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Defending victims of cyberbullying: The role of self-efficacy and moral disengagement[☆]

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ABSTRACT

Cyberbullying is a significant problem worldwide that affects adolescents' social relations, academic achievement, and mental health. As this form of bullying is typically viewed by a large audience it is important to understand the role of observers as they may hold a key for reducing bullying. The aim of this study was to investigate the role of the socio-cognitive factors of defending self-efficacy (i.e., belief in one's capability to defend) and moral disengagement (i.e., justifications for aggressive behavior) associated with general cyber defending behavior and cyber defending response types: constructive and aggressive. Participants were 540 male and female students of diverse racial identity between the ages of 11 and 15 years who completed a questionnaire comprising multiple measures. Regression analyses revealed that at low levels of defending self-efficacy, moral disengagement was unrelated to general cyber defending behavior. However, at high levels of defending self-efficacy, moral disengagement was positively associated with general cyber defending. Further regression analyses revealed that the results for constructive cyber defending were the inverse of those obtained for aggressive defending. Defending self-efficacy was positively associated with constructive defending and negatively associated with aggressive defending. Moral disengagement was negatively associated with constructive defending and positively associated with aggressive defending. These results address the perplexing issue of why moral disengagement has been related to defending in some studies and not in others. As with most measures of defending, the general cyber defending measure confounds constructive and aggressive defending.

1. Introduction

The prevalence of cyberbullying has increased as youth have gained increasing access to the internet (Kowalski, Limber, & McCord, 2018). Although cyberbullying is similar to traditional or offline bullying in that it involves intentional and repeated aggression directed towards a victim less able to defend themselves (Olweus, 1993), it differs from traditional bullying in that it is conducted using electronic means (Smith et al., 2008). As with traditional bullying, cyberbullying causes significant psychological harm (Cassidy, Faucher, & Jackson, 2013). These harmful outcomes include anxiety, depression, suicide ideation, low levels of self-esteem, and poor academic achievement. Increasing concern about these negative impacts on young people has led to the development of intervention programs to reduce the extent of cyberbullying. Although some programs have shown modest reductions in cyberbullying (e.g., Cross et al., 2015; DeSmet et al., 2018), there is significant room for improvement.

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One potential avenue for increasing the efficacy of cyberbullying intervention programs is to actively involve bystanders to support the victim and help stop the bullying. Indeed, substantial research on traditional bullying has shown that active bystanders or defenders can play a crucial role in reducing bullying (Craig, Pepler, & Atlas, 2000; Hawkins, Pepler, & Craig, 2001; Salmivalli, 2010). However, there has been less research focusing on defenders in cyber space. Although cyberbullying is conceived as a group process and the same roles (bully, victim, reinforcer of the bully, assistant of the bully, defender of the victim, and outsider) have been identified in both the traditional and cyber contexts, they may function differently in the cyber context (Giumetti, McKibben, Hatfield, Schroeder, & Kowalski, 2012). Therefore, this study aimed to investigate this gap in knowledge about defenders in cyber space by examining factors associated with their role in this context.

In traditional bullying, defenders help the victim through comforting them, telling the teacher, and trying to stop the bullying by confronting the bully (Rock & Baird, 2012). In the cyber context, defending involves similar responses except that they occur online (e.g., comforting the victim by reassuring them, confronting the bully by threatening them). It could be expected that defenders may play an even more significant role in cyberbullying than in traditional bullying as there is the potential for hundreds of thousands of people to witness a bullying episode and intervene in the episode. In addition, it may be easier to assist the victim or confront the bully online rather than face-to-face which typically occurs with traditional bullying.

To further examine defending in cyberbullying episodes, researchers have begun to investigate factors associated with those who defend the victim from a social cognitive theory perspective (Allison & Bussey, 2016). The social cognitive theory takes account of the context of the behavior and personal factors related to the situation within a reciprocally interacting dynamic involving behavior, person, and situation (Bandura, 1986). From this perspective, emphasis is placed on motivational factors linking people's thoughts and actions, specifically, self-efficacy for defending and moral disengagement. The main aim of this study, therefore, was to examine the association of these socio-cognitive factors with defending in the cyber context.

1.1. Self-efficacy and cyber defending

Self-efficacy refers to the belief in one's ability to perform an activity in a specific context. These self-related beliefs have been investigated in many diverse areas of human activity including cognitive, health, athletic, and occupational functioning. According to Bandura (1997), those with high levels of self-efficacy in a given domain are likely to approach impending situations in that domain in a prosocial and anxiety-free manner, while those low in self-efficacy are more likely to approach such situations in maladaptive and aggressive ways. Self-efficacy beliefs differ from other more generalized beliefs such as self-esteem in that the focus is on self-judgment of one's capabilities in specific contexts. In the current study, the focus is on defending self-efficacy which refers to a student's judgment of his or her ability to intervene in a bullying episode and help the victim (Barchia & Bussey, 2011b; Thornberg, Wänström, Hong, & Espelage, 2017).

1.2. Moral disengagement and cyber defending

Apart from students' confidence to intervene in cyberbullying episodes, it is important from the social cognitive theory perspective to consider how students view bullying episodes as many students justify such episodes as acceptable by enlisting moral disengagement mechanisms. Moral disengagement is the self-regulatory process which enables individuals to behave contrary to their moral standards without feeling any remorse or guilt (Bandura, 2002, 2016). In the bullying context, the enlistment of moral disengagement processes enables those who censure bullying in general to bully others in certain situations by selectively disengaging their moral standards so that they feel no remorse (Bandura, 2002, 2016). Although there has been substantial research showing that both traditional and cyber bullies are more prone than non-bullies to invoke moral disengagement strategies (e.g., Barchia & Bussey, 2011a; Bussey, Fitzpatrick, & Raman, 2015; Gini, Pozzoli, & Bussey, 2014), there has been less focus on the use of these strategies by others involved in the bullying episode. Emerging research, however, shows that the use of moral disengagement strategies in bullying situations is not limited to the perpetrator. For example, Obermann (2011) reported that witnesses who do not intervene in bullying episodes report high levels of moral disengagement.

