

Adolescents' experiences of victimisation: The role of attribution style and generalised trust

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### Abstract

Positive attribution style, negative attribution style, and generalised peer trust beliefs were examined as mediators in the relationship between adolescents' peer victimisation experiences and psychosocial and school adjustment. Two hundred and eighty (150 female and 130 males,  $M_{age} = 13$  years 4 months,  $SD_{age} = 1$  year 1 month) adolescents completed measures of peer victimisation, global self-worth, depressive symptoms, social confidence, school liking, loneliness, attribution styles, and generalised trust beliefs. Multigroup path analysis revealed that: (a) negative attribution style mediated the relationship between cyber victimisation and school liking and depressive symptoms for males and females; (b) positive attribution style mediated the relationship between cyber victimisation, school liking, global self-worth, and depressive symptoms for females; and (c) generalised peer trust beliefs mediated the relationship between social victimisation, depressive symptoms, social confidence, and loneliness for females. Consequently, attribution style and generalised trust beliefs differentially influence the relationship between peer victimisation and adjustment.

*Key words:* victimisation, school adjustment, psychosocial adjustment, trust, attribution style

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Persistent and high levels of peer victimisation are associated with higher levels of depressive symptoms (e.g., Troop-Gordon, Rudolph, Sugimura, & Little, 2014), anxiety (e.g., Singh & Bussey, 2011), and loneliness (e.g., Jackson & Cohen, 2012), and reduced social relationship quality (e.g., Bagwell & Schmidt, 2011) and school adjustment (e.g., Espinoza, Gonales, & Fuligni, 2013). The growing wealth of evidence that victimisation is associated with, and predictive of, a range of psychosocial adjustment indicators has prompted some researchers to argue that experiencing peer victimisation should be regarded as a public health concern (Graham, 2006).

Face-to-face peer victimisation can take many forms including: Physical, social, attacks on property, and verbal and the reported prevalence rates of these experiences vary within the same sample (Fekkes, Pijpers, & Verloove-Vanhorick, 2005). The different forms of peer victimisation have been found to be associated with different psychosocial adjustment outcomes (Berger, 2007; Hawker & Boulton, 2000). For example, physical peer victimisation predicted greater negative cognitions and fewer positive cognitions over a year whereas relational peer victimisation predicted changes in depressive cognitions in third- to sixth-grade children (Sinclair et al., 2012). Further, Zhang et al. (2009) reported that experiencing physical peer victimisation predicted higher levels of social anxiety for girls whereas experiencing relational peer victimisation predicted higher levels of social anxiety for girls and boys in a sample of Chinese middle school children. Also, experiencing physical peer victimisation at the age of 9 was associated with greater peer rejection and externalising behaviour whereas experiencing relational peer victimisation at the age of 11 was associated with greater peer rejection and internalizing behaviour in children from China (Ji, Chen, Xu, Zhao, & Zhang, 2011). Similar variations according to whether the peer victimisation was direct or indirect with regards to aspects of adjustment have also been

identified (Baldry, 2004). Whilst many studies have examined global experiences of peer victimisation, recent research that adopted a person centred rather than variable centred analytical strategy found evidence that adolescents' experiences of peer victimisation varied according to type (Berkowitz, de Pedro, & Gilreath, 2015; Wang, Iannotti, Luk, & Nansel, 2010). Together these studies provide empirical evidence that it is necessary to examine the correlates of peer victimisation according to type of victimisation, as differential results are likely. Further, from an educational practitioner's perspective, there is evidence that teachers perceive the seriousness of peer victimisation to vary according to type. Specifically, school counsellors rated physical and verbal peer victimisation as more serious than relational peer victimisation (Jacobsen & Bauman, 2007). Consequently, the present study extended previous research in the area of peer victimisation experiences by separately examining the association between adolescents' experiences of verbal victimisation, physical victimisation, social victimisation, and attacks on property and psychosocial and school adjustment.

In addition to the variation in the consequences of experiencing different forms of face-to-face peer victimisation, it is also important to acknowledge that adolescents' experiences of peer victimisation are changing with the increasing use of digital technology. Specifically, technology is now frequently used as a medium to victimise others (Betts & Houston, 2012; Dehue, Bolman, & Vollnick, 2008; Smith, 2009). Further, there is growing evidence that experiencing cyber victimisation is associated with psychosocial adjustment (Juvonen & Gross, 2008; Mustacchi, 2009; Smith, 2009), although there is little consensus surrounding cyber victimisation within the current literature (Baumen & Bellmore, 2015). Therefore, the current study also examined the association between adolescents' experiences of cyber victimisation and psychosocial and school adjustment.

