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Elucidating the Effects of Traditional and Cyber Bullying Experiences on Multidimensional
Self-Concept Domains

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Abstract

The present investigation consisted of a sample of Australian secondary students ($N = 803$) and aimed to elucidate the relation between traditional and cyber bullying and being bullied with multidimensional facets of self-concept. Structural Equation Modelling (SEM) demonstrated a similar pattern of primarily negative outcomes for traditional and cyber forms of bullying and being bullied with the self-concept domains, as measured by the Self-Description Questionnaire II-Short (SDQII-S; Marsh, Ellis, Parada, Richards, & Heubeck, 2005). Findings were interpreted in the context of bullying theory, and it was concluded that in order to fully capture students' experiences of bullying, future studies must be inclusive of traditional and cyber forms. Finally, potential limitations of the current investigation, implications for theory and practice, and directions for future research were presented.

With the ever increasing prevalence and sophistication of communication technologies, the use of technology for such purposes as 'cyber bullying' has simultaneously emerged (Strom & Strom, 2005). Cyber bullying is not a new form of bullying, it utilises the same principles of traditional bullying behaviours, rather across a new medium. In this way, Slee's (1996) definition of traditional bullying has been revised and extended to define cyber bullying as repeated intimidation over time, of a physical, verbal, and psychological nature utilising mobile phone and internet technology, to enact or communicate bullying behaviours to a less powerful person or persons by a more powerful person or group of persons. A significant body of empirical research has documented the damaging long-term consequences of traditional school bullying for both bullies and targets (see Hawker and Boulton (2000) for a review). For example, inclusion in traditional school bullying has been empirically linked to criminality (Eron, Huesman, Dubow, Romanoff, & Yarmel, 1987), psychological disturbance (Kumpulainen, Räsänen, & Henttonen, 1999), and suicidal ideation (Rigby & Slee, 1999). Cyber bullying research has only recently begun to investigate the psychosocial consequences for bullies and targets (e.g. Patchin and Hinduja, 2006), however, to date there has been no attempt to evaluate the relation between involvement in cyber bullying and self-concept. Yet self-concept research has been central to recent advances in the traditional bullying literature and, as such, may offer potentially powerful insights in relation to cyber bullying.

The Current Role of Self-Concept in the Traditional Bullying Literature

Self-concept can be defined as an “organised schema that contains episodic and semantic memories about the self and controls the processing of the self-relevant information” (Campbell & Lavalle, 1993, p. 4). In this way, self-concept serves to structure actions and aspirations through the scheme of positive or negative self-evaluations people have about themselves, their thoughts, beliefs, and attitudes (Hattie, 1992). However, disputes in the empirical literature regarding the role of self-concept in traditional bullying behaviours remain the basis of polarisation and disagreement among researchers (Smith, Schneider, Smith, & Ananiadou, 2004). Such inconsistencies potentially relate to historical conceptualisations of self-concept as a unidimensional construct, whereby self-concept was interchangeably referred to as self-esteem (Marsh & Craven 2006). Contemporary research has demonstrated that self-concept and self-esteem are clearly discrete constructs, whereby self-esteem refers to a global and general self-assessment, and self-concept relates to multidimensional and specific facets of the self (Marsh & Craven, 1997, 2006). The vast majority of bullying research has relied on inadequate, outdated, unidimensional self-esteem constructs, failing to capture the complexity of contemporary multidimensional conceptualisations, where self-perceptions are complex and distinct (Marsh & Craven, 1997, 2006; Marsh, Craven, & Martin, 2006; Marsh, Parada, & Ayotte, 2004; Parada, Marsh, Craven, & Papworth, 2005).

Bullying Others, Being Bullied, and Self-Concept

Parada (2002) suggested that if bullying is positively reinforced by the peer group and consequently perceived by individuals as elevating their position within the school social hierarchy, then categorisation of oneself into such a group is likely to enhance an individual’s sense of social standing and popularity. Staub (1999) proposed that bullies may engage in bullying behaviours to guard and enhance their self-concept, as they lack the socially desired means of attaining a positive self-concept through proficiency and quality school achievement. The structure of bullies’ self-concept is based upon strength and power, such that hurting others is used as a protective mechanism and for the reaffirmation of self-identity (Parada et al., 2005; Parada, Marsh, & Yeung, 1999). More specifically, bullies’ low self-perceptions may serve as a motivator for their engagement in bullying behaviours so as to enhance facets of their self-concept. As a consequence of their bullying behaviours, bullies may attain a personal perception of power and status in the social group which reinforces their behaviour (Parada 2002; Parada et al., 2005).