Extending moral disengagement to defending, it has generally been assumed that defenders would be less prone than others in the bullying episode, particularly bullies, to utilize moral disengagement strategies. The basis of this assumption is that defending is a prosocial activity mainly involving helping another (Pöyhönen, Juvonen, & Salmivalli, 2010) and prosocial behavior has been negatively related to moral disengagement (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Consistent with this conceptualization, a number of studies (e.g., Doramajian & Bukowski, 2015; Gini, 2006; Haddock & Jimerson, 2017; Thornberg & Jungert, 2013) including a recent meta-analysis (Killer, Bussey, Hawes, & Hunt, 2019) have confirmed a negative association between defending and moral disengagement. That is, more frequent defending was associated with a lower propensity to enlist moral disengagement strategies. However, some studies have found no association between moral disengagement and defending (e.g., Barchia & Bussey, 2011b), and there is emerging evidence that for some groups and in some situations the association between moral disengagement and defending is even positive (Doramajian & Bukowski, 2015). In a recent study on cyberbullying, Allison and Bussey (2017) showed that moral disengagement was not uniquely associated with defending; however, an interaction between individual and collective moral disengagement at the class level revealed that individual moral disengagement was positively associated with defending when other students in the class were perceived as highly morally disengaged.

Although a positive association between moral disengagement and defending may seem puzzling, it is consistent with recent evidence suggesting that defending is a multifaceted construct. That is, defending involves both positive and negative responses to bullying behaviors and cannot be solely characterized as a positive response directed to the victim. In a qualitative study in which

adolescents were asked to describe how they defended victims in the cyber context, most respondents reported that they helped the victim by consoling them, standing up to the bully, or retaliating against the bully. Many of these latter responses were aggressive as they involved saying mean things about the bully and threatening the bully (Bussey & Fitzpatrick, 2016). Consistent with a multifaceted approach to defending involving both positive and negative responses, Reijntjes et al. (2016) further identified defenders who attacked the bully (bully-oriented defending) and those who comforted the victim (victim-oriented defending).

So, helping the victim can include positive responses directed at the victim and negative responses against the bully to protect the victim. In the former instance, defending involves constructive behaviors that include helping the victim by consoling them or notifying someone in authority. In the latter situation, the defender responds aggressively to the bully with the aim of assisting the victim. This is quite different from a bystander who behaves aggressively and joins the bully in the bullying episode. Both aggressive and constructive defending responses aim to assist the victim and are prosocially motivated. Constructive defending responses, however, are more problem-solving focused whereas aggressive defending responses are likely to escalate the bullying (Luo & Bussey, 2019). Both defending responses, constructive and aggressive, were examined in this study.

1.3. Cyber defending measures

In most previous studies, both offline and online defending measures have assessed consoling the victim in some items (e.g., “I try to help or comfort classmates who are isolated or excluded from the group,” Pozzoli & Gini, 2010, p. 818) and confronting the bully in others (e.g., “If someone teases or threatens a classmate, I try to stop him/her,” Pozzoli & Gini, 2010, p. 818; “I stood up to the youth who was doing it,” Lambe, Hudson, Craig, & Pepler, 2017, p.114). In such studies, the defending measure involves responses that could be considered as constructive or aggressive. Therefore, the association between defending and moral disengagement may depend on the composition of different types of defender responses in the measure and also depend on participants' interpretation of ‘defending’ as to whether it involves constructive and/or aggressive responding. Thus, in this study, to accommodate the range of findings linking moral disengagement and defending, a broader approach to defending was taken that explicitly assessed the two types of defending that have been identified above, that is, positive (constructive) and negative (aggressive) defending. In addition, the frequency of cyber defending behavior, with the type of defending response unspecified, was measured. This measure focuses on the situations in which defending occurs rather than the form it takes (e.g., “I tried to help after someone had posted or sent humiliating images of them”). In this study, this measure is referred to as general cyber defending.

1.4. The present study

To recap, the main aim of this study was to advance understanding of defending in the cyber context by investigating the association between the socio-cognitive factors of defending self-efficacy and moral disengagement for different aspects of cyber defending. In addition, to resolve the conflicting findings linking moral disengagement and cyber defending, a multifaceted approach to defending was adopted. General defending behavior was measured by respondents endorsing the extent to which they helped victims who were cyberbullied without reference to the type of defending they enacted. In contrast, the defending response type measure specifically assessed participants' constructive and aggressive defending.

To address these issues, students completed a questionnaire in which their defending self-efficacy, moral disengagement, general defending, and defending response types were assessed. For general defending, based on the established positive association between defending self-efficacy and defending in traditional bullying (Barchia & Bussey, 2011b) as well as Bandura's (1997) research showing that self-efficacy is more strongly related to performance in the domain in which it is measured, it was hypothesized that cyber defending self-efficacy would be positively associated with general cyber defending. It was further hypothesized that as defending is mainly viewed as a prosocial behavior (Lambe, Cioppa, Hong, & Craig, 2019) and based on Bandura et al.'s (1996) classic study in which moral disengagement was negatively related to prosocial behavior, it was expected that general cyber defending would be negatively associated with moral disengagement. An interaction between defending self-efficacy and moral disengagement was also hypothesized. The negative association between moral disengagement and defending was expected to be amplified the more that students believed they were able to defend the victim.

