura, & Owen, 2006). Thus, moral disengagement is likely to protect the individual’s self-image and resolve cognitive dissonance by letting him/her self-justify for their actions (Bandura, 2002). It is sensible, therefore, to assume that moral disengagement can ‘soothe’ the mental discomfort associated with disputes, arguments, and even more extreme forms of aggressive behaviours that may occur in the course of social interaction. Indeed, several studies have shown that there is a positive correlation between higher levels of moral disengagement and higher levels of aggressive behaviours (Bandura et al., 1996; Gini, 2006). In relation to bullying behaviour, the findings are mixed with some studies reporting that moral justification predicted only traditional bullying but not cyberbullying (Bauman & Pero, 2010; Perren & Gutzwiller-Helfenfinger, 2012), whereas others have reported a
significant correlation between moral disengagement and both traditional bullying and cyberbullying (Pornari & Wood, 2010). Given that cyberbullying studies have only recently emerged, these findings show that further research is needed in order to establish the role of disengagement in the process of cyberbullying.

**Attitudes, norms, regret and intentionality**

Cyberbullying is defined as a goal-directed behaviour that is intended to hurt the potential victims (Patchin & Hinduja, 2006; Pyzalski, 2011). Cyberbullying may include a wide range of behaviour, including posting offensive and insulting messages on the web, harassment and mistreatment with online means (e.g., texting, instant messaging) altering or hacking personal accounts and information in social networking sites, and even posting embarrassing videos online, or creating libellous blogs against someone (Junoven & Gross, 2008; Li, 2007). At the very least, such actions require some sort of strategic delegation of time and effort. Thus, intentionality plays a key role in the occurrence of cyberbullying, and distinguishes cyberbullying from other more general forms of aggression in adolescence (Pyzalski, 2011; Slonje & Smith, 2008).

Goal intentions, and their psychosocial predictors, are important in understanding premeditated behaviours. Research on the Theory of Planned Behaviour (TPB; Ajzen, 1991; 2002) has shown that attitudes, social norms, and self-efficacy beliefs explain a great deal of intention-formation across behavioural domains in adolescence (Conner & Armitage, 1998; Hamilton & White, 2008; McMillan & Conner, 2003), including aggressive acts like peer sexual harassment and abuse (Li, Frieze, & Tang, 2010). Nevertheless, the correspondence between intentions and actual behaviour is far from being perfect (e.g., Webb & Sheeran,
2006). Therefore, researchers have suggested that the traditional TPB approaches are
enriched with theory-driven variables that can explain specific behaviours in specific

To this end, several studies have shown that the tripartite of attitudes-social
norms-self efficacy can better predict intentions and behaviour if additional variables
are assessed, such as anticipated regret, which reflects the feeling of remorse from
following (or abstaining from) a specific course of action (Abraham & Sheeran, 2004;
Conner et al., 2006). Anticipating negative affect for engaging in a specific course of
action, or from not enacting specific behaviours with benefits to the self (e.g.,
exercise), is likely to influence intentions, and strengthen the link between intentions
and behaviour (Abraham & Sheeran, 2004; Conner & Armitage, 1998; Perugini &
Bagozzi, 2001). Also, considering the role of descriptive norms (i.e., judgments of
frequency and prevalence of target behaviours) over subjective norms (i.e., perceived
social approval of target behaviours), might further enhance the predictive validity of
normative influences on intentions (Rivis & Sheeran, 2003a). Accordingly, normative
influences can be understood in terms of stored social representations or prototypes,
whereby more favourable evaluations of these prototypes predict stronger intentions
to engage in prototype-relevant behaviours (Rivis & Sheeran, 2003b). Prototype
evaluation has been widely studied in the framework of the Prototype/Willingness
model to predict adolescent risk taking (Gerrard, Gibbons, Stock, Vande Lune, &
Cleveland, 2005; Gibbons, Gerrard, Blanton, & Russell, 1998), as well as in TPB
studies (e.g., Rivis, Sheeran, & Armitage, 2006; Norman, Armitage, & Quigley,
2007).