In contrast, a study conducted by Salmivalli, Kaukiainen, Kaistaneimi, and Lagerspetz (1999) which measured peer and self-evaluated global self-esteem with a sample of 14 to 15 year olds, found that bullies had only a slightly above average self-esteem, together with narcissistic and self-grandiose tendencies. Whilst someone who bullies may perceive themselves to be well liked, superior, and respected amongst their peers, this does not mean such a belief is an accurate reflection of what others think of them (Randall, 1995). Other peers may be fearful of the bullying behaviour and thus give the bully what they want, which does not translate into being respected or liked.

With regard to global self-concept and being bullied, the extant empirical literature has clearly and consistently documented a negative correlation between the two variables (Neary & Joseph, 1994; Rigby & Cox, 1996; Stanley & Aurora, 1998). When specific facets of self-concept have been considered, it has been found that those who are bullied tend to have negative self-perceptions with reference to the degree with which they view themselves as socially capable or accepted by their peers (Callaghan & Stephen, 1995; Hawker & Boulton, 2000).

Moreover, a study conducted by Egan and Perry (1998) elucidated the downward spiral further, whereby low self-concept led to additional victimisation over time.

Marsh, Parada, Craven, and Finger (2004) examined the relation between global bully and target factors and their subsequent effects on multiple domains of self-concept. The results of the study demonstrated that whilst being a bully and a target were both related to lower levels of self-concept, clear distinctions regarding the patterns of correlation were obtained. Specifically, bullying others had negative correlations with Honesty/Trustworthiness, Parent Relations, Academic (Math, Verbal, and School), and Global Self-Esteem self-concepts, yet close to zero correlations were found with Physical Ability, Physical Appearance, and Same Sex Relations. Bullying others was significantly positively correlated with Opposite-Sex Relations, and had small positive effects on Emotional Stability. The Honesty/Trustworthiness self-concept was the most negative aspect of self-concept for bullies, which perhaps indicated that bullies may be cognitively aware that their bullying behaviours are not the right thing to do. Being a target was consistently and negatively associated with low self-concept; the most negative aspect of self-concept being that of Same-Sex Relations, and scores were particularly low in the domain of Emotional Stability. Thus it appeared that an experience of being bullied leaves students feeling socially incompetent and unaccepted by their peers. Global Self-Esteem was negatively correlated with both bullying others and being a target, suggesting that neither bullies nor targets seemed to possess particularly good overall self-concepts. Whilst the nature of the relation between self-concept and traditional bullying is beginning to be elucidated, the relation of cyber bullying and self-concept remains largely unexplored.

The Present Investigation

Within the traditional bullying arena, research has only in recent times started to accurately investigate experiences of bullying, and there exists a scarcity of research in the cyber arena. The current study was an effort to address this issues by exploring the relation between traditional and cyber bullying and being bullied to multidimensional facets of self-concept. It was hypothesised for the individual SEM models that: (1) the Traditional Bully factor would significantly negatively predict Mathematics, Global Self-Esteem, Honesty/Trustworthiness, Verbal, Parent Relations, and General School self-concepts. The most negative relations would occur between Parent Relations, Honesty/Trustworthiness, and bullying. Significant positive relations would be found for Emotional Stability and Opposite-Sex Relations; (2) the Traditional Target factor would significantly negatively predict all 11 self-concept facets. Due to insufficient research available, two research questions were posed with regard to cyber bullying: (1) to what extent would the Cyber Bully factor be significantly related to multiple dimensions of self-concept; and (2) to what extent would the Cyber Target factor be significantly related to multiple dimensions of self-concept?