For constructive cyber defending, defending self-efficacy and moral disengagement were each expected to be associated with constructive defending in the same way they were predicted to relate to general defending. Constructive defending like general defending is performed to help the victim, however, the defending behaviors are explicitly positive (e.g., “How often did you respond online to a kid who was being bullied by encouraging the kid to report being picked on?”). It was therefore predicted that defending self-efficacy would be positively related to constructive defending and that moral disengagement would be negatively associated with it. That is, the more students believed they were able to defend the victim, the more frequently they were expected to engage in constructive defending. Further, the weaker students' propensity to enlist moral disengagement strategies, the more frequently they were expected to engage in constructive defending. The interaction between defending self-efficacy and moral disengagement was expected to reveal that when students believed they were more efficacious at defending the victim, the negative association between moral disengagement and constructive defending would be stronger.

For aggressive cyber defending, as for general and constructive defending, it was predicted that participants who were more confident about their ability to defend the victim would engage in higher levels of aggressive defending. However, in contrast to general and constructive defending, moral disengagement was expected to be positively associated with aggressive defending. That is, the more students justified aggressive behavior, the more frequently they were expected to respond aggressively when defending the victim. In addition, the interaction between defending self-efficacy and moral disengagement was expected to show that the predicted positive association between moral disengagement and defending self-efficacy would be stronger at higher than at lower

levels of defending self-efficacy.

Participants in this study were adolescents as cyberbullying peaks at this stage of development (Rice et al., 2015). As previous research has found that younger students were more likely to defend than older students (Datta, Cornell, & Huang, 2016), it was expected that younger adolescents (Grade 7) would engage in more frequent cyber defending (general, constructive, and aggressive) than their older counterparts (Grade 9). Gender differences were also investigated as previous research has reported that females engaged in more defending than males (Gini, Pozzoli, & Bussey, 2015; Trach, Hymel, Waterhouse, & Neale, 2010). In this study, females were expected to engage in more general and constructive defending than males, whereas males were expected to engage in more aggressive defending than females. Males were also expected to report higher proneness to moral disengagement than females.

2. Method

2.1. Participants

Five-hundred and forty students in Grades 7 and 9 from 14 non-government secondary schools in New South Wales, Australia, participated in this study. In Grade 7 there were 344 students ($M_{\text{age}} = 12.65$ years, $SD = 0.42$; $n = 194$ females,) and in Grade 9 there were 196 students ($M_{\text{age}} = 14.63$ years, $SD = 0.45$; $n = 110$ females,). The ethnic composition of the sample was 67.2% Anglo/Celtic, 15.8% European, and 6.7% East/South East Asian with the remainder from other ethnic groups. Participants came from primarily middle to upper class socioeconomic backgrounds (Australian Curriculum Assessment and Reporting Authority, 2016). Active consent was obtained from the students' parents for their participation in this study. Verbal assent was also obtained from each student participant prior to completing the questionnaire. Approval to conduct this study was obtained from the host university's ethics committee.

2.2. Measures

This study was part of a larger research project on cyberbullying. The measures that were used in this study included the bullying-related behavior scales of cyberbullying, cyber victimization, and general cyber defending. In addition, cyber defending response types (constructive and aggressive), moral disengagement, and cyber defending self-efficacy were measured.

2.2.1. Cyber defending self-efficacy

Cyber defending self-efficacy was measured using a modified version of Barchia and Bussey (2011b) Defender Self-Efficacy scale. The items in this scale were modified to contextualize them to cyberbullying episodes (e.g., "Provide comfort to the kid who is being cyberbullied"). On a 7-point rating scale, participants indicated how well (1 = not well at all to 7 = very well) they could enact nine specific defending behaviors (e.g., "Talk to a parent about the situation"). Total scores were calculated by summing individual scores, with higher scores indicating higher levels of defending self-efficacy. In the Barchia and Bussey (2011b) study, the scale showed good internal reliability ($\alpha = 0.87$). In the current study, the modified scale achieved a Cronbach's alpha of 0.79.

2.2.2. Moral disengagement

Moral disengagement was assessed with the scale used by Allison and Bussey (2017). This scale was developed by Bussey and Fitzpatrick (2014) by rewording items from Bandura et al.'s (1996) Mechanisms of Moral Disengagement scale to reflect the cyber context. It consisted of 16 items, with two items representing each of the eight moral disengagement mechanisms. An example item measuring the advantageous comparison mechanism was "It's okay to email a mean message to another kid because posting it on Facebook for everyone to see is worse". Students rated their degree of agreement with each statement on a 5-point rating scale (1 = strongly disagree to 5 = strongly agree). A total scale score was obtained by summing individual items, with higher scores indicating greater individual moral disengagement. In Allison and Bussey's (2017) study, Cronbach's alpha was 0.91. In the present study, Cronbach's alpha for this scale was 0.90.

2.2.3. Cyberbullying and cyber victimization

Gómez-Guadix, Villa-George, and Calvete's (2014) Cyberbullying Questionnaire Revised Scale was used to measure cyberbullying and cyber victimization. Cyberbullying was assessed by asking participants "How often in the last school terms have you performed the following behavior?" They were presented with a 14-item scale depicting cyberbullying behaviors (e.g., "posting or sending humiliating images of another kid") and they rated each item on a 6-point rating scale (1 = it hasn't happened at all to 6 = many times a week). To measure cyber victimization participants were asked "How often in the last school term have the following behaviors happened to you?". They were presented with a nine-item scale relating to cyber victimization (e.g., "other people have posted humiliating images of me on the Internet"). Total scores were calculated by summing all items in each subscale, with higher scores indicating more frequent experiences of cyberbullying and cyber victimization. Previously reported Cronbach's alphas were 0.79 and 0.74 for the perpetration and victimization scales, respectively (Allison & Bussey, 2017). In this study, the cyberbullying scale achieved excellent reliability ($\alpha = 0.97$) and the cyber victimization scale achieved good reliability ($\alpha = 0.86$).

