

Do My Self-Beliefs Lead Me to Bully or be Bullied? An Investigation into the Causal Relations Between Bullying, Victimization and Self-Concept

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Do My Self-Beliefs Lead Me to Bully or be Bullied? An Investigation into the Causal Relations Between Bullying, Victimization and Self-Concept

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The present investigation evaluated relations between bullying, victimisation, multiple dimensions of self-concept, sex and age over two occasions for a large sample of students ($N = 3445$) from six high schools in Year 7 to 11. In Study 1, there was strong psychometric support (confirmatory factor analysis and reliability) for two new instruments; a new short version of the widely used Self Description Questionnaire II (SDQII-S) that measures 11 different components of self-concept and Adolescent Peer Relations Instrument that measures three Bully factors (Physical, Verbal, Relational) and the corresponding three Victim factors. In Study 2, males used all three types of bullying (Physical, Verbal, Relational) and experienced two types of victimisation (Physical and Verbal) significantly more than females. Whereas levels of victimisation and bullying both increased during early high school years, victimisation tended to decrease during subsequent high school years whereas bullying did not. In Study 3, longitudinal causal models indicated that victimisation and bullying are positively correlated and mutually reinforcing constructs. Bullying leads to continued bullying but also becoming a victim, whereas being a victim leads to continued victimisation but also becoming a bully. Victim and low social self-concepts had mutually reinforcing negative effects. Contrary to predictions, however, increased bullying did not enhance subsequent social self-concepts. The results suggest that increased social consciousness about the negative effects of bullying may have undermined the ability of bullies to use anti-social bullying tactics to enhance their self-concepts.

Background

What is Bullying?

Bullying is a growing and significant problem in many schools around the world, including Australia (Healey, 2001). It involves an intentional hurtful action directed toward another person or persons, by one or more persons, and involves a complex interplay of dominance and social status (Sutton, Smith, & Swettenham, 1999). Bullying is typically repetitive and involves a power imbalance between the bully and victim where the victim is unable to defend themselves from the bully (Rigby, 2001), which runs in accordance with findings that show victims to be physically weaker (Lagerspetz, Björqvist, Bert, & King, 1982). This power imbalance and the fact that bullying behaviours are repeated over time are what differentiate bullying from other forms of aggressive behaviour (Schuster, 1996).

While many studies suggest the existence of three types (Physical, Verbal, Relational) of bullying and victimisation (e.g. Björqvist, et al., 1992; Crick et al., 2001; Rigby & Slee, 1999; Salmivalli, Kaukiainen, & Lagerspetz, 2000), no study has adequately documented the specific 3-factor structure. Thus, there is a need for confirmatory factor analysis (CFA) to be performed to test specific a priori theories about a specific set of structures (Hills, 2002) of bullying and victimisation, which would yield more conclusive results and show greater support or lack of support for instruments used.

What are the Consequences of Bullying?

A substantial body of evidence has documented the detrimental long-term negative effects, of bullying on victims and perpetrators (e.g. Bernstein & Watson, 1997; Deater-Deckard, 2001;

Nansel, Overpeck, Pilla, Ruan, Simons-Morton & Scheidt, 2001). Involvement in school bullying has been empirically identified as a contributing factor to peer rejection (Deater-Deckard, 2001), delinquent behaviour (Rigby & Cox, 1996), criminality (Eron, Huesman, Dubow, Romanoff, & Yarmel, 1987), psychological disturbance (Kumpulainen, Räsänen & Henttonen, 1999), further violence in the school (Galinsky & Salmund, 2002), depression (Kaltiala-Heino, Rimpela, Marttunen, Rimpela, & Rantanen, 1999), and suicidal ideation (Rigby & Slee, 1999). These effects have been found to continue into adulthood for both the perpetrators of bullying and those who are victimized by them (Olweus, 1993a).

Gender Differences

Males have often been cited as the more aggressive sex (e.g. Tomada, & Schneider, 1997). In the past, research at one stage ignored female aggressiveness because scores were so low that they were said to be redundant (Olweus, 1972, cited in Salmivalli et al., 1998). While clear findings show that males tend to use more physical and verbal forms of bullying (e.g. Björkqvist et al., 1992; Tomada, & Schneider, 1997), research to support the theory that females use more relational forms of bullying than males, yields inconclusive results, particularly with the problems of inadequate psychometric testing. Using adolescent participants together with a strong measure of relational bullying, the present study looks to test the assertion that females use more relational forms of bullying, and to explore the developmental trend of this type and other types of bullying in high school.

The Social Nature of Bullying

Salmivalli and her colleagues (1996) have suggested that participation in bullying behaviours involve a sense of enjoyment not only by the perpetrators, but also by the peers. The social nature of bullying usually involves most peers in the class or group who are either actively involved or passively aware of the bullying process. Peers encourage the bully, ignore the bullying incident, help the victim, or fail to discourage the bullying behaviour. This is evident in observational research by Atlas and Pepler (1998) who explored the prevalence of peer involvement in bullying. They video monitored primary school students in classroom and playground settings, and found 85% of bullying incidents occur with the involvement of peers.

Parada (2002a) suggests bullies may continue bullying in an attempt to gain further reinforcement or non-punishment from their peers. Furthermore, Hinkley, Marsh, Craven, McInerney, and Parada (2002) state that an individual's social identity is an 'integral and important' part of that person's self-concept. Thus, individuals may begin, or increase their use of bullying because they believe these behaviours are acceptable in their peer group. They may expect positive social outcomes, which may thus lead them to feel good about themselves and perceive themselves to be quite popular.

Aims

The aims of Study 1 were to conduct psychometric evaluations of the instruments (The Self-Description Questionnaire- Short: SDQII-S; The Adolescent Peer Relations Instrument-Bullying and -Target/ Victimization: APRI-B and -T) used in the present investigation. It was hypothesised that confirmatory factor analysis (CFA) would support the a priori 11-factor structure for the new version SDQII-S (similar to the original SDQII). The CFA will also support the first-order a priori 6-factor structure of the APRI-B and -T, supporting the existence of three types of bullying and victimisation (Physical, Verbal, Relational), and additionally, a higher-order a priori 2-factor structure of total bullying and victimisation

(Bully, Victim). Furthermore, reliability measures of both instruments will meet satisfactory levels.