Method

Participants

Students ($N = 803$) from one Western Sydney Catholic secondary school in Year 7 ($n = 176$), Year 8 ($n = 186$), Year 9 ($n = 157$), Year 10 ($n = 156$), and Year 11 ($n = 128$) participated in the study. Only those students who consented, and who had parental consent to participate were included in the study. Students' ages ranged from 12 to 17 years, with a mean age of 14.03 years ($SD = 1.4$). In total, 53% of students were males ($n = 427$) and 47% were females ($n = 376$). With regard to cultural background, 61% ($n = 489$) of respondents identified their culture

as Australian, 22% ($n = 177$) reported their culture as containing both Australian and another culture (e.g., Greek Australian), and 17% ($n = 137$) reported belonging to a culture other than Australian.

Measures

Revised Adolescent Peer Relations Instrument – Bully and Target (RAPRI-BT). The RAPRI-BT was specifically developed for the present study. The original Adolescent Peer Relations Instrument – Bully and Target (APRI-BT; Parada, 2000) was extended to include cyber bullying in its measurement of interpersonal relationships between secondary school students. The original APRI-BT contained two 18-item scales which measured three forms of traditional Bully and Target behaviours (Physical, Verbal, and Social). The APRI-BT has demonstrated excellent psychometric properties (Finger, Marsh, Craven, & Parada, 2005; Marsh, Parada, Craven et al., 2004; Parada, 2006). The RAPRI-BT was extended to include an additional 13 items on each scale, which measured two forms of cyber Bully and Target behaviours (Visual and Text). The cyber bullying items were developed directly from the original APRI-BT items, and adapted to suit the cyber context. Thus, the first scale comprised 31 items which asked students to state how often, on a six-point Likert scale (1 = Never to 6 = Everyday), they engaged in a series of behaviours. The second scale section also contained 31 items and asked how often students experienced behaviours occurring to them.

Self-Description Questionnaire II – Short (SDQII-S). The SDQ II-S (Marsh et al., 2005) consists of 51 items, 20 of which are negatively worded, and was used to measure multidimensional facets of adolescents' self-concept (see Appendix G for item examples and subscale descriptions). The instrument comprises 11 subscales: Mathematics; Physical Appearance; Global Self-Esteem; Honesty/Trustworthiness; Physical Ability; Verbal; Emotional Stability; Parent Relations; General School; Opposite-Sex Relations; and Same-Sex Relations. All responses were scored on a six-point Likert scale (1 = False to 6 = True). The SDQII-S has previously demonstrated sound psychometric properties (Marsh et al., 2005; Parada 2006).

Procedure

Permission to conduct the study was obtained from the University of Western Sydney Human Ethics Panel, the Catholic Education Office, and the Principal of the participating school. Students with parental consent were instructed verbally of the purpose of the study, of their voluntary and anonymous participation, and their right to withdraw at any time with lack of penalty. Signed student consent was obtained prior to the commencement of the study. The questionnaire was read aloud to students in year groups and took approximately 45 minutes to complete.

Statistical Analyses

Structural Equation Modelling. Structural Equation Modelling (SEM) was used to assess the relations between bullying and victimisation constructs and multiple dimensions of self-concept outcomes. Four SEMs were conducted to assess the following for both the Bully and Target scales: (a) the individual predictive relations of the traditional form; and (b) the individual predictive relations of the cyber form. These SEMs were conducted separately as the sample size was not large enough to be inclusive of so many predictive paths in the one model.

The advantage of SEM is that it uses multiple regression analyses to examine the relations between predictor variables and outcome variables, whilst incorporating the structural relations between latent and observed variables (Byrne, 1998). In addition, SEM allows for the estimation of error terms associated with observed indicators (Byrne, 2001). The inclusion of such processes allows the association between predictor variables and outcome variables to be

uncovered by obtaining parameter estimates similar to their population values and through the isolation of the variables via their uniquenesses and error associated with their indicators (Hoyle, 1995). In order to assess model fit, the following goodness-of-fit indices were emphasised: the Root-Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993), the Tucker Lewis Index (TLI; Bentler & Bonett, 1980), and the Comparative Fit Index (CFI; Bentler, 1990). For the RMSEA, values below .05 represent excellent fit and values as high as .08 indicates acceptable errors of approximation (Browne & Cudeck, 1993; Holmes-Smith, 2000). The TLI and CFI yield values that range from 0 to 1, with values greater than .95 indicative of excellent fit, and values greater than .90 indicative of good model fit (Hu, Bentler, & Kano, 1992; Marsh, Balla, & Hau, 1996; Schumacker & Lomax, 1996).