2.2.4. Cyber defending

The scale by Allison and Bussey (2017) was used to measure frequency of general defending behavior. This was based on the revised cyberbullying perpetration questionnaire (CBQ-R) by Gómez-Guadix et al. (2014), but with items written from the

Table 1
Factor loadings for the aggressive and constructive defending scale.

Factors and loaded items for defending	Factor loadings	
	1	2
Constructive defending		
1. By telling the bully that picking on the other kid was mean and wrong	0.81	
2. By encouraging the bully to say sorry to the kid they picked on	0.84	
3. By telling the bully to stop picking on other kids	0.87	
4. By encouraging the kid to report being picked on	0.84	
5. By telling the kid to ignore the mean things that were said	0.79	
6. By comforting the kid and telling them that it is not their fault that they were picked on	0.82	
Aggressive defending		
1. By saying mean things about the bully		0.81
2. By making threats to the bully		0.83
3. By telling the bully to “back off”	0.54	0.46

perspective of the defender rather than the perpetrator. Participants were asked, “How often in the last school term did you try to help other kids after the following things happened to them while on the Internet, or on a smartphone, tablet or computer?”, followed by 14 questions regarding general defending behavior (e.g., “I tried to help after someone had posted or sent humiliating images of them”). Participants responded on a six-point rating scale ranging from 1 (*it hasn't happened at all*) to 6 (*many times a week*). In the study by Allison and Bussey (2017), this scale had a Cronbach's alpha of 0.95 and 0.92 in the current study.

2.2.5. Constructive and aggressive cyber defending responses

Xu, Bussey, and Fitzpatrick's (2018) Cyberbullying Intervening Behavior Scale was adapted by eliminating the public versus private distinction of defending to only measure the frequency with which participants employed constructive and aggressive defending strategies. Prompted by the phrase, “Last term, how often did you respond online when a kid was being bullied?”, participants indicated on a 5-point rating scale (1 = *never* to 5 = *always*) how frequently in the last term they tried to help victims of cyberbullying (6 constructive defending items e.g., “by encouraging the bully to say sorry to the kid they picked on”) and how frequently they acted aggressively towards the perpetrator (3 aggressive defending items e.g., “by making threats to the bully”). A principal components analysis with Oblimin rotation revealed two factors, one factor for the constructive items (6 items) and another factor for the aggressive items (3 items). One aggressive defending item was removed as it cross-loaded on both factors. Remaining items loaded onto their respective factors with loadings equal to or above 0.70, which accounted for 69.1% of variance. Items and factor loadings are shown in Table 1. The constructive defending subscale achieved excellent reliability (Cronbach $\alpha = 0.91$), while the aggressive defending subscale achieved a lower level of reliability (Spearman-Brown coefficient of 0.56). This level of unreliability is not unexpected with a two-item measure. Additional items are likely to increase the reliability of future measures of aggressive defending.

2.3. Missing data

Small amounts of participant data were missing at the item level (range 0–8.3%). A single shot expectation-maximization (EM) algorithm in SPSS was used to manage missing data. Imputation was based on individual items being used as predictors. The EM procedure has been shown to be the preferred method when imputing data that is not completely missing at random, compared to list-wise deletion, pair-wise deletion and means substitution (Allison, 2002; Enders, 2001; Schafer & Graham, 2002).

2.4. Procedure

The project was approved by the Ethics Committee of the authors' university. Independent, non-Government, schools in New South Wales were identified via an online database. Each school principal was contacted by the research team and 14 schools agreed to participate in the study. The questionnaire was completed in groups of approximately 20 students at school and was supervised by class teachers and at least one research assistant. The students completed the questionnaire under examination conditions which involved being seated at a distance from each other and being instructed not to talk during the session. On average, students completed the questionnaire in 45 min. The majority of participants completed the questionnaire through Qualtrics using an electronic device (i.e., laptop, desktop computer, or tablet). At some schools, however, students did not have access to an electronic device and they completed the questionnaire using a pencil and paper. Participants were assured their individual responses were anonymous and would not be seen by their parents, peers or teachers. All children were informed that there were no right or wrong answers. To ensure anonymity, each student was provided with a unique identification number, unique login code, and URL to access the questionnaire. The unique identification numbers were only given to students whose parents had provided consent.

After actively assenting to participate in the study, students were shown brief definitions of bullying and cyberbullying, adapted from Olweus (1996), to ensure uniform understanding of bullying and cyberbullying behavior. The scales comprising the questionnaire were ordered into two counterbalanced formats that separated similarly worded scales to avoid confusion. Researchers

randomly allocated participants to one of the two formats. Students were discouraged from talking about their responses with their peers and informed that if they wished to discuss their responses they could do so with the research team or request an appointment with a counselor by writing their name on the final page of the questionnaire and detaching it for submission to the researchers. No participant made such a request.

2.5. Data analytic strategy

Results are presented in three sections. First, the influence of grade and gender on all the major variables was examined using Analyses of Variance (ANOVAs). As grade and gender differences emerged from this analysis, they were controlled in the regression analyses. Second, correlational analyses between each of the dependent and independent variables are presented. The correlations among the study variables guided the regression analyses. Finally, three hierarchical regressions which examined the linkage between moral disengagement and defending self-efficacy and the interaction between these two variables with general cyber defending, constructive cyber defending, and aggressive cyber defending, respectively, are reported. As the two types of cyber defending types (constructive and aggressive) were correlated, aggressive defending was controlled when predicting to constructive defending and constructive defending was controlled when predicting to aggressive defending. This enabled an examination of the correlates of each type of defending independent of the other.

The assumption of normality was violated for all continuous variables, except for defending self-efficacy. Therefore, bootstrapping analyses were conducted to provide confidence intervals and bias-corrected p -values. Bootstrapping has been shown to provide robust results when the assumption of normality is violated and is preferred compared to other methods, such as transformations and relying on the robustness of F -tests and t -tests (Field & Wilcox, 2017). An overall alpha of 0.05 was used for all analyses.