Finally, researchers have argued that the intention concept itself needs to be
changed in order to better understand adolescent risk-taking. In particular, instead of
asking questions referring to concrete plans (e.g., I intent to do X), it is advisable to assess intentionality through questions of behavioural expectations (e.g., I expect to do X), because “people often do not expect what they intend to do, and vice versa” (Davis & Warshaw, 1992; p. 392). Unlike personal planning, therefore, when asked about the perceived likelihood of performing a target action, adolescents may consider potential barriers to action, external influences, and personal skills and competences; thus, making behavioural expectations more valid predictors of future behaviour, than behavioural intentions (Davis & Warshaw, 1992; Rhodes & Matheson, 2005; Warshaw & Davis, 1986).

**A process-model approach to cyberbullying**

“Psychologists often conduct research to establish whether and to what extent one variable affects another. However, the discovery that two variables are related to each other is only one small part of the aim of psychology. Deeper understanding is gained when we comprehend the process that produces the effect.” (Preacher & Hayes, 2004, p. 717)

Preacher and Hayes’ (2004) assertion is highly relevant to the study of cyberbullying for the following reasons. Firstly, related research has already identified some psychosocial correlates of cyberbullying, but we need to put these associations in context in order to better understand the causal processes and mechanisms underlying the behaviour in question. Secondly, cyberbullying is a recent phenomenon, and related theories are still in its infancy. Therefore, by using theoretical developments in other fields of research (e.g., health behaviour, decision-making, and risk-taking) we can inform subsequent research and theory development in cyberbullying. Finally, by understanding the causal mechanisms of cyberbullying we can accordingly inform evidence-based preventive strategies. In the present study we suggest that such an integrative process-model approach will be of benefit to
cyberbullying research, as it will shed light to the causal process underlying intention-formation for cyberbullying behaviour. This is highly relevant to past research on the subject, because such a process-model approach will integrate previous findings and provide a theory-driven model of cyberbullying behaviour.

To this end, the present study employs an integrated theoretical model to assess the predictors of adolescents’ cyberbullying intentions. This model pertains to the direct and indirect effects of individual traits and self-regulatory processes, and social cognitions relevant to cyberbullying (e.g., attitudes, norms, self-efficacy, anticipated emotions). Empathy is seen as a personality trait that can influence the decision to engage in cyberbullying directly, or indirectly, through the effects of more proximal predictors, such as personal attitudes or social norms. Past research on the theory of planned behaviour and related models of intention-formation have shown that individual traits can indeed influence intentions both directly and indirectly (e.g., Conner & Armitage, 1998; Fishbein, 2009; Rhodes & Courneya, 2003).

Furthermore, according to Bandura et al. (1996) moral disengagement induces aggressive behaviour indirectly, through aggression proneness. In this line it could be argued that moral disengagement could induce cyberbullying behaviour by encouraging cyberbullying intentions (seen as eagerness/proneness for cyberbullying). In this regard, it would be interesting and theoretically relevant to assess whether moral disengagement is associated directly with cyberbullying intentions, after controlling for the effects of other predictors of intentionality, such as relevant social cognitions (e.g., attitudes, norms, and efficacy). The need to further examine the relationships between moral and social cognitive mechanisms in relation to adolescent bullying behaviour was also addressed by previous research (e.g., Gini, 2006). Finally, it would be of interest to assess the unique direct effects of social cognitions
towards cyberbullying. Several studies have shown that attitudes or social norms influence cyberbullying intentions and behaviour, but there are limited studies assessing the effects of these variables by taking into account the effects of other predictors of intentions (e.g., anticipated regret, prototype similarity). In line with these assumptions, it was hypothesized that lower empathy scores and higher levels of moral disengagement would predict cyberbullying intentions. Accordingly, it was expected that attitudes, social norms (subjective and descriptive norms), prototype favourability and similarity, anticipated regret, and self-efficacy would directly predict cyberbullying intention. In relation to the TPB mediating hypothesis, it was further hypothesized that empathy and moral disengagement would predict cyberbullying intentions indirectly, through the effects of social cognitions.