Study 2 aimed to explore differences in types of bullying and victimization (Physical, Verbal, Relational) as a function of sex (male, female) and year level in school (years 7 to 11). Whilst Study 3, used structural equation modelling (SEM), to test the hypothesis that bullying and victimisation are mutually reinforcing over time. More specifically that a) bullying at Time 1 contributes significantly and positively to victimisation at Time 2, and b) that victimisation at Time 1 contributes significantly and positively to bullying at Time 2. It was also predicted that a) Time 1 bullying behaviours will lead to later more positive peer-related self-concepts (Same-Sex and Opposite-Sex relations); b) Time 1 victimisation will lead to later more negative peer-relations self-concepts (Opposite-Sex and Same-Sex Relationships).

Method

Design and Procedure

The present investigation consists of three studies based on a larger University of Western Sydney implementation study to decrease bullying in schools, consisting of results from two self-report instruments which were administered on two occasions: Time 1 (T1) data was completed during the start (March), and Time 2 (T2) during the middle (July), of the school year. Teachers who had specifically received training on administration of these instruments administered the instruments. The two instruments: a new short-form version of the widely used The Self-Description Questionnaire II (Marsh, 2000; SDQII-S), and the Bullying and Target/ Victimization Subscales of The Adolescent Peer Relations Instrument (APRI-B and APRI-T; Parada, 2000) were used.

Participants

A representative sample of students between Year 7 and 11 was drawn from six Catholic Secondary Schools in the Western Sydney Region. *Study 1* consists of a total of 3445 respondents (1780 males, 2479 females) who completed T1 questionnaires. *Study 2 and 3* for consistency in hypothesis testing, respondents were matched so that only participants who completed both T1 and T2 data were included for analysis, leaving a total of 2289 participants (901 males, 1388 females; 651 year 7s, 558 year 8s, 479 year 9s, 415 year 10s, and 186 year 11s).

Results: Study 1

SDQII-S:

A CFA of the 11-scale a priori structure of the SDQII-S was conducted on the 51 variables. The goodness of fit TLI (.91) and RNI (.91), were acceptable, suggesting that 91% of the covariance can be explained among the variables. The RMSEA (.04) clearly showed the errors in approximation of the population were low and produced a good fit to the data.

The parameter estimates showed satisfactory factor loading of all variables onto their a priori factors, ranging from .47 to .96, with a median of .71. Furthermore, all factor loadings were statistically significant (all $ps < .001$). Correlations among the 11 self-concept factors varied from .02 to .78 (median $r = .26$) with 84% of these correlations less than .40, indicating that the self-concept factors measured using the SDQII-S were reasonably distinct factors. As expected, the highest correlations were between School and Math, and School and Verbal. In summary, the parameter estimates and goodness of fit indexes provide support for the newly developed short form of the SDQII and the a priori 11-scale factor structure (Physical Ability,

Physical Appearance, Same-Sex Relations, Opposite-Sex Relations, Honesty/Trustworthiness, Parental Relations, Emotional Stability, Verbal, Math, School, General). Reliabilities of each SDQII-S factors reached a satisfactory level with alpha coefficients ranging from .79 to .90, with a median alpha coefficient of .84. Internal consistencies of the combined 51 items also reached a satisfactory level with an alpha coefficient of .92. Cronbach alphas for each subscale in the shortened version (51-item) are only slightly lower or similar to the original SDQII 102-item instrument. In summary, the shortened 51-item SDQII-S was found to be an excellent short-form version of the original 102-item SDQII, showing the SDQII-S to have strong psychometric qualities in its a priori 11 self-concept factors retained from the original version.

APRI-B and APRI-T

First-Order Factor Structure

First-order CFA was conducted on responses to the APRI-B and APRI-T. Analysis of the thirty-six variables (APRI-B = 18-item, APRI-T = 18-item) and their corresponding six a priori scale factor structure resulted in an acceptable fit to the data (TLI = .93, RNI = .93) suggesting that 93% of the covariance can be explained among the variables. Further indications of a good fit were found with low errors in approximation of the population (RMSEA = .048).

CFA of the APRI-B/ APRI-T responses revealed strong factor loadings ($p < .001$) of all items onto their according factors, ranging from .46 to .85, with a median of .75. As expected, correlations among factors indicated that correlations among the bullying scales (ranging from .66 to .81, $p < .001$) and among the victimization scales (ranging from .73 to .80, $p < .001$) were all very high, suggesting the possibility of higher-order Bully and Victim factors. Importantly, the significantly positive (but small) correlations between victimization and bullying behaviours (ranging from .11 to .34, $p < .001$) demonstrated that some persons may participate in bullying behaviours as well as become victimised by others who take on such behaviours. Reliabilities of each first-order 6 a priori factors: the APRI-B factors (Physical-Bully, Verbal-Bully, Relational-Bully), reached satisfactory levels (alpha coefficients .83 to .89, median alpha .85) as did the APRI-T subscales (alphas .89 to .92, median alpha = .90). These parameter estimates and goodness of fit indexes together with the internal consistency reliabilities provide support for the first-order a priori 6-factor, thirty-six item APRI-B and -T bullying/ victimisation instrument (Physical-Bully, Verbal-Bully, Relational-Bully, Physical-Victim, Verbal-Victim, Relational-Victim).

Higher-Order Factor Structure

In follow-up analyses of the higher-order factor structure of the 36 items comprising the APRI-B and -T, the higher-order model posited two higher-order factors: a higher-order Bully factor (defined by the first-order Physical-Bully, Verbal-Bully, Relational-Bully factors) and a higher-order Victim factor (defined by the first-order Physical-Victim, Verbal-Victim, Relational-Victim factors).

The Higher-order Model resulted in a reasonable fit to the data (RNI = .93, TLI = .92, RMSEA = .050) and a well-defined factor structure. Parameter estimates demonstrated first-order factors substantially loaded onto the two factor, higher-order factors in Model 1 (Bully: ranging from .77 to .94, median = .86; Victim: ranging from .83 to .92, median = .88; $p < .001$). The correlation between these higher-order Bully and Victim factors ($r = .28$) was consistent with results based on the first-order factor structure. These results support the a priori higher-order factor structure consistent with the design of the instrument.

Internal consistencies for the higher-order 2 factor Bully and Victim subscales also reached a satisfactory level (alpha coefficient of APRI-B = .93, APRI-T = .95). and total combined item scores of APRI-B and APRI-T for T1 respondents.