A broad conceptualisation of psychosocial adjustment was adopted in the current study that included three indicators: Global self-worth, social confidence, and depressive symptoms

and two indicators of school adjustment: School liking and loneliness at school. A wealth of studies, across a range of samples, have reported consistent evidence of the relationship between experiencing peer victimisation and elevated depressive symptoms (e.g., Barchia & Bussey, 2010; Hawker & Boulton, 2000; Rudolph, Troop-Gordon, Hessel, & Schmidt, 2011; Stapinski, Araya, Heron, Montgomery, & Stallard, 2014) and reduced self-worth (e.g., Boulton, Smith, & Cowie, 2010; Hawker & Boulton, 2000) and confidence (e.g., Griffiths & Page, 2008). From an early age, experiencing peer victimisation has a negative influence on children's propensity to like school and exacerbates feelings of loneliness in the school environment (e.g., Kochenderfer & Ladd, 1996). Further in boys experiencing victimisation predicted lower levels of school liking over six months (Boulton, Chau, Whitehand, Amataya, & Murray, 2009) whilst early adolescents with lower levels of friendship support and who experienced victimisation reported lower levels of school liking (Erath, Flanagan, & Bierman, 2008). Experiencing higher levels of face-to-face peer victimisation and cyber victimisation were also associated with higher levels of loneliness at school in third- to sixth-grade children (Jackson & Cohen, 2012). Together, previous studies have reported associations between peer victimisation and global self-worth, social confidence, depressive symptoms, school liking, and loneliness, although the nature of the results varied according to the age of the sample and the instruments used.

Whilst many studies have sought to examine the correlates of peer victimisation, fewer studies have examined the potential mediators in the relationship between peer victimisation and psychosocial and school adjustment. Therefore, the present study addressed these issues. Examining the potential mediators in these relationships is appropriate because previous studies have reported that a proportion of the variance in the relationship between peer victimisation experiences and psychosocial adjustment remains unaccounted for, implicating other variables in the relationship (Barchia & Bussey, 2010). Further, for those adolescents

who experience peer victimisation the associated outcomes are not identical implicating the role of potential mediators. Consequently, the present study examined the role of three mediating variables in the relationship between adolescents' peer victimisation and psychosocial and school adjustment: Negative attribution style, positive attribution style, and generalised peer trust beliefs.

How an individual perceives, interprets, and explains an ambiguous behavioural situation is indicative of their attribution style. These interpretations can vary according to whether the attributions are internal pertaining directly to the actions of the individual or external concerning the environment (Graham & Juvonen, 1998). Further distinctions can be made with regard to the extent to which the cause of the action is regarded by the individual as: (a) stable such that it will remain constant and (b) controllable such that the individual perceives that they have the ability to control the situation (Graham & Juvonen, 1998). Applying attribution style to peer victimisation, Graham and Juvonen argue that when children attribute peer victimisation to something that is stable over time, controllable, and internal then they believe they are more likely to experience victimisation again. Conversely, if peer victimisation is attributed to something that is not stable and uncontrollable then they are more likely to believe that victimisation will not occur again. Together, these opposing perceptions regarding whether peer victimisation would occur subsequently may impact differently on adjustment; specifically, adopting an attributional style that regards victimisation as not stable and uncontrollable may buffer adolescents from the negative adjustment outcomes associated with peer victimisation.

Attribution style is also likely to mediate the relationship between peer victimisation and psychosocial and school adjustment because, according to the social information processing model (Crick, Grotpeter, & Rockhill, 1999), an individual's attributional style directly influences their interactions with their peers. For example, experiencing peer

victimisation may result in an individual interpreting their peers' social behaviour in a negative manner which, in turn, may result in a propensity for the individual to avoid peer interactions and, as such, influence adjustment. In support of this proposition, Chen and Graham (2012) reported that adopting a self-blame attribution style mediated the relationship between peer victimisation and loneliness and anxiety in 12<sup>th</sup> grade students. Similarly, adopting a self-blame attribution style (e.g., "If I were a cooler kid, I wouldn't get picked on") mediated the relationship between self-perceived peer victimisation and psychosocial adjustment in middle school children, whereas adopting an attribution style relating to specific behaviour (e.g., "I should have been more careful") did not mediate the relationship (Graham & Juvonen, 1998, p590). Further, self-blame attributions also mediated the relationship between peer victimisation and psychosocial adjustment but not between peer victimisation and school adjustment in sixth grade students (Graham, Bellmore, & Mize, 2006). Hostile attributions also partially mediated the relationship between peer victimisation and externalising problems in fifth to seventh grade students (Perren, Ettekal, & Ladd, 2013).