**Methods**

**Participants**

The present study is part of a larger-scale European Project and presents findings from a baseline measurement of cyberbullying intentions, empathy, moral disengagement, and social cognitions in a sample of Greek adolescent students from two randomly selected secondary schools in Athens and Thessaloniki, the two largest cities in Greece (totalling approx. 70% of the Greek population). Overall, 355 out of 500 (71% response rate) questionnaires were returned. The age of participants ranged between 13 and 17 years ($M = 14.7, SD = 1.20$), and 55.5% were females. Permission to conduct the study and ethics approval was obtained from the Ministry of Education, and informed consent for the participation in the study was granted by the respective school authorities in Greece.
Measures

A structured questionnaire was developed for the purposes of the study, including measures of demographics (age and gender), awareness and reporting of cyberbullying incidents, empathy, moral disengagement, attitudes, social norms and prototypes, self-efficacy beliefs, anticipated regret, and behavioural expectations. It is noteworthy, that the definition of cyberbullying given by Slonje and Smith (2008) was included in the first page of the questionnaire and participants were requested to complete the survey with this definition in mind.

Regarding age, respondents were asked to write down the year of their birth, which was then deducted from the year of survey completion (i.e., 2010) to generate a chronological age score. Gender was assessed with a single question (what is your gender) followed by two response options (1 = male, 2 = female). Awareness of cyberbullying was assessed with a single item asking students to report if they had heard or witnessed cyberbullying against others, and if they had been the victims of cyberbullying themselves, and responses were given on a yes/no format. The participants who admitted cyberbullying awareness, were further prompted to state if they reported (Cyberbullying referral) the incident (yes/no), and to whom they reported (open ended).

Empathy

Empathy was assessed with Jolliffe and Farrington’s (2006) Basic Empathy Scale (BES). This scale includes a total of twenty items, with nine items reflecting the cognitive empathy facet (e.g., ‘I can understand my friend’s happiness when she/he does well at something’, ‘I find it hard to know when my friends are frightened’), and eleven items reflecting affective empathy (e.g., ‘My friend’s emotions don’t affect me...’).
much’, ‘I get caught up in other people’s feelings easily’). After reverse scoring eight items, all cognitive and all affective items were summed to respectively produce the cognitive empathy and affective empathy scores. Responses were given on standard 5-point Likert type scale (1 = strongly disagree, 5 = strongly agree), and higher scores indicated higher levels of empathy on each facet. The internal consistency reliability scores were at acceptable levels for both cognitive (Cronbach’s $\alpha = .65$) and affective empathy (Cronbach’s $\alpha = .74$) facets.

**Moral disengagement**

Moral disengagement was assessed with the 24-item respective measurement by Bandura et al. (1996), which reflected 6 mechanisms of moral disengagement: moral justification (e.g., ‘It is alright to fight to protect your friends’), advantageous comparison (e.g., ‘Stealing some money is not too serious compared to those who steal a lot of money’), displacement of responsibility (e.g., ‘If kids are living under bad conditions they cannot be blamed for behaving aggressively’), diffusion of responsibility (e.g., ‘A kid in a gang should not be blamed for the trouble the gang causes’), distorting consequences (e.g., ‘It is okay to tell small lies because they don’t really do any harm’), and attribution of blame (e.g., ‘If kids fight and misbehave in school it is their teacher’s fault’). Each mechanism was assessed with the mean of four items, scored on a continuous 3-point scale (from 1 = agree to 3 = disagree), and higher scores reflected lower levels of moral disengagement. Based on the recommendations by Bandura et al. (1996), we summed the responses to generate a total score of moral disengagement. Accordingly, the internal consistency reliability for the 24-item version was acceptable (Cronbach’s $\alpha = .71$).
**Attitudes**

Attitudes to engage in cyberbullying were assessed with the stem proposition ‘To me, cyberbullying is...’ followed by four items (harmless/harmful, immoral/moral, good/bad, wise thing to do/stupid thing to do) scored on a 7-point continuous scale. A mean score was computed and higher scores reflected more negative attitudes towards cyberbullying (Cronbach’s α = .82).