Strong psychometric qualities were found for the APRI-B and -T. The strong first-order a priori 6-factor structure of the APRI-B and -T as well as the acceptable higher-order 2 a priori factor structure (Bully, Victim), illustrate the flexibility of this instrument which can be used for analyse of a) different types of bullying and victimisation (Bully-Physical, Bully-Verbal etc.), as well as b) of overall bullying and victimisation experienced (i.e. Bully, Victim).

Results: Study 2

A $2 \times 5 \times (2 \times 3)$, [sex \times year level \times (role \times type)] profile analysis was conducted in which a polynomial contrast was applied to the year in school factor to evaluate linear, quadratic, and cubic components of this effect. Alpha was set at .05 and a statistically significant four-way interaction was found: $F(8, 4558) = 2.309, \eta^2 = .004, p = .018$. Furthermore, linear, quadratic and cubic relationships within these interactions were statistically significant (contrast estimate = .070, SE = .027, $p = .011$; contrast estimate = -.203, SE = .026, $p < .001$; contrast estimate = .056, SE = .024, $p = .018$, respectively).

Because a significant four-way interaction was found, in order to clarify the types of bullying and victimisation on which males and females differ a 2×5 multivariate analysis of variance with a between-subjects design was conducted where six dependent variables were entered (Physical-Bully, Verbal-Bully, Relational-Bully, Physical-Victim, Verbal-Victim, Relational-Victim) and post hoc pairwise comparisons were further analysed. Males were found to have statistically significantly higher means than females in all types of bullying (Physical: $F(1, 2279) = 256.93, \eta^2 = .101, p < .001$; Verbal: $F(1, 2279) = 178.23, \eta^2 = .073, p < .001$; Relational: $F(1, 2279) = 7.52, \eta^2 = .003, p = .006$) and in two types of victimisation (Physical: $F(1, 2279) = 142.25, \eta^2 = .059, p < .001$; Verbal: $F(1, 2279) = 44.83, \eta^2 = .019, p < .001$). However, males and females did not differ significantly in regards to Relational-Victim.

Males and females were found to have similar patterns of development between Year 7 and 11 for each type of bullying and victimisation. *For mean bullying scores:* In relation to the statistically significant linear, quadratic and cubic developmental differences in types of bullying for males and females, it can be seen that for both males and females, quadratic developmental relationships exist for Physical-Bully and Verbal-Bully due to their substantial increase in bullying from Year 7 to 8, but stabilising tendencies thereafter. Interestingly, for Relational-Bully, females increase gradually from Year 7 to Year 11, whereas males decrease somewhat in relational forms from Year 8 to Year 11. *For mean victimisation scores:* Where mainly quadratic developmental relationships were found for different types of bullying, cubic relationships appeared to be evident in different types of victimisation for both males and females. There is a substantial increase of all types of victimisation from Year 7 to Year 8 (where victimisation peaks) for both sexes. Thereafter, a gradual decline in the experience of Physical-Victim and Relational-Victim can be seen. For Verbal-Victim however, no obvious developmental decline was evident. Furthermore, pairwise comparisons between Year 7 and 11 for both sexes found no statistically significant decrease in Verbal-Victim between the peak (Year 8 for males and females), and the nadir at Year 11 for both males and females, whereas a significant decline was found for Physical-Victim (males: mean difference = .327, SE = .116, $p = .05$; females: mean difference = .170, SE = .055, $p = .019$), and Relational-Victim (males: mean difference = .358, SE = .108, $p = .009$; females: mean difference = .307, SE = .087, $p = .004$). Thus a quadratic developmental relationship was

found for Verbal-Victim whereas cubic developmental relationships were found for Physical-Victim and Relational-Victim.

Results also suggest Year 7 students tended to be the least involved in any type of bullying or victimisation and Year 8 students to be the most victimised as well as highly involved in Physical and Relational types of bullying, but not Verbal.

Although the hypothesis that females use more relational bullying than males was not statistically supported in the present study (findings show rather that males use significantly more of all types of bullying, including relational), analysis of the quadratic development of relational bullying from Year 7 to 11, revealed a gradual increase in the use of relational bullying by females between Year 8 and 11, whereas a decline was found for males. Furthermore, the mean relational bullying score for females exceeded that of males in year 11.

The present study did not find that any type of bullying decreased significantly with age. Rather, physical and verbal bullying significantly increased from Year 7 to 11 whereas, a significant and obvious decline between Year 8 and 11 in Physical and Relational victimisation was found for both sexes. Year 8 males and females were the most frequently victimised in physical and relational forms whereas a similarly high mean verbal victimisation score was found for Year 8, 9 and 10 students. Year 8 males tended to be highly involved as bully in physical and relational forms with Year 9 students some of the most frequently involved in bullying behaviours.

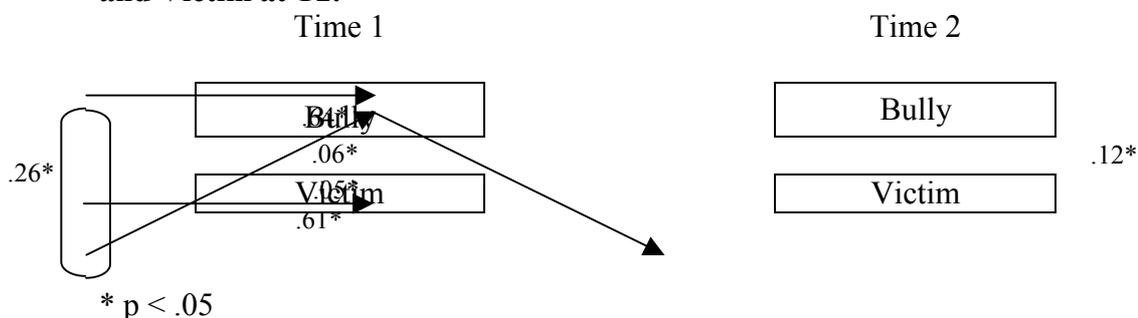
Results: Study 3

Study 1 psychometric analysis supported the higher-order 2 a priori factor structure of Bully and Victim. Thus, Bully and Victim scale scores were analysed in Study 3 to examine the overall contribution of bullying and victimisation to each other, and to the 11 psychological factors of self-concept found in Study 1.

Longitudinal causal models of the relations between Bully, Victim and the 11 self-concept scale scores were performed using 2 separate structural equation models (SEM).