3. Results

3.1. Grade and gender effects

Prior to examining grade and gender effects, analyses using the linear mixed model procedure in SPSS were conducted to examine the potential effect of clustering of responses within schools. The data presented in this study were nested (students within grades within schools). The random factor of school was not significant at $p < .05$ in the analyses conducted for each dependent variable: cyber perpetration (ICC = 0.02, $p = .22$), cyber victimization (ICC = 0.02, $p = .32$), general cyber defending (ICC = 0.04, $p = .11$), aggressive defending (ICC = 0.03, $p = .17$), constructive defending (ICC = 0.11, $p = .05$), defending self-efficacy (ICC = 0.02, $p = .30$), and moral disengagement (ICC = 0.08, $p = .07$). As there was no significant clustering effect of schools, this factor was not accounted for in subsequent analyses.

ANOVAs were conducted to investigate potential grade and gender effects for each of the measures: cyber perpetration, cyber victimization, moral disengagement, cyber defending self-efficacy, general cyber defending, constructive cyber defending and aggressive cyber defending. The estimated marginal means and standard errors for the study variables are presented in Table 2.

Results of the ANOVAs revealed grade main effects for constructive defending ($F(1,536) = 11.3, p = .001; \eta_p^2 = 0.02$), defending self-efficacy ($F(1,536) = 5.17, p = .023; \eta_p^2 = 0.01$), and moral disengagement ($F(1,536) = 5.09, p = .025; \eta_p^2 = 0.01$). Students in Grade 7 reported more constructive defending and higher defending self-efficacy than did students in Grade 9. In contrast, for moral disengagement, students in Grade 9 reported a higher proneness to enlist moral disengagement mechanisms than did Grade 7 students. Gender effects were obtained for cyber perpetration ($F(1,536) = 14.9, p < .01; \eta_p^2 = 0.03$), aggressive defending ($F(1,536) = 21.3, p < .01; \eta_p^2 = 0.04$), and moral disengagement ($F(1,536) = 33.8, p < .01; \eta_p^2 = 0.06$). Boys reported higher levels of cyber perpetration, aggressive defending, and moral disengagement than did girls. There were no grade by gender interactions for any of the variables: cyber perpetration ($F(1,536) = 0.18, p = .67$), cyber victimization ($F(1,536) = 0.20, p = .65$), general cyber defending ($F(1,536) = 0.85, p = .34$), aggressive cyber defending ($F(1,536) = 0.43, p = .51$), constructive cyber defending ($F(1,536) = 0.13, p = .26$), defending self-efficacy ($F(1,546) = 0.19, p = .28$), and moral disengagement ($F(1,536) = 0.03, p = .86$).

Table 2

Estimated marginal means and standard errors for all variables.

	Boys	Girls	F	Grade 7	Grade 9	F
Cyber perpetration	17.5 (0.48)	15.0 (0.42)	14.9**	16.3 (0.38)	16.1 (0.51)	0.11
Cyber victimization	11.8 (0.32)	11.5 (0.28)	0.49	11.6 (0.25)	11.7 (0.34)	0.05
Global defending	20.0 (0.55)	19.5 (0.48)	0.50	19.6 (0.44)	20.0 (0.58)	0.35
Aggressive defending	3.2 (0.09)	2.7 (0.08)	21.3**	2.8 (0.07)	3.0 (0.09)	2.82
Constructive defending	16.4 (0.48)	17.2 (0.43)	1.83	17.9 (0.39)	15.7 (0.52)	11.3**
Defending self-efficacy	35.7 (0.66)	36.6 (0.58)	1.11	37.2 (0.53)	35.2 (0.70)	5.17*
Moral disengagement	27.0 (0.65)	22.0 (0.57)	33.8**	23.5 (0.52)	25.5 (0.69)	5.09*

Note. Standard errors are in brackets. Degrees of freedom = 536.

* $p \leq .05$.

** $p \leq .01$.

Table 3
Partial Pearson correlations controlling for grade and gender.

Variables	1.	2.	3.	4.	5.	6.	7.
1. Cyber perpetration	–						
2. Cyber victimization	0.50**	–					
3. General cyber defending	0.32**	0.54**	–				
4. Aggressive defending	0.39**	0.33**	0.33**	–			
5. Constructive defending	0.07	0.23**	0.36**	0.29**	–		
6. Defending self-efficacy	0.02	–0.06	0.14**	–0.04	0.27**	–	
7. Moral disengagement	0.47**	0.35**	0.27**	0.35**	–0.03	–0.11**	–

** $p \leq .01$.

3.2. Correlations

Correlations were examined to assess the strength of the relationship among different types of cyber bullying involvement (cyberbullying, cyber victimization, cyber general defending), cyber defending response types (constructive, aggressive), defending self-efficacy, and moral disengagement. As the ANOVAs revealed age and gender differences for the bullying-related behaviors and social cognitive variables, these variables were controlled in the correlations presented in Table 3.

The cyber bullying-related behaviors were positively associated with each other which underscores other findings showing the fluidity of movement between bullying-related behaviors in the cyber context (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). That is, cyber perpetration, cyber victimization and general cyber defending were positively associated with each other. Aggressive defending was also positively associated with each of these three cyber-bullying related behaviors. In contrast, constructive defending was positively associated with cyber victimization, general cyber defending and aggressive cyber defending but not with cyber perpetration. In terms of the socio-cognitive variables, defending self-efficacy was only positively associated with general cyber defending and constructive defending. Moral disengagement, however, was positively associated with all variables except constructive cyber defending. It is noteworthy that constructive cyber defending was not associated with cyber perpetration. However, aggressive cyber defending was positively associated with cyber perpetration adding weight to the construct validity of the aggressive cyber defending measure. All significant relationships were correlated at $p \leq .001$, except for the association between defending self-efficacy and moral disengagement ($p = .009$).