**Social norms**

Norms were assessed with four distinct items reflecting informational influence (also termed ‘descriptive norms’) on cyberbullying. Specifically, the first item (classmate norms) asked participants to estimate how many of their classmates engage in cyberbullying behaviour (responses ranged from 1 = nobody to 5 = almost all of them); the second item assessed cyberbullying behaviour among the five closest friends (‘close friend norms’, responses ranged from 0 = nobody, to 5 = all five of them); the third item assessed perceived prevalence of cyberbullying among same-age peers (perceived prevalence norms) in Greece (i.e., ‘Out of 100%, how many people your age in Greece do you think engage or have engaged in cyberbullying?’ responses given in an open-ended format); and the fourth item asked participants whether they had witnessed or heard of other same-aged peers engaging in cyberbullying (‘peer norms’, responses ranged from 1 = never to 5 = very often).

**Prototypes**

Following the recommendations by Gibbons et al. (1998), a definition of prototypes was given, and students were asked to evaluate the prototype of a typical same-age adolescent who engages in cyberbullying. Prototype favourability was
assessed with 12 items reflecting both positive (e.g., smart, popular, cool, independent) and negative attributes (e.g., confused, careless, immature, dull), rated along a continuous 7-point scale (1 = not at all, 7 = very much). A mean score was calculated for each prototype facet, and internal consistency scores were satisfactory for both positive (Cronbach’s $\alpha = .66$) and negative prototype attributes (Cronbach’s $\alpha = .61$). Also, prototype similarity (i.e., perceived similarity with the cyberbullying prototype) was assessed with a single question ‘In general, how similar do you think you are to same age peers who engage in cyberbullying behaviour?’ scored on a 7-point continuous scale (from 1 = not at all, to 7 = very much).

**Situational self-efficacy**

The situational self-efficacy measure was adopted by Lazuras, Eiser, and Rodafinos (2009). The stem proposition ‘I will be tempted to engage in cyberbullying when...’ was followed by four different response options respectively assessing four distinct situations (i.e., ‘I am with other friends who do so’, ‘others laugh at me for not doing it’, ‘I feel that most of my friends engage in cyberbullying’, and ‘my friends ask me to do so’). Responses were recorded on a 5-point scale from 1 = definitely not to 5 = definitely yes. A mean score was generated and higher scores reflected less efficacy to resist (or stronger temptation to conform to) social influences (Cronbach’s $\alpha = .80$).

**Anticipated regret**

The stem proposition ‘If I hurt or cause problems to someone by engaging in cyberbullying, I would...’ was followed by four items (not regret it at all/definitely regret it; not feel disappointed with myself/feel disappointed with myself; not feel bad at all/feel very bad; not feel worried/feel very worried) scored along a 7-point
continuous scale, with higher scores reflecting more anticipated regret. A mean score was computed and the internal consistency reliability of the measure was high (Cronbach’s $\alpha = .89$).

*Expectations to engage in cyberbullying*

Behavioural expectations for cyberbullying were assessed with the mean of three items reflecting the likelihood/expectation to engage in cyberbullying in the next two months. The responses were recorded on a 7-point continuous scale, from $1 =$ *definitely not* to $7 =$ *definitely yes*, and higher scores reflected a greater expectation to engage in cyberbullying (Cronbach’s $\alpha = .84$).