Model 1 investigates the impact of Bully and Victim at T1 on Bully and Victim at T2. This model is critical to pursuing the numerous studies showing that Bullying and Victimisation are not antithetical roles and may actually be positively correlated, as was also shown earlier in Study 1. More importantly, the further analysis pursued here, goes beyond the previous significant positive correlations found in Study 1, and other research, evaluating the hypothesis that Bully and Victim have mutually reinforcing effects on each other over time.

Figure 1: Standardised coefficients for Model 1 of T1 Bully and Victim, predicting Bully and Victim at T2.



Results for Model 1 (Figure 1) show the strongest path coefficients, as expected, were those from T1 Bully to T2 Bully (.64), and T1 Victim to T2 Victim (.61). Using bullying at T1 is indicative of a high tendency of using and increasing the use of bullying at T2 and similarly,

those who are victimised at T1, were more likely to be victimised at T2. However, these stability coefficients show that individual differences are only reasonably stable over time.

The modest correlation found between Bully and Victim (.26, $p < .001$) at T1, together with the positive residual correlations between Bully and Victim (.12, $p < .001$) at T2 (after controlling for T1 scores), indicate the use of bullying at any one time may also involve being victimised at that time. Crucially, the statistically significant residual correlation between Bully and Victim at T2 indicates the two constructs were more positively correlated at T2, beyond what could be explained in terms of the positive correlations between bullying and victimisation at T1.

The most important paths in Model 1 in relation to the a priori hypothesis are the small, but statistically significant and positive path coefficients leading from T1 Bully to T2 Victim (.05, $p < .05$) as well as the small, but statistically significant and positive path coefficients leading from T1 Victim to T2 Bully (.06, $p < .05$). These paths suggest that being victimised at T1 resulted in the increased use of bullying behaviours at T2, more than can be explained in terms of T1 Bully. Similarly, using bullying at T1 resulted in increased victimisation at T2, more than can be explained by T1 Victim. This means being a bully at T1 may lead an individual to become victimised at T2, and being a victim at T1 may lead an individual to use bullying in their interactions with peers at T2. This important and previously unidentified finding illustrates the Bully and Victim roles are mutually reinforcing patterns of behaviour, such that the occurrence of one leads to the other. This has extensive implications for both interventions that aim to decrease bullying in schools, and for the future direction of bullying research.

The hypothesis that using bullying at T1 predicts being victimised at a later time, and vice versa, that victimisation at T1 predicts using bullying behaviours at a later time T2, (measured after four months), was supported by results. This finding, together with the statistically significant correlations (particularly the high residual correlations found at T2 after accounting for T1 effects)- between using bullying and being victimised at any one time, reinforce the fact that using bullying may lead an individual to being victimised at that time, and at a later date.

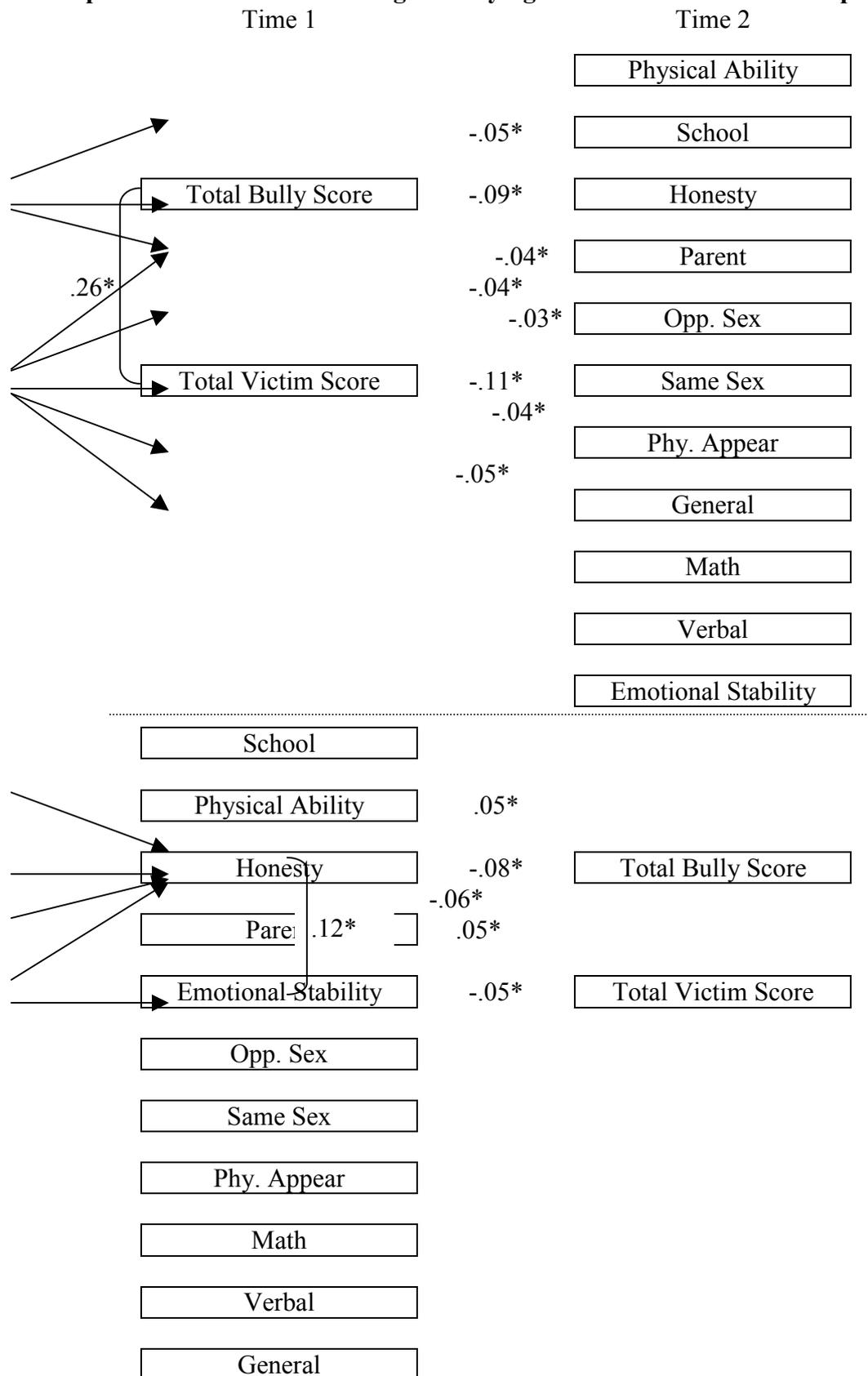
This important and previously unidentified finding of the connection between bullying behaviours and victimisation over time, illustrates the complexities between using bullying behaviours and becoming victimised over time. While results do not deny the stability of assigned roles (Bully, Victim), justification for participant roles where bullies remain bullies and victims get locked into their social victimisation place, does not hold true for all or most students. Individuals cannot simply be categorized into one of these 2 groups (i.e. bully or victim), or categorized into any such group (i.e. bully-victims). All students have the potential to use bullying behaviours as well as become victimised, some more than others given certain preceding psychological and physical traits as will be shown in Model 2. This has extensive implications for both interventions that aim to decrease bullying in schools and has real consequences on current research that attempts to define groups of individuals into specific participant roles (bully, victim, bully-victim etc).