Although the previous research suggests that attribution styles mediate the relationship between peer victimisation and psychosocial and school adjustment, the different types of peer victimisation have yet to be examined in adolescents. Focusing on different types of peer victimisation is appropriate because there is evidence that attribution styles vary according to the type of peer victimisation experienced (e.g., Gibb & Abela, 2008; Hoglund & Leadbeater, 2007). For example, Gibb and Abela (2008) reported that experiencing verbal peer victimisation was associated with negative changes in inferential styles which, in turn, predicted depressive symptoms. Similarly, relational peer victimisation was associated with social cognitive processes assessed as attributions whereas physical peer victimisation was only associated with social perceptive awareness (Hoglund & Leadbeater, 2007). Hoglund and Leadbeater accounted for their findings because relational peer victimisation may

promote an individual to feel that their peers are conspiring against them and influence their attribution style whereas physical peer victimisation may be promote concerns over physical safety. Further, as Pornari and Wood (2010) suggest adopting a positive attribution style following experiencing peer victimisation may serve to rationalise the behaviour such that the behaviour is seen as less harmful than if a negative attribution style was adopted. Therefore, we predicted that adolescents' propensity to adopt positive and negative attribution styles would mediate the relationship between the different peer victimisation experiences and psychosocial and school adjustment. In particular, we expected attribution styles to mediate the relationship between social, verbal, and cyber victimisation which has been proposed as a form of social/relational victimisation (Mark & Ratliffe, 2011).

The importance of trust for psychosocial (e.g., Bernath & Feshbach, 1995; Rotenberg, Boulton, & Fox, 2005; Rotenberg, MacDonald, & King, 2004; Rotenberg, McDougall et al., 2004) and school adjustment (Betts & Rotenberg, 2007; Betts, Rotenberg, & Trueman, 2009; Rotenberg, Michalik, Eisenberg, & Betts, 2008) during childhood is widely acknowledged. Further, the development of a trusting orientation towards others is recognised as important for the maintenance and development of social relationships (Rotenberg, 2010). Trust beliefs range from generalised to specific (Rotenberg, 1994; Rotter, 1980). Generalised trust beliefs pertain to beliefs about an individual or group with which the truster has relatively little personal experience whereas specific trust beliefs relate to beliefs in an individual with whom the truster has had a considerable amount of experience with (Rotter, 1980).

Whilst there is evidence that adolescents' specific peer trust beliefs are associated with victimisation (Rotenberg, Boulton et al., 2005), the role of adolescents' generalised peer trust beliefs in the relationship between peer victimisation and psychosocial and school adjustment remains unclear. However, it has been argued that experiencing peer victimisation is likely to influence the development of generalised trust beliefs such that individuals who experience



persistent high levels of peer victimisation are likely to develop a less trusting orientation (Carney, Jacob, & Hazler, 2011). In support of this proposition, Carney et al. reported that sixth grade children who experienced peer victimisation less frequently, and who witnessed supportive interventions during a victimisation episode, had higher levels of generalised trust. Similarly, retrospective reports of experiencing peer victimisation during childhood were associated with lower levels of trust in friendships during early-adulthood, although no such relationship was identified between victimisation experiences during childhood and trust in romantic partner (Janzter, Hoover, & Narloch, 2006). Janzter et al. accounted for their findings by arguing that experiencing peer victimisation may influence an individual's general trusting orientation towards others but in the context a close relationship these effects are ameliorated. It is likely that experiencing victimisation influences adolescents' cognitive schema of who to trust and, as such, could influence social interactions and how the behaviour of interaction partners should be interpreted (see Betts et al., 2009; Harris, 2007; Rotenberg et al., 2005). Consequently, experiencing peer victimisation is likely to influence how adolescents view others in the social world and may promote a lower general trust orientation towards others (Janzter et al., 2006). This lower trust orientation is likely to impact negatively on their interactions with others which, in turn, may impact on psychosocial adjustment (Rotenberg, Boulton et al., 2005). Given the importance of generalised trust in social situations (Rotter, 1971), it is likely that generalised trust would be most influenced by social peer victimisation and cyber victimisation. However, because trust pervades all social experiences, it may be that any experiences of peer victimisation may impact on peer trust beliefs to some extent. Therefore, we predicted that adolescents' generalised peer trust beliefs would mediate the relationship between peer victimisation and psychosocial and school adjustment.

The role of sex as a potential moderator in the relationship between peer victimisation, attribution style, generalised peer trust beliefs, and psychosocial and school adjustment was also examined because previous studies have reported sex differences for these variables. For example, males aged 11- to 16-years-old scored significantly higher on physical victimisation and attacks on property whereas females scored significantly higher on social victimisation (Mynard & Joseph, 2000). More recent research has suggested that 12- to 17-year-old females were more likely to experience cyber victimisation in chat rooms and on social network sites whereas males were more likely to experience cyber victimisation when they had an active social network profile and shared films online (Mesch, 2009).