**Procedure**

Following approval from the relevant school authorities, a group of researchers visited the selected school units, explained the purposes of the research to students, informed students about anonymity, confidentiality and their right to withdraw from the study at any point without any foreseeable consequences, and handed out the surveys during regular teaching hours. In most cases the teacher was absent, and researchers assisted students in case they had questions about survey completion. Students returned the completed questionnaires to the researchers, and survey completion lasted approximately 15 minutes.

**Results**

Table 1 presents the intercorrelations, means and standard deviations scores, and, where appropriate, the internal consistency reliability scores for the measures used in the study.
Experiencing and reporting cyberbullying

While 32.4% students reported they had either witnessed or personally experienced cyberbullying (victimized), only 12.5% reported the incident to someone. Those who reported the cyberbullying incident preferred to do so to their friends (44.7%), parents and siblings (44.7%), and to a lesser extent to official authorities, such as the police (10.5%). There were no gender differences in either experiencing/witnessing or reporting cyberbullying.

Direct effects on expectation to engage in cyberbullying

A hierarchical linear regression was used to assess the direct effects of age, gender, moral disengagement, empathy, and social cognitions (attitudes, norms, prototype favourability and similarity, anticipated regret and self-efficacy) on cyberbullying expectations. The analysis was completed in two steps and an overall significant model emerged predicting (Adj $R^2$) 54.9% of the variance ($F (16, 284) = 22.6, p < .0001$) – a large multivariate effect size according to Cohen (1992). Tolerance levels were high (> .508), thus showing that multicollinearity was not an issue in the analysis.

In the first step of the analysis we assessed the effects of age, gender, empathy facets, and moral disengagement. Moral disengagement ($\beta = -.360, p < .0001$) and affective empathy ($\beta = -.243, p < .0001$) significantly predicted cyberbullying expectations. Adding social cognitions in the second step of the analysis reduced the effects of moral disengagement, and turned the effect of affective empathy non-significant, thus suggesting a mediation effect. The significant predictors of expectations for cyberbullying in the final step of the analysis included moral disengagement ($\beta = -.173, p < .0001$), prototype similarity ($\beta = .446, p < .0001$),
perceived prevalence of cyberbullying among classmates or ‘classmate norms’ ($\beta = .101, p = .04$), frequency of witnessing or being aware about cyberbullying incidents committed by same age peers or ‘peer norms’ ($\beta = .097, p = .04$), and situational self-efficacy ($\beta = .154, p = .003$). The findings from the regression analysis are summarized in Table 2.

**Analysis of indirect effects**

Multiple mediation analysis was used to assess the indirect effects of affective empathy and moral disengagement on cyberbullying expectations. According to Preacher and Hayes (2008), 95% confidence intervals and bootstrapping with 1000 resamples were used. The findings showed that the effect of affective empathy on expectations was mediated by prototype similarity ($z = -4.36, p < .0001$) and situational self-efficacy ($z = -3.89, p < .0001$), but not peer and classmate norms. Accordingly, the effect of moral disengagement was mediated by prototype similarity ($z = -4.30, p < .0001$), situational self-efficacy ($z = -3.55, p < .0001$), and classmate norms ($z = -2.22, p = .02$).

**Discussion**

The present study set out to assess an integrated theory-driven process-model of cyberbullying incorporating individual traits (empathy), self-regulatory cognitive processes (moral disengagement), and social cognitions related to cyberbullying. The findings partially supported the hypothesis about the direct effects of social cognitions on intentions. Specifically, only social norms (peer and classmate norms), prototype similarity and situational self-efficacy predicted cyberbullying intentions. Variables with well-established effects on intention-formation, such as attitudes, anticipated regret, and prototype favourability did not exert a significant effect at all. This is in
contrast with the basic tenets of theories like the TPB (Ajzen, 1991) and the P/W model (Gibbons et al., 1998), and shows that, in the context of cyberbullying, intentionality tends to be driven more by descriptive norms, perceived similarity to the prototype, and efficacy to resist coercive and normative pressure than by self-centred beliefs, such as personal attitudes and anticipated regret. Thus, interventions to tackle cyberbullying behaviour could benefit by targeting normative pressures, as well as coping skills (e.g., refusal efficacy) and methods to resist social influences.