3.3. Hierarchical regression analyses

Three separate hierarchical analyses were conducted to examine the relationship between defending self-efficacy and moral disengagement and the interaction between these two variables for general defending, constructive defending, and aggressive defending, respectively. For each of the three analyses a four-step model was conducted. Gender and grade were entered at step one as control variables due to the grade and gender differences established in the ANOVAs. Cyberbullying and cyber victimization were entered at step two as control variables as they were correlated with defending. In addition, at this step, when predicting to constructive defending, aggressive defending was added as a control variable and when predicting to aggressive defending constructive defending was added as a control variable. This addition was included as both forms of defending were derived from the same measure of defending type, although separate factors as shown by the factor analysis. At the third step, moral disengagement and defending self-efficacy, the main predictor variables, were entered. Finally, the interaction of these two predictor variables was entered at the fourth step. All continuous variables were centred prior to conducting the analyses (Aiken & West, 1991) and interaction terms were created from the centred variables.

3.3.1. General cyber defending

The overall model predicting to general defending was significant ($F(7,532) = 46.57, p \leq .001$). In the final model, cyber victimization, moral disengagement and defending self-efficacy beliefs were positively related to general defending (see Table 4). The positive relationship between defending self-efficacy and general defending was predicted. However, contrary to expectations, moral disengagement was positively rather than negatively associated with general defending. In addition, the interaction between moral disengagement and defending self-efficacy beliefs was also significant. This interaction is depicted in Fig. 1 and was examined using PROCESS. Simple slopes were computed at one standard deviation above the mean and one standard deviation below the mean. This analysis revealed that moral disengagement was positively associated with general defending at higher levels of defending self-efficacy ($B = 0.25, t = 5.99, p < .001$), but not at lower levels of defending self-efficacy ($B = -0.02, t = -0.64, p = .52$).

The prediction that the association between moral disengagement and general defending would be stronger at higher than at lower levels of self-efficacy was confirmed. However, the association between moral disengagement and defending self-efficacy was positive rather than negative as predicted. That is, the more that students morally disengaged the more they reported engaging in general defending, but only at high levels of defending self-efficacy. This relationship was not significant at low levels of defending self-efficacy.

Table 4
Regression coefficients predicting to general defending.

Variable	General defending				SE	95% CI
	Step 1	Step 2	Step 3	Step 4		
Grade	0.35	0.31	0.41	0.43	0.56	[−0.56, 1.52]
Gender	−0.33	0.07	0.30	0.53	0.58	[−0.50, 1.60]
Cyber perpetration	–	0.08	0.02*	0.04	0.08	[−0.10, 0.25]
Cyber victimization	–	0.88**	0.88**	0.85**	0.10	[0.67, 1.09]
DSE	–	–	0.15**	0.13**	0.03	[0.08, 0.19]
MD	–	–	0.09**	0.12**	0.04	[0.05, 0.17]
MD × DSE	–	–	–	0.01**	0.01	[0.00, 0.02]
R ²	0.00	0.30	0.33	0.38		
ΔR ²		0.29**	0.04**	0.05**		

Note. Variables were centred and bootstrapped. Coefficients are unstandardized. Gender was coded 0 = Male, 1 = Female. Grade was coded 0 = Grade 7, 1 = Grade 9. DSE = defending self-efficacy; MD = moral disengagement.

* $p \leq .05$.
** $p \leq .01$.

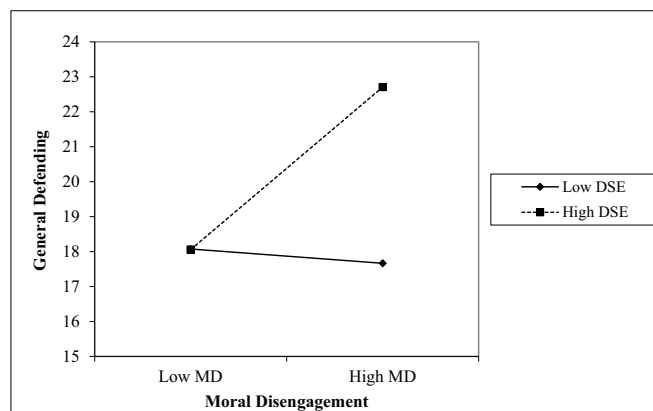


Fig. 1. Moral disengagement × defending self-efficacy predicting to general defending.

3.3.2. Constructive cyber defending

The second four-step regression model predicted to constructive defending and the overall model was significant ($F(8,531) = 21.24, p \leq .001$). In the final model, cyber victimization, aggressive defending, and defending self-efficacy were positively related to constructive defending (see Table 5). In contrast, grade, cyber perpetration, and moral disengagement were negatively associated with it. Specifically, these results showed that students in Grade 7 reported performing more constructive defending than

Table 5
Regression coefficients predicting to constructive defending.

Variable	Constructive defending				SE	95% CI
	Step 1	Step 2	Step 3	Step 4		
Grade	−2.26**	−2.60**	−2.03**	−2.03**	0.57	[−3.08, −1.11]
Gender	1.07	1.59**	1.13	1.15	0.58	[−0.03, 2.36]
Cyber perpetration	–	−0.15**	−0.11*	−0.10*	0.05	[−0.20, 0.01]
Cyber victimization	–	0.31**	0.36**	0.36**	0.06	[0.24, 0.50]
Aggressive defending	–	1.56**	1.75**	1.73**	0.21	[1.36, 2.11]
DSE	–	–	0.21**	0.20**	0.03	[0.15, 0.26]
MD	–	–	−0.11**	−0.10**	0.03	[−0.16, −0.04]
MD × DSE	–	–	–	0.00	0.00	[0.00, 0.01]
R ²	0.03	0.14	0.24	0.24		
ΔR ²		0.12**	0.10**	0.00		

Note. Variables were centred and bootstrapped. Coefficients are unstandardized. Gender was coded 0 = Male, 1 = Female. Grade was coded 0 = Grade 7, 1 = Grade 9. DSE = defending self-efficacy; MD = moral disengagement.