Model 2 (see Figure 2) investigates the impact of T1 Bully and Victim on the T2 11 multiple dimensions of self-concept, as well as the impact of the 11 multiple dimensions of self-concept measured at T1 on Bully and Victim factors measured at T2. It is interesting to note that the only statistically significant self-concept dimension at T1 that was positively correlated to bullying at T1 was Opposite-Sex Relations (.12). This is in line with current research suggesting that bullies have high/ moderate peer-related self-concepts (Opposite-Sex specifically found here). All other statistically significant cross-sectional correlations between T1 Bully and T1 Self-concept factors were negative (Same-Sex Relations = -.05; Parental

Relations = $-.17$; Honesty/ Trustworthiness = $-.45$; General Self-Esteem = $-.17$; Math = $-.09$; Verbal = $-.17$; School = $-.20$), indicating that bullying is at least most associated with initially low self-concepts in many domains, both academic and non-academic.

It was predicted that T1 Bullying would have positive effects on T2 peer-relations self-concept scales: Opposite-Sex and Same-Sex Relations. Although the

Figure 2: Standardised coefficients for Model 2 of T1 Bullying, Victimization contributing to 11 multiple Self-Concept factors at T2, as well as 11 multiple self-concept factors at T1 contributing to Bullying and Victimization at T2. * p < .05



paths were positive, they were not statistically significant. Furthermore, causal path analysis found T1 Bully statistically, significantly negative- rather than positive- effects on T2 Honesty/ Trustworthiness (-.09), School (-.05) and Parental Relations (-.04).

Overall, bullying was not shown to have significant positive effects on any later self-concepts. The largest negative effect of T1 bullying was on Honesty self-concept at T2, suggesting that those who bully admit they are in the wrong and may feel guilty as they appear to realise that their behaviour is inappropriate. Additionally, the negative perceptions of overall schooling ability at T2 accounted for by bullying at T1 may have more to do with a sense of belonging to the school rather than to more specific academic domains such as Math, and Verbal self-concepts which were not significantly negatively affected by bullying alone. The negative effects of Bully on parental relations indicated that students might realise that parents do not condone this type of behaviour, or that these students have been previously caught and the parents informed.

Being Victim at T1 had statistically significantly, negative effects on T2 peer-related self-concepts (Opposite-Sex Relations, -.03; Same-Sex Relations, -.11). Interestingly, and as expected, all other statistically significant effects of T1 Victim on T2 Self-concepts were negatively related as well: Parental Relations (-.04), Physical Appearance (-.04) and General Self-Esteem (-.05).

The largest effect of victimisation at T1 was on the resultant negative T2 Same-Sex Relations self-concept, greater than that of T2 Opposite-Sex Relations. The high contribution of victimisation to later perceptions of abomination by same-sex peers is likely to be related to it being same-sex peers who bully them. Furthermore, the direct significant negative effects of victimisation on later General Self-Esteem suggests victimisation causes feelings of unworthiness and failure in some students. This runs in accordance with the Marsh et al. (2001) study and other studies that illustrate the depressive effects of being victimised. The further link between the significant negative impact of victimisation on later perceptions of physical attractiveness is unclear. A potential explanation includes that some victims may think they are not good looking because the students who are bullying them, call them nasty names which infer that they are ugly. Nevertheless, these negative self-concepts are highly likely to be interlinked (Jones, & Berglas, 1978) and involve a vicious cycle whereby negative parental, general self-esteem and physical appearance self-concepts coincide and reinforce each other.

No a priori predictions were offered in relation to T1 psychological self-concept contributions to later bullying and victimisation. However, exploration into the characteristics that are more likely to directly effect bullying and victimisation are important research questions.

Results show that lower levels of Honesty/ Trustworthiness (-.08) and Parental Relations (-.06) at T1, both contributed statistically significantly to higher levels of later bullying at T2. In contrast, Physical Ability (.05) and Emotional Stability (.05) at T1 contributed positively and significantly to later bullying behaviours at T2. These results indicate that lower honesty and lower parental relations independently lead to higher subsequent use of bullying. Higher physical ability and emotional stability (lower anxiety) independently also lead to a greater use of bullying. This demonstrated that a high perception of one's honesty could act somewhat as a buffer to becoming a bully at a later point in time. Similarly, a person who perceives positive relations with their parents may be less likely to use bullying as a means of acquiring personal needs. A higher than mean perception that one has good sporting ability and that one is without much worry, both contribute significantly to later using bullying in peer interactions.

Emotional instability, as opposed to emotional stability was found to contribute to becoming a victim (-.05). This was the only significant T1 factor found to contribute to being victimised at T2, and this contributed negatively, revealing that higher earlier anxiety levels may lead to

greater victimisation at T2 (measured here after four months). It was important to note that findings suggest, having higher emotional stability (less anxiety) may lead to higher subsequent bullying, yet having lower emotional stability (higher anxiety) may lead to a higher chance of being victimised later.

The methodological contribution (use of path analysis with longitudinal data) is a potentially important contribution. A shift from the typical focus on cross-sectional results to longitudinal analysis of causal relations between these variables is vital to the further understanding of what psychological factors lead to and affect bullying and victimisation behaviour.

General Discussion

The hypothesised mutually reinforcing nature of bullying and victimisation over time was supported by findings that indicate initial bullying independently led to later victimisation, and initial victimisation led to subsequent bullying. Furthermore, the use of bullying at one time was shown to lead to further increased use of bullying while initial victimisation was also shown to lead to further victimisation at a later time.