Additionally, according to our expectations moral disengagement directly predicted cyberbullying intentions, even after controlling for social cognitions and empathy. This is in accordance with Bandura et al. (1996) who argued that moral disengagement leads to aggression proneness, and with past research demonstrating positive relationships between moral justification mechanisms and cyberbullying (Pornari & Wood, 2010). In terms of a causal mechanism the findings from the mediation analysis indicated that moral disengagement may underlie a normative process not captured in previous cyberbullying studies, whereby potential aggressors perceive cyberbullying as more prevalent in specific reference groups (e.g., classmates), view themselves as more similar to potential cyberbullying perpetrators, and believe they can hardly resist endorsing cyberbullying acts under normative and situational pressures. This further extends our understanding of moral disengagement, by suggesting that this mechanism is not only relevant to misplacing responsibility, and misattributing blame or consequences, but is likely to underlie a more general normative belief-formation process that justifies the enactment of harmful behaviours. In short, individuals who morally disengage seem also more prone to situational influences for cyberbullying behaviour.
Past research (e.g., Ang & Goh, 2010; Steffgen et al., 2011) has shown that empathy plays an important role in cyberbullying, as adolescents engaging in cyberbullying behaviour tend to score lower in different empathy measures. Nevertheless, in line with the mediating hypothesis of the TPB (e.g., Conner & Armitage, 1998; Rhodes & Courneya, 2003), the present study showed that the effect of empathy in cyberbullying intentions turned non-significant when other predictors, such as normative beliefs and self-efficacy, were taken into account. This should not be taken as evidence against the importance of empathy, but rather as a prompt to reconsider the role of empathy in cyberbullying research and study its interactions with more proximal predictors of intentions and behaviour. Specifically, it appears that individuals with lower affective empathy scores are more likely to develop maladaptive normative and self-efficacy beliefs, which in turn, predict proclivity for cyberbullying behaviour.

To conclude, this is one of the first empirical studies to assess an integrated theoretical model of cyberbullying behaviour accounting for both distal and proximal risk factors. Our findings set the basis for future educational interventions and preventive strategies against cyberbullying by highlighting the importance of ‘moral training’, targeting maladaptive normative beliefs, and building self-efficacy skills.
References


inferior frontal gyrus versus ventromedial prefrontal lesions. *Brain, 132,* 617-627.


Footnote

The term cyberbullying used in this manuscript is based on Olweus (1993) definition of bullying, and is therefore defined as intentional and repeated form of aggression from individuals or groups of people against a victim or a group of victims utilizing contemporary ICTs (see also Dunkels, Franberg, & Hallgren, 2011; Slonje & Smith, 2008).
Acknowledgment

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The authors have no conflict of interest to declare.
Table 1

*Intercorrelations, Means, Standard Deviation, and Internal Consistency Reliability Scores of the Measures Used in the Study*

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<td>6. Perceived norm</td>
<td></td>
<td>- .41*</td>
<td>.13*</td>
<td>- .09</td>
<td>.22*</td>
<td>- .10</td>
<td>- .09</td>
<td>.19*</td>
<td>.26*</td>
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<td>7. Peer norms</td>
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<td>- .07</td>
<td>- .10</td>
<td>.17*</td>
<td>- .13*</td>
<td>- .19*</td>
<td>.29*</td>
<td>.31*</td>
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<td>8. PF (pos.)</td>
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<td>- - .35*</td>
<td>.26*</td>
<td>- .25*</td>
<td>- .23*</td>
<td>.34*</td>
<td>.26*</td>
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<td>9. PF (neg.)</td>
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<td>- - .31*</td>
<td>.36*</td>
<td>.39*</td>
<td>- .21*</td>
<td>- .27*</td>
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<td>10. PS</td>
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<td>- - .32*</td>
<td>- .49*</td>
<td>.43*</td>
<td>.64*</td>
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<td>11. Attitudes</td>
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<td>- .56*</td>
<td>- .42*</td>
<td>- .37*</td>
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<td>12. AR</td>
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<td>-.45*</td>
<td>-.48*</td>
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<td>13. Self-efficacy</td>
<td>-</td>
<td>.51*</td>
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<td>14. CB expectation</td>
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<th>1.42</th>
<th>33.62</th>
<th>2.50</th>
<th>2.95</th>
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<td>Cronbach’s α</td>
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<td>0.66</td>
<td>0.61</td>
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*Note. *p < .05; MD = Moral Disengagement; BES = Basic Empathy Scale; PF = Prototype Favorability; PS = Prototype Similarity; AR = Anticipated Regret; CB = Cyberbullying.
Table 2