* $p \leq .05$.
** $p \leq .01$.

Table 6
Regression coefficients predicting to aggressive defending.

Variable	Aggressive defending				SE	95% CI
	Step 1	Step 2	Step 3	Step 4		
Grade	0.19	0.30**	0.23*	0.23*	0.11	[0.03, 0.42]
Gender	−0.52**	−0.41**	−0.31**	−0.29**	0.10	[−0.47, −0.11]
Cyber perpetration	–	0.06**	0.04*	0.05*	0.02	[0.00, 0.08]
Cyber victimization	–	0.03	0.02	0.02	0.02	[−0.03, 0.09]
Constructive defending	–	0.05**	0.05**	0.05**	0.01	[0.04, 0.06]
DSE	–	–	−0.01*	−0.01*	0.01	[−0.03, 0.00]
MD	–	–	0.03**	0.03**	0.01	[0.02, 0.05]
MD × DSE	–	–	–	0.00	0.00	[0.00, 0.00]
R ²	0.04	0.27	0.31	0.32		
ΔR ²		0.23**	0.04**	0.01*		

Note. Variables were centred and bootstrapped. Coefficients are unstandardized. Gender was coded 0 = Male, 1 = Female. Grade was coded 0 = Grade 7, 1 = Grade 9. DSE = defending self-efficacy; MD = moral disengagement.

* $p \leq .05$.

** $p \leq .01$.

their older counterparts in Grade 9 ($B = -2.03$, $t = -3.53$, $p < .001$). Cyber perpetration was negatively associated with constructive defending ($B = -0.102$, $t = -2.07$, $p = .039$). However, cyber victimization was positively associated with constructive defending ($B = 0.362$, $t = 5.23$, $p < .001$) as was aggressive cyber defending ($B = 1.73$, $t = 7.25$, $p < .001$). As predicted, defending self-efficacy was positively associated with constructive defending ($B = 0.204$, $t = 7.17$, $p < .001$) and moral disengagement was negatively associated constructive defending ($B = -0.103$, $t = -3.03$, $p = .003$). The interaction between moral disengagement and cyber defending self-efficacy beliefs was not significant.

3.3.3. Aggressive cyber defending

The third four-step regression model predicted to aggressive defending. The overall model for this regression was also significant ($F(8,531) = 31.27$, $p \leq .001$). In the final model, grade and gender were significant (see Table 6). Older students (Grade 9) engaged in more aggressive defending than their younger counterparts (Grade 7) ($B = 0.23$, $t = 2.32$, $p = .021$) and boys engaged in more aggressive defending than did girls ($B = -0.29$, $t = -2.90$, $p < .001$). The other control variables of cyber perpetration ($B = 0.05$, $t = 5.36$, $p < .001$) and constructive defending ($B = 0.05$, $t = 7.25$, $p < .001$) were positively related to aggressive defending. As predicted, moral disengagement was positively related to aggressive defending ($B = 0.03$, $t = 5.35$, $p < .001$). That is, the more students endorsed moral disengagement mechanisms, the more likely they were to engage in aggressive defending. Contrary to expectations, defending self-efficacy was negatively associated with aggressive defending ($B = -0.013$, $t = -2.58$, $p = .01$), suggesting that the less students believed they were able to intervene in cyberbullying episodes to defend the victim, the more aggressively they responded towards the perpetrator. As for constructive defending, the interaction between moral disengagement and defending self-efficacy was not significant.

4. Discussion

The findings from the current study contribute to a multifaceted conceptualization of defending. In the past, the focus of cyber defending was mainly on the different prosocial ways in which defenders could help the victim. However, this study along with other emerging research expands this view of cyber defending to include not only prosocially assisting the victim but acting aggressively towards the perpetrator to protect the victim (Bussey & Fitzpatrick, 2016; DeSmet et al., 2016; Hawkins et al., 2001; Macháčková & Pfetsch, 2016). This view accords with Pozzoli, Gini, and Thornberg's (2017) research linking not only empathic concern but also empathic anger with defending.

The present results show that defending can be prosocially motivated but enacted either constructively or aggressively. The results also show that the socio-cognitive variables of cyber defending self-efficacy and moral disengagement differentially relate to the various aspects of cyber defending measured: general cyber defending behavior and cyber defending response types (constructive and aggressive). Although multiple forms of bystander behavior have been acknowledged for some time (Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996), this study advances the field by demonstrating the multifaceted nature of defending. In previous studies, the negative bystander behaviors of passive bystanding, joining the perpetrator, and reinforcing the perpetrator have been investigated (DeSmet et al., 2016). The present study, however, draws attention to negative aspects of defending where defending is directed at the perpetrator.

As expected, general defending, assessed as a frequency measure of cyberbullying behaviors defended, was associated with higher reported cyber defending self-efficacy. Higher levels of moral disengagement were also associated with higher levels of cyber defending. Although unexpected, this finding accords with other emerging research that defending may not always be constructively enacted. It was noted in the introduction that it has been assumed that lower levels of moral disengagement would be associated with higher levels of cyber defending as defending is seen mainly as a prosocial behavior, an antithesis to moral disengagement (Bandura

et al., 1996). However, the relationship between moral disengagement and cyber defending has been found to be mixed with some studies finding a positive relationship, some a negative relationship and others no relationship. It is noteworthy that in this study, also contrary to expectations, this main effect was further underscored by the significant interaction between defending self-efficacy and moral disengagement. At low levels of defending self-efficacy, moral disengagement was not associated with cyber defending. However, at high levels of defending self-efficacy, moral disengagement was positively associated with general defending. So, when participants believed they were able to engage in defending behaviors, they engaged more frequently in general defending the more they morally disengaged. To shed further light on the multifaceted nature of general defending and this unexpected finding, the results for constructive and aggressive cyber defending are considered.