Results

Bullying and Multiple Dimensions of Self-Concept

In order to uncover the relations between students' experiences of bullying others and self-concept facets, SEMs were carried out (refer to statistical analyses for an overview). As displayed in Table 1, the goodness-of-fit indices for the two SEMs demonstrated acceptable fits with the data. The path coefficients for relations between the Bully factors and the SDQII-S factors are presented in Table 2.

Table 1
Goodness-of-fit Indices for Higher-Order RAPRI- Bully Factors Self-Concept SEMs

	χ^2	df	CFI	TLI	RMSEA
Model 1	8555.86	3168	.96	.95	.046
Model 2	8767.48	3168	.95	.95	.047

Note. χ^2 = Chi-Square statistic, df = Degrees of Freedom, CFI = Comparative Fit Index, TLI = Tucker Lewis Index, RMSEA = Root Mean Square Error of Approximation, Model 1 = individual predictive effects of traditional bullying, Model 2 = individual predictive effects of cyber bullying.

With reference to the path coefficients presented in Table 2, the individual effects for the Traditional Bully factor demonstrated significant positive prediction of Physical Appearance and Emotional Stability self-concepts. Furthermore, the Traditional Bully factor significantly negatively predicted Global Self-Esteem, Honesty/Trustworthiness, Verbal, Parent Relations, and General School Self-Concepts. The same negative predictions as those aforementioned were found for the model examining the individual predictive effects of the Cyber Bully facet. Comparatively, the most negative correlations occurred with the Honesty/Trustworthiness and Parental Relations for both bullying forms.

Table 2
Path Coefficients of Bully Factors and Self-Concept SEMs

	Model 1	Model 2
	Traditional Bully	Cyber Bully
Mathematics	-.01	-.01
Physical Appearance	.10**	.07
Global Self-Esteem	-.14***	-.14***
Honesty/Trustworthiness	-.54***	-.36***
Physical Ability	.02	-.08
Verbal	-.24***	-.18***
Emotional Stability	.11**	.01
Parent Relations	-.33***	-.22***
General School	-.24***	-.20***
Opposite-Sex Relations	.08	.06
Same-Sex Relations	-.01	-.06

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

Note. Model 1 = individual predictive effects of traditional bullying, Model 2 = individual predictive effects of cyber bullying.

Being Bullied and Multiple Dimensions of Self-Concept

SEMs were conducted to elucidate the relations between students' experiences of being a target of bullying and multiple dimensions of self-concept. The analyses were parallel to those outlined for the Bully factor above. Table 3 presents the goodness-of-fit indices for the two SEMs, and all demonstrated acceptable fits with the data. The path coefficients for the relations between the Target factors and the SDQII-S factors are presented in Table 4.

Table 3
Goodness-of-fit Indices for Higher-Order RAPRI- Target Factors and Self-Concept SEMs

	χ^2	df	CFI	TLI	RMSEA
Model 1	7573.35	3168	.96	.96	.042
Model 2	7522.19	3168	.96	.96	.042

Note. χ^2 = Chi-Square statistic, df = Degrees of Freedom, CFI = Comparative Fit Index, TLI = Tucker Lewis Index, RMSEA = Root Mean Square Error of Approximation, Model 1 = individual predictive effects of traditional bullying, Model 2 = individual predictive effects of cyber bullying.

The individual effects of the Traditional Target factor shown for model one in Table 4 revealed nine of the 11 estimated paths reached significance. Specifically, the Traditional Target factor significantly and negatively predicted Mathematics, Physical Appearance, Honesty/Trustworthiness, Global Self-Esteem, Emotional Stability, Parent Relations, General School, Opposite-Sex Relations, and Same-Sex Relations self-concepts. In the second model, the Cyber Target factor significantly negatively predicted Mathematics, Global Self-Esteem, Emotional Stability, Parent Relations, General School, Opposite-Sex Relations, and Same-Sex Relations self-concepts.