In contrast to most bully/victim research where the use of dichotomies is still prevalent, current standards of psychological research dictate that dichotomies are typically inappropriate for both empirical and substantive reasons (MacCallum, et.al., 2002). While the use of dichotomous variables does lead to some understandings of the perceptions frequent bullies hold, it does not reflect what changes in self-concepts lead an individual to use or increase their use of bullying, or what leads individuals to become victimised. Additionally, dichotomisation does not indicate whether increased bullying leads to any resultant changes in self-concept or how later self-concept is directly affected by being victimised. These research questions were addressed in the present investigation.

Although the hypothesis that one of the most fundamental motivations for bullying is as a way of self-enhancement in peer-related (Opposite-Sex, Same-Sex Relations) and General Self self-concepts was not thoroughly supported in the present study, this does not indicate that the motivation to get along better with peers does not exist. While the present study found opposing results to the Marsh et al. (2000) study where T1 bullying led to positive and significant path coefficients to T2 Opposite-Sex self-concept, findings of the present study instead found that T1 bullying did not significantly contribute to later increases in Opposite-Sex or Same-Sex self-concepts, although the paths were in the hypothesised direction (positive). Even if the motivation to increase likeability exists, the resultant actual use of bullying was not found to result in higher self-perceptions of peer-relations. Although the perception to look cool, or to acquire higher status may be a very real motivation, the resultant increase in peer-related self-concepts may not take place for many students after bullying occurs. Possibly, students may use bullying to increase their Opposite-Sex and Same-Sex self-concepts but do not result in the increases expected because they may not receive the positive reinforcement they expected to get from their peers. This may be reflective of the time period differences between the present study and that of Marsh and colleagues. Because the present study was conducted in the 21st century, where awareness of bullying and victimisation in schools have increased since 1988 (the time at which the Marsh et al. data were collected) with the increase in studies on bullying in the 1990s (e.g. Crick, & Grotpeter, 1995; Rigby, 2001; Salmivalli, 2001), students may not be receiving the reinforcement expected due to the changes in social ethos between 1988 and 2002. Furthermore, students may have received punishment rather than positive reinforcement for their behaviours because other students do not believe they had the status to take on such

power-related positions, particularly if the resultant bullying failed to put the person being victimised in a submissive position.

The later T2 School, Honesty/ Trustworthiness and Parental Relations were significantly negatively affected by the use of bullying at T1. Particularly the Honesty/ Trustworthiness effect suggests that students who increase bullying realise they are doing the wrong thing and perceive themselves to lie more often- maybe as a way of protecting themselves from getting into trouble for bullying. With the increased awareness in bullying among schools, more students may have received punishment for such behaviour, where more parent involvement may have been necessary, which may also be the cause for the negative schooling (as schooling reflects a sense of belonging to the school) and negative parental (who may further punish the individual) self-concepts.

Conversely, for those who are subjected to attacks by their peers, findings indicate these students had resultant lowered self-concepts in the domains of Parental Relations, Opposite-Sex Relations, Physical Appearance, General Self and particularly Same-Sex Relations after being victimised. It is probable these negative effects are interlinked and reinforce each other, causing a vicious cycle of victimisation often discussed in literature (e.g. Galinsky, & Salmond, 2002; Jones, & Berglas, 1978). These negative contributions of victimisation to self-concept are not surprising in light of research that has indirectly found negative relations to being bullied with such outcomes as depression (Hawker, & Boulton, 2000; Kaltiala-Heino, et al., 1999). Moreover, because people acquire their self-concepts with interactions through others, if someone is continually harassed it is highly likely that internalisation of this harassment may lead them to believe they are worthless and failures. Nevertheless, findings clearly show that being victimised had only significant negative effects on later self-concept domains. While the present study could offer only tentative reasons for these findings, further research and clarification into the impact of bullying and victimisation on resultant self-concept factors are needed. Reasons behind bullying may supply researchers with clearer understandings of the motivations for students contemplating bullying to acquire some means, whether they are social, power-related or otherwise, and have important implications for intervention programs that aim to decrease bullying in schools, as well as the potential to shift research into new directions.

Not only is it important to further understand how bullying and victimisation directly affect later self-concept, but the exploration of self-concept dimensions that lead to increased bullying and victimisation are also important as bi-directional influences in bullying, victimisation and self-concept are likely to take place. No a priori predictions were offered, however, findings indicated that lower perceptions of Honesty/ Trustworthiness, Parental Relations, and higher perceptions of Physical Ability and Emotional Stability at T1, each, independently contributed to higher levels of subsequent bullying. Results indicate that a high perception of one's honesty and parental-relations can become somewhat of a buffer to becoming a bully at a later point in time (measured in the present study after four months). Furthermore, lower perceptions of one's sporting ability and enjoyment, as well as lower perceptions of emotional stability (higher self-perceptions of anxiety) may lessen the chance of becoming a bully. Interestingly where initial emotional stability was shown to lead to later increased use of bullying, the converse was found for victims. It was emotional instability, as opposed to emotional stability, that contributed to individuals becoming victimised. This is the only significant T1 factor found to contribute to being victimised at T2, and this contributed negatively, revealing that higher earlier anxiety levels led to greater victimisation at T2 (measured here after four months). This finding is important and runs in accordance with Rigby's (cited in Walker, 2002) and Sutton, Smith, and Swettenhams' (1999) theory that people who bully have mastered the art of social manipulation. A student who had increased bullying was found to have a lack of anxiety compared to other students and their skill in

observing other people's motives and weaknesses (Walker, 2002) allows them to seek out vulnerable targets (who, as found in the present study were highly anxious four months prior to becoming victimised). Findings here suggest bullies may be able to sense that certain individuals are highly anxious and sense that retaliation will be minimal as the victim, being more emotionally unstable, will be unable to stand up for themselves.

The Study 1 hypothesis regarding the CFA and reliability checks resulted in strong psychometric support for the shortened 51-item SDQII-S and the 18-item APRI-B and -T subscales. Particularly the support for the Bully and Victim measure is a potentially important contribution to an area of research where measurement instruments are typically psychometrically weak.