Psychosocial Predictors of Expectations to Engage in Cyberbullying  \( (N = 355) \)

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors</th>
<th>B</th>
<th>95% CI (B)</th>
<th>( \beta )</th>
<th>Adj( R^2 )</th>
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<tr>
<td>1</td>
<td>Age</td>
<td>-0.016</td>
<td>-0.146 to -0.114</td>
<td>-0.013</td>
<td>0.203</td>
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<tr>
<td></td>
<td>Gender</td>
<td>-0.156</td>
<td>-0.510 to 0.197</td>
<td>-0.052</td>
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<tr>
<td></td>
<td>Moral disengagement</td>
<td>-0.078</td>
<td>-0.102 to -0.054</td>
<td>-0.360***</td>
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<tr>
<td></td>
<td>BES affective</td>
<td>-0.057</td>
<td>-0.085 to -0.028</td>
<td>-0.243***</td>
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<tr>
<td></td>
<td>BES cognitive</td>
<td>0.033</td>
<td>-0.003 to 0.069</td>
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<td>2</td>
<td>Age</td>
<td>-0.227</td>
<td>-0.826 to 0.373</td>
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<td>0.549</td>
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<td>Gender</td>
<td>-0.040</td>
<td>-0.189 to 0.110</td>
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<td>Moral disengagement</td>
<td>0.591</td>
<td>0.399 to 0.783</td>
<td>-0.173***</td>
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<td>BES affective</td>
<td>0.035</td>
<td>-0.036 to 0.106</td>
<td>-0.087</td>
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<td>BES cognitive</td>
<td>0.506</td>
<td>0.349 to 0.663</td>
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<td>Classmate norms</td>
<td>0.170</td>
<td>0.007 to 0.333</td>
<td>0.101*</td>
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<td>Close friend norms</td>
<td>-0.051</td>
<td>-0.198 to 0.097</td>
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<td>Perceived prevalence</td>
<td>0.002</td>
<td>-0.005 to 0.008</td>
<td>0.025</td>
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<td>Peer norms</td>
<td>0.158</td>
<td>0.005 to 0.311</td>
<td>0.097*</td>
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<td>Prototype favorability (pos.)</td>
<td>0.085</td>
<td>-0.035 to 0.204</td>
<td>0.064</td>
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<td>Prototype favorability (neg.)</td>
<td>0.076</td>
<td>-0.051 to 0.202</td>
<td>0.056</td>
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<td>Prototype similarity</td>
<td>0.521</td>
<td>0.404 to 0.639</td>
<td>0.446***</td>
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<tr>
<td>Attitudes</td>
<td>-0.074</td>
<td>-0.203 to 0.056</td>
<td>-0.059</td>
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<tr>
<td>Anticipated regret</td>
<td>-0.061</td>
<td>-0.172 to 0.051</td>
<td>-0.060</td>
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<tr>
<td>Self-efficacy</td>
<td>0.301</td>
<td>0.100 to 0.502</td>
<td>0.154**</td>
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</tbody>
</table>

*Note. *p* < .05; **p* < .001; BES = Basic Empathy Scale.*