Table 4
Path Coefficients of Target Factors and Self-Concept SEMs

	Model 1	Model 2
	Traditional Target	Cyber Target
Mathematics	-.09*	-.10*
Physical Appearance	-.17***	-.05
Global Self-Esteem	-.17***	-.13**
Honesty/Trustworthiness	-.12**	-.16***
Physical Ability	-.05	-.02
Verbal	-.03	-.01
Emotional Stability	-.18***	-.09*
Parent Relations	-.24***	-.17***
General School	-.11**	-.14**
Opposite-Sex Relations	-.17***	.02
Same-Sex Relations	-.30***	-.15***

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

Note. Model 1 = individual predictive effects of traditional bullying, Model 2 = individual predictive effects of cyber bullying.

Discussion

As hypothesised, the use of traditional bullying significantly negatively predicted many aspects of self-concept, and the pattern of relations was remarkably similar for the use of cyber bullying. The Honesty/Trustworthiness, Parent Relations, Verbal, and General School self-concepts were significantly negatively affected by traditional bullying as expected, and the same relations were found for cyber bullying. In particular, the Honesty/Trustworthiness effect may suggest that students who engage in bullying others are aware that their behaviours are the wrong thing to do, and they may also engage in lying to avoid getting into trouble, which could explain the Parent Relations finding. With specific relation to cyber bullies, these findings may relate to their use of anonymous and deceptive online screen names whereby they can hide behind the technology to enact bullying behaviours (Berson et al., 2002; Franek, 2006; Shariff, 2005). Both of these facets of self-concept were the most strongly affected by traditional and cyber bullying, which is consistent with previous traditional bullying self-concept research that has established such findings (Marsh, Parada, Craven et al., 2004; Parada, Marsh, Craven, & Papworth, 2005).

Interestingly, whilst there was significant negative effect for the Verbal factor, inconsistent with the predictions, a non-significant relation was found for Mathematics. This same pattern of relations was also found for cyber bullying. This result is quite perplexing as previous traditional bullying research has found bullying to significantly negatively predict both facets (Marsh, Parada, Craven et al., 2004; Parada, Marsh, Craven, & Papworth, 2005) or neither of the two (Finger, 2002). A potential explanation for this could lie in research that has found Mathematics and Verbal domains to be uncorrelated (Marsh et al., 2005; Marsh & Shavelson, 1985). The negative effect for the General School self-concept is possibly related to an overall sense of school belonging; both forms of bullying behaviour do not conform to the school ethos. Furthermore, the negative effect evinced for Global Self-Esteem was identical in size for traditional and cyber bullies, meaning that those who engage in either form do not possess particularly good overall self-concepts.

In contrast to the hypotheses, a non-significant effect for traditional bullying on the Opposite-Sex Relations facet was found. In addition, the same non-significant relation was found

for engagement in cyber bullying. Indeed, such results run counter to those demonstrated in the Marsh, Parada, Yeung, and Healey (2001) and Marsh, Parada, Craven et al. (2004) studies which found involvement in bullying significantly positively predicted Opposite-Sex Relations. The finding of these latter studies was explained with reference to theories that have argued one of the most fundamental motivations for engaging in bullying other students is a means of enhancing facets of their self-concept (Staub, 1999). Even if this motivation to increase likeability is real, the resultant effect of the actual use of both traditional and cyber bullying was found not to result in positive self-perceptions of relationships with the opposite-sex.