The main hypothesis in Study 2 that females would use significantly more relational bullying than males was not supported. Results revealed that males use significantly more of all types of bullying (including relational) than females. However, also found was a gradual (but non-significant) increase in relational bullying for females whereas a decline in relational bullying for males between Year 7 and 11, where the mean female relational bullying score exceeded that of males in Year 11. Future studies would benefit from using greater number of older male and female participants to test whether this developmental trend continues past year 11. It may be a limitation of self-report bias in the present study that resulted in the non-significant findings for female use of relational bullying. Relational bullying being a difficult type of aggression to measure, that is often hidden, suggests the measurement of bullying may need to be complemented by peer or teacher-related assessments (Juvonen, Nishina, & Graham, 2001) as has been done in previous studies (e.g. Björkqvist, et al., 1992).

In exploring the research question regarding the developmental patterns of different types of bullying and victimisation, although theory suggests that physical bullying decreases with age (Kaukiainen, et al., 1999), the present study did not support this. Rather physical and verbal bullying increased from Year 7 to Year 8 and stabilised from Year 8 onwards for both males and females. Instead it was victimisation (Physical and Relational, not Verbal) that was found to decrease for both males and females. The decrease in victimisation and non-significant decrease in bullying after Year 8 could be a reflection of response bias where participants do not want to be perceived as being victims when they become older. Alternatively, as students progress through school they may attribute certain bullying behaviours as being part of the school norm and become less likely to identify them as bullying. Findings by Lagerspetz et al. (1982) that show victims tend to be physically weaker would suggest a more valid explanation would be that because students are getting older, they are also getting physically bigger (many students experience large growth spurts between year 8 and year 9), due to the realistically higher chances of retaliation on the part of the victim, makes older and bigger students less appealing targets for those who bully and therefore subsequent victimisation decreases with age, whereas bullying remains the same because those who bully are able to seek out new vulnerable targets.

Year 7 students were generally the least involved in bullying dyads as either bully or victim. Because the present study (Study 2) was conducted at the beginning of the school year (March), the low involvement of Year 7 students in bullying may be a reflection of them being the 'new kids on the block' who have not yet learnt the social ethos of the school. Alternatively, Year 8 and 9 students were frequently involved as the bully whereas, in support of previous suggestions (i.e. Healey, 2001), the present study found Year 8 students were the most frequently victimised. In light of the possible explanations for Year 7 students being less involved, the high bullying behaviour of Year 8 and 9 students may be related to them establishing their place in the school social hierarchy as they have already become familiar with high-school culture and hierarchy. Furthermore, with the previous results (Study 3) of the causal relations between bullying and victimisation that found initial

victimisation led to later bullying behaviour, the high Year 9 involvement in bullying may be due to students reacting against being highly victimised during Year 8.

Additionally, there was no significant decrease in verbal bullying or victimisation, which may be a result of verbal bullying being a more acceptable form of bullying. This indicates, perhaps, that peers were more likely to receive enjoyment from verbal bullying because it is quick and perceived as a less threatening type of bullying, often being dismissed by perpetrators and bystanders as 'just mucking around', where the resultant real harm of humiliation on the part of the victim often goes unnoticed. Conversely, this finding could reveal a potential flaw in the instrument where the measure may be tapping into teasing qualities rather than bullying. The two forms of aggression can be easily confused (see Parada, 2002a for a comprehensive explanation of the differences between teasing and bullying behaviours). Nevertheless, the first explanation seems more plausible.

A number of implications for both future research and intervention programs are evident from findings of the present study. While the present study offered initial exploration into the causal relations between bullying, victimisation and self-concept, future research could further explore these longitudinal (greater than four months) causal relations. Research should aim to intervene at all levels, seeking prevention through understanding causes.

Rather than viewing frequent bullies and frequent victims as separate groups of individuals that may lead to punishment of the bully during intervention studies, Rigby (Walker, 2002) suggests research should use the skills of the person who bullies and redirect their behaviours into more prosocial areas (e.g. teach students further leadership skills that will help them excel in their future career or something they can look forward to). This would decrease the negative stigma and stereotyping attached to bullying and victimisation that lock individuals into certain participant roles. Furthermore, better understanding of reasons for bullying and victimisation could aid intervention programs by teaching students about possible motivations and outcomes of bullying, preventing some students from using these behaviours. Parada (2002b) further suggests that maybe some bullies just do not know how to interact with their peers and wrongly believe bullying as a valuable technique for acquiring higher status in their peer group. Thus, specific social skills training could be taught as a way for all students to acquire more positive interactions and subsequent decreases in bullying behaviours. Although it is still ambiguous what causal relations exist between bullying, victimisation and self-concept, the present study offers important implications to intervention programs and further research. By understanding further the causes of bullying and victimisation, and teaching students and teachers about these possible causes to bullying and victimisation, as well as how bullying and victimisation affect self-perceptions, critical advantages such as the possibility of preventing bullying and victimisation in some students are important and warrant further investigation.

References

- Atlas, R. S., & Pepler, D. J. (1998). Observations of bullying in the classroom. *The Journal of Educational Research*, 92(2), 86-99.
- Bernstein, J. Y., & Watson, M. W. (1997). Children who are targets of bullying: a victim pattern. *Journal of Interpersonal Violence*, 12(4), 483-499.
- Björkqvist, K., Lagerspetz, K. M. J., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? Developmental trends in regard to direct and indirect aggression. *Aggressive Behavior*, 18, 117-127.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development*, 66(3), pp710-722.
- Crick, N. R., Nelson, D. A., Morales, J. R., Cullerton-Sen, C., Casas, J. F., & Hickman, S. E. (2001). Relational victimisation in childhood and adolescence: I hurt you through the grapevine. In J. Juvonen, A. Nishina, & S. Graham (Eds.), *Peer harassment in school: the plight of the vulnerable and victimized* (pp. 196-214). New York: Guilford.
- Deater-Deckard, K. (2001). Annotation: recent research examining the role of peer relationships in the development of psychopathology. *Journal of Child Psychology and Psychiatry*, 42(5), 565-579.
- Eron, L. D., Huesmann, R. L., Dubow, E., Romanoff, R., & Yarmel, P. W. (1987). *Childhood aggression and its correlates over 22 years*. Childhood Aggression and Violence. New York: Plenum.
- Galinsky, E., & Salmond, K. (2002). Ask the children youth and violence: students speak out for a more civil society. The ask the children series. The Colorado Trust, Families and Work Institute, <http://www.familiesandwork.org/summary/yandv.pdf>
- Hawker, D. S. J., & Boulton, M. J. (2000). Twenty years' research on peer victimisation and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry*, 41(4), 441-445.
- Healey, J. (2001). *Bullying and Youth Violence*. *Issues in society*, v. 154
- Hills, A. M. (2002). Foolproof guide to statistics using SPSS. {On-line}. World Wide Web: <http://www.uws.edu.au/learn/psychology/hills/statistics.htm>
- Hinkley, J. W., Marsh, H. W., Craven, R. G., McInerney, D. M., & Parada, R. (2002). Social Identity and Navajo high school students: is a strong social identity important in the school social context? In W. J. Lonner, D. L. Dinnel, S. A. Hayes, & D. N. Sattler (Eds.), *Online Readings in Psychology and Culture* (Unit 3, Chapter 5), (<http://www.wvu.edu/~culture>), Center for Cross-Cultural Research, Western Washington University, Bellingham, Washington USA.

Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. *Personality and Social Psychology Bulletin*, 4, 200-206.

Juvonen, J., Nishina, A., & Graham, S. (2001). Self views vs. peer perception of victim status among early adolescents. In J. Juvonen, A. Nishina, & S. Graham (Eds.), *Peer harassment in school: the plight of the vulnerable and victimized* (pp. 105-124). New York: Guilford.

Kaltiala-Heino, R., Rimpela, M., Marttunen, M., Rimpela, A., & Rantanen, P. (1999). Bullying, depression, and suicidal ideation in Finnish adolescents: school survey. *British Medical Journal*, 319, 348-351.

Kaukiainen, A., Björkqvist, K., Lagerspetz, K. M. J., Österman, K., Salmivalli, C., Rothberg, S., & Ahlbom, A. (1999). The relationships between social intelligence, empathy, and three types of aggression. *Aggressive Behavior*, 25(2), 81-89.

Kumpulainen, K., Räsänen, E., & Henttonen, I. (1999). Children involved in bullying: psychological disturbance and the persistence of the involvement. *Child Abuse and Neglect*, 23(12), 1253-1262. (Aggressive troublemaking behaviours are stable over time)

Lagerspetz, K. M. J., Björkqvist, K., Berts, M., & King, E. (1982). Group aggression among school children in three schools. *Scandinavian Journal of Psychology*, 23, 45-52.

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological methods*, 7(1), 19-40.

Marsh, H. W. (1988). *Self Description Questionnaire: A theoretical and empirical basis for the measurement of multiple dimensions of preadolescent self-concept: A test manual and a research monograph*. San Antonio, TX: The Psychological Corporation. (Republished in 1992, Publication Unit, SELF Research Centre, University of Western Sydney.)

Marsh, H. W. (2000) *Self Description Questionnaire (SDQ) II- Short: A theoretical and empirical basis for the Measurement of multiple dimensions of adolescent self-concept: An interim test manual and a research monograph*. Publication Unit, Self-concept Enhancement and Learning Facilitation (SELF) Research Centre, University of Western Sydney.

Marsh, H. W., Parada, R. H., Yeung, A. S. & Healey, J. (2001). Aggressive School Troublemakers and Victims: A Longitudinal Model Examining the Pivotal Role of Self-concept. *Journal of Educational Psychology*, 93(2), 411-419.

Olweus, D. (1993a). Bully/ victim problems among schoolchildren: Long-term consequences and an effective intervention program. In S. Hodgins (Ed.), *Mental disorder and crime* (pp. 317-349). Newbury Park, CA: Sage.

Parada, R. (2002a). *Beyond Bullying Secondary Schools Program: Consultant's handbook*. Publication Unit, Self-concept Enhancement and Learning Facilitation (SELF) Research Centre, University of Western Sydney.

Parada, R. (Producer; 2002b). *Beyond Bullying Secondary Schools Program: On the couch* [Student Resource Video]. Publication Unit, Self-concept Enhancement and Learning Facilitation (SELF) Research Centre, University of Western Sydney.

Parada, R. (2000). *Adolescent Peer Relations Instrument: A theoretical and empirical basis for the measurement of participant roles in bullying and victimisation of adolescence: An interim test manual and a research monograph: A test manual*. Publication Unit, Self-concept Enhancement and Learning Facilitation (SELF) Research Centre, University of Western Sydney.

Rigby, K. (2001). *Stop the bullying: a handbook for schools*. Camberwell: Australian Council for Educational Research.

Rigby, K., Cox, L. (1996). The contribution of bullying at school and low self-esteem to acts of delinquency among Australian teenagers. *Personality and Individual Differences*, 21(4), 609-612.

Rigby, K., & Slee, P. T. (1999). Suicidal ideation among adolescent school children, involvement in bully-victim problems, and perceived social support. *Suicide and Life-Threatening Behavior*, 29(2), 119-130.

Salmivalli, C. (2001). Feeling good about oneself, being bad to others? Remarks on self-esteem, hostility, and aggressive behavior. *Aggression and Violent Behavior*, 6, 375-393.

Salmivalli, C., Kaukiainen, A., & Lagerspetz, K. M. J. (1998). Aggression in the social relations of school-aged girls and boys. In P. Slee & K. Rigby (Eds.), *Children's Peer Relations* (pp. 60-75). London: Routledge.

Salmivalli, C., Kaukiainen, A., & Lagerspetz, K. M. J. (2000). Aggression and sociometric status among peers: do gender and type of aggression matter? *Scandinavian Journal of Psychology*, 41(1), 17-24.

Salmivalli, C., Lagerspetz, K. M. J., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: participant roles and their relations to social status within the group. *Aggressive Behavior*, 22, 1-15.

Schuster, B. (1996). Rejection, exclusion and harassment at work and in schools: an integration of results from research on mobbing, bullying, and peer rejection. *European Psychologist*, 1(4), 293-317.

Sutton, J., Smith, P. K., & Swettenham, J. (1999). Bullying and 'theory of mind': a critique of the 'social skills deficit' view of anti-social behaviour. *Social Development*, 8(1), 117-127.

Tomada, G., & Schneider, B. H. (1997). Relational aggression, gender, and peer acceptance: invariance across culture, stability over time, and concordance among informants. *Developmental Psychology*, 33, pp601-609.

Walker, F. (2002). Schoolyard bullies eyed off as leaders of the future. (2002, October 13). *The Sun-Herald*, p.39.