For constructive cyber defending, the findings revealed that, as expected, defending self-efficacy was related positively to constructive defending and moral disengagement was negatively related to it. The more participants believed they were able to defend victims of cyberbullying, the more likely they reported doing so constructively. Constructive defending of victims was associated with lower moral disengagement scores as expected if cyber defending is conceived mainly as a positive or constructive action.

For aggressive cyber defending, the results were the mirror image of those obtained for constructive defending. In contrast to predictions, defending self-efficacy was negatively associated with aggressive cyber defending. However, consistent with predictions, moral disengagement was positively associated with aggressive defending. That is, aggressive defending was associated with participants judging themselves as less able to engage in defending behavior. However, the more participants morally disengaged, the more they responded aggressively towards the perpetrator when intervening in cyberbullying episodes. The predicted interactions between defending self-efficacy and moral disengagement were not significant for either constructive or aggressive cyber defending suggesting that each of the main effects for defending self-efficacy and moral disengagement maintained in the presence of the other variable for both types of defending.

Taking account of the findings from both constructive and aggressive defending it is apparent why the relationship between moral disengagement and defending has been variable. The general defending measures typically include a composite of constructive and aggressive cyber defending responses. In addition, many of the cyber defending items are ambiguous and can be interpreted either as an aggressive or a constructive response (e.g., “I tried to stop bullying via Facebook and/or YouTube”; Macháčková & Pfetsch, 2016). These findings highlight the importance of measuring specific responses to cyberbullying that are not ambiguous and clearly capture the diverse array of responses that can be used by cyber defenders. Simply intervening in a cyberbullying episode may not always be helpful as aggressive cyber defending may escalate rather than attenuate the bullying episode.

The regression analyses revealed an absence of grade and gender effects for general defending. However, for aggressive defending, boys reported adopting this form of defending more frequently than did girls. Higher aggressive defending by males is consistent with their greater propensity to engage in aggressive perpetration as found in this and other studies (e.g., Barchia & Bussey, 2011a). Grade effects revealed that Grade 7 students were more likely to report using constructive defending than were Grade 9 students, whereas Grade 9 students were more likely to report engaging in aggressive defending than were Grade 7 students. For both genders, aggressive defending increased with age as their frequency of constructive defending waned.

It is not known if these results would replicate for traditional bullying. It may be easier to respond aggressively to perpetrators in the cyber world than in face-to-face bullying episodes. The positive relationship between cyber victimization and cyber bullying in this and other studies highlights the interrelationship among the various bullying-related behaviors in the cyber context (Kowalski et al., 2014) suggesting that both victimization and bullying can co-occur. Responding aggressively to perpetrators in traditional bullying episodes may require additional skills or motivations and bring into play more self-regulatory behaviors that are not as readily activated in the cyber context.

In sum, this study contributes to the growing body of research showing that defending is a multifaceted construct. Although defending was originally conceived as a prosocial activity as it involves helping the victim (e.g., Lambe et al., 2017), it is apparent that at least in the cyber context, there is a darker side to defending. The multifaceted nature of defending may explain why some studies in the cyber context find a positive relationship between defending and moral disengagement and others do not. The results also highlight the propensity of witnesses to adopt aggressive behaviors in cyber space. This fluidity may be enabled in the cyber context because of the different power dynamics in cyber than in traditional bullying, and also the ease of retaliation, disinhibition caused by lack of visual cues, and as suggested by Bauman (2010), moral disengagement may actually be fostered in cyber space.

These results highlight the interrelationship among the different bullying-related behaviors in cyberbullying episodes (Kowalski et al., 2014). Although requiring longitudinal confirmation, these findings suggest that moral disengagement may be a vehicle that perpetuates bullying when anti-bullying moral standards are disengaged, not only by bullies but by those who defend victims. In future research, the moral disengagement measure could be tailored specifically to aggressive defending rather than aggressive behavior in general. In that situation, it would be expected that the relationship between aggressive defending and moral disengagement would be even stronger than found in the present study.

Similar to most studies, the present one has both strengths and weaknesses. It is strengthened by the inclusion of a large sample, measures that are tailored to the cyber context, and controlling other bullying-related behaviors when examining the linkage between the socio-cognitive variables and the various types of cyber defending. Despite these considerable strengths, the study is not without weaknesses. As with many other studies in this field, the data relies on self-reports with the attendant issue of shared method variance. This issue was partially addressed by controlling bullying-related behaviors that were not directly the subject of the analysis. However, the conclusions that can be drawn from this study will be strengthened when the findings are replicated longitudinally, experimentally, and using peer nominations in addition to self-report data.

In conclusion, these results help to clarify the perplexing issue of why moral disengagement has been related to defending in some studies and not in others. Most measures of defending confound both constructive and aggressive defending. When these two types of

defending are separated, different socio-cognitive factors relate to each of them. These results have important implications for intervention programs. It is crucial that children and adolescents are provided with explicit information about how to defend in cyberbullying situations. Simply being told to help the victim can be interpreted in many different ways which may not involve constructive defending. In addition, it is apparent from these data that youth require not only awareness of the different types of defending strategies they can use, but also training in their use to boost their defending self-efficacy so that they believe they are able to use them when required. Therefore, in a school context, along with providing information about possible defending strategies to use in specific contexts, training exercises to boost students defending self-efficacy beliefs could be incorporated into school anti-bullying intervention programs.

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