The significant positive relation for Emotional Stability and traditional bullying was as expected; Parada, Marsh, Craven, and Papworth (2005) outlined this may be the only facet of self-concept positively related to bullying behaviour. The effect for cyber bullying was not significant although it was in the same direction. This may be the case because Emotional Stability is only related to students' *perceptions* of how stable their emotions are, rather than the reality. Contrary to the hypotheses, the current study found a further significant positive relation between traditional bullying and Physical Appearance self-concept and although not significant, cyber bullying evinced an effect in the same direction. This finding is inconsistent with previous research (Finger, 2002; Marsh et al., 2001; Marsh, Parada, Craven et al., 2004; Parada, 2002), however, may link to findings that bullies can overrate their competencies in certain areas (Salmivalli et al., 1999). As predicted, there were non-significant findings for the traditional bullying factor on the Physical Ability and Same-Sex Relations facets, consistent with prior research (Finger, 2002; Marsh et al., 2001; Marsh, Parada, Craven et al., 2004). Similarly, the same effects were again found for cyber bullying, further evidencing the similarities in the consequences faced by bullies for their engagement in either of the bullying constructs.

As predicted, being the target of traditional bullying was significantly negatively related to Mathematics, Physical Appearance, Global Self-Esteem, Honesty/Trustworthiness, Emotional Stability, Parent Relations, General School, Opposite-Sex Relations, and Same Sex-Relations. Moreover, being the target of cyber bullying resulted in a similar pattern of relations, with the exception of the Physical Appearance and Opposite-Sex Relations self-concepts which were non-significant. Being the target of bullying was negatively related to the General School self-concept, suggesting that targets feel like they do not belong at school. The negative relation between being bullied and Same-Sex Relations is likely to reflect it being same-sex peers who bully them. Moreover, this latter finding and the significant negative effect for the Emotional Stability domain suggests that being the target of bullying leaves targets feeling unvalued and unaccepted by their peers.

The relations for the Honesty/Trustworthiness and Parent Relations facets may indicate that adolescents often attempt to keep their victimisation a secret. Specifically for cyber bullying, it has been suggested that targets may not inform their parents as they fear their mobile phone or internet access will be taken away which would again lead to further isolation (Belsey, 2005). The direct significant negative relation for the Global Self-Esteem factor suggested that targets of both traditional and cyber bullying did not possess overall good self-concepts. All of the above findings were consistent with prior traditional bullying research (Neary & Joseph, 1994; Marsh, Parada, Craven et al., 2004; Rigby & Cox, 1996; Stanley & Aurora, 1998).

In contrast to the predictions made, being the target of traditional bullying was not significantly negatively related to Physical Ability and Verbal self-concepts, and the same relations were uncovered for cyber bullying. These findings are inconsistent with prior research (Marsh, Parada, Craven et al., 2004) and may reflect some areas where these victimised

adolescents were able to maintain some unaffected facets of their self-concepts, although this link remains unclear. Overall, it was apparent that being the victim of both traditional and cyber bullying resulted in negative effects on targets' self-concepts; the internalisation of being continually harassed may lead targets to believe they are worthless and failures.

A number of potential limitations of the study need to be considered. Firstly, the data presented in the current study were of a self-report nature. A potential problem with self-report measures is the presumption that students reliably report their own behaviour and have a direct knowledge of the constructs under study (Pellegrini & Bartini, 2000). Furthermore, with specific regard to bullying investigations, some adolescents will ultimately choose not to disclose their involvement. Secondly, the research was cross-sectional in nature, which disallowed any determination of where in the chain the causal relations lied. Recent advances in traditional bullying research such as that conducted by Parada (2006) employed the use of longitudinal causal modelling research tracking the same students. This has allowed the investigation of the effects of prior self-concept on later involvement in bullying, and the consequences for self-concept of such involvement. Future research should model the causal ordering of the variables for cyber bullying over time.

The current investigation explored of a rich tapestry of relations between traditional and cyber bullying and multidimensional facets of self-concept. This was the first study that the authors are aware of to investigate the relation of cyber bullying to self-concept outcomes, and to further explore how such relations compared to experiences of traditional bullying. The results demonstrated that involvement in cyber bullying had significant detrimental effects for bullies and targets alike. In view of these findings, future studies must be inclusive of both traditional and cyber forms in order to accurately investigate adolescents' bullying experiences. Students should remember their time at school as one of the happiest in their lives, free from all forms of bullying and their related consequences. It is hoped that the present investigation makes a worthy contribution to the field of cyber bullying, and will go some way in the development of effective interventions that aim at seeking prevention to this critical social issue of our time.

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