Sex differences have also been reported in the outcome variables examined in the present study. For example, some studies have found that females report higher levels of depressive symptoms (e.g., Angold et al., 2002; Hankin, Abramson, Silva, McGree, & Angell, 1998) whereas others indicate that males report having higher levels of depressive symptoms (e.g., Kovacs, 1992). With regard to loneliness, again some studies suggest that females report lower levels than males (e.g., Hoza, Bukowski, & Beery, 2000) whereas others suggest that males are more likely to experience loneliness (e.g., Galanaki, 2004; Renshaw & Brown, 2000). However, whilst the pattern of findings is mixed with regard to sex differences, a potential explanation advanced by Crick et al. (1999) to account for these sex differences is that males often under-report their experiences, especially with regard to loneliness.

The present research examined whether: (1) adolescents' experiences of peer victimisation predicted their psychosocial (assessed as global self-worth, depressive symptoms, and social confidence) and school adjustment (assessed as loneliness in school and school liking); (2) positive attribution styles, negative attribution styles, and generalised

peer trust beliefs mediated these relationships; and (3) sex differences emerged in these relationships using multigroup path analysis.

## Method

### Participants

Four hundred and 20 11- to 15-year-olds attending two urban secondary schools, from the same city in the East Midlands in the UK, were asked to participate in the study. The schools targeted specific classrooms based on their availability. From the sample invited to take part, 371 (191 girls and 180 boys  $M_{\text{age}} = 13$  years 4 months,  $SD_{\text{age}} = 1$  year 2 months) participants returned questionnaires. However, data from 91 participants was excluded because of large amounts of missing data yielding a final sample of 280 (150 female and 130 male,  $M_{\text{age}} = 13$  years 4 months,  $SD_{\text{age}} = 1$  year 1 month) adolescents. Therefore, the final response rate was 67%. The catchment areas where the schools recruited their pupils from served a range of socio-economic backgrounds according to their postcode data, although the percentage of young people entitled to free school meals were comparable to the national average of the UK. The sample was predominately white.

### Measures

**Peer victimisation.** The 20-item Multidimensional Peer-Victimisation Scale-Revised (MPVS-R, Betts, Houston, & Steer, 2015) assessed victimisation experiences across five subscales: Physical victimisation (e.g., “punched me”,  $\alpha_1 = .78$ ) social manipulation (“tried to turn my friends against me”,  $\alpha = .81$ ), verbal victimisation (e.g., “called me names”  $\alpha = .78$ ), attacks on property (e.g., “tried to break something of mine”,  $\alpha = .79$ ), and cyber victimisation (e.g., “Sent you a nasty text”,  $\alpha = .81$ ). The adolescents responded to the items using a three-point scale ranging from 1 (*Not at all*) to 3 (*More than once*) to denote the frequency with which they had experienced victimisation during the past year. The Multidimensional Peer-Victimisation scale (Mynard & Joseph’s, 2000) which the MPVS-R is

based on has appropriate convergent validity and the factor structure has been replicated in previous research (Balogun & Olapegba, 2007).

**Loneliness.** Four items derived from the Loneliness and Social Dissatisfaction Questionnaire (Asher, Hymel, & Renshaw, 1984) were used to assess the adolescents' experiences of loneliness in the general school environment using a 5-point scale ranging from 1 (*Not true at all*) to 5 (*Always true*). As the four items directly assessed loneliness at school they represented a measure of 'pure' loneliness and were used in the current study because there are only limited ways of asking an individual if they experience loneliness (Galanaki & Kalantzi-Azizi, 1999). Similar measures of 'pure' loneliness have been used previously with children and demonstrated appropriate psychometric properties (e.g., Betts & Stiller, 2014; Ladd & Coleman, 1997). The items (e.g., "I feel alone at school"), demonstrated good internal consistency ( $\alpha = .86$ )

**School liking.** The 11-item Liking for School Questionnaire (Ireson & Hallam, 2005) was used to assess the adolescents' attitudes toward school (3 items, e.g., "This is a good school"), happiness in school (2 items, e.g., "I am very happy when I am in school"), the value of school (5 items, e.g., "School work is worth doing"), and the relationship to school (1 item, e.g., "The school and I are like..."). The adolescents responded to the questions using a 5-point scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*) for items 1-9, a 4-point scale for question 10 ranging from 1 (*Very important*) to 4 (*Not important at all*), and a 5-point scale for question 11 ranging from 1 (*Good friends*) to 5 (*Enemies*). Questions were reverse scored and summed so high scores were indicative of high school liking. The scale had moderate internal consistency ( $\alpha = .78$ ) and the construct validity has been established in previous research (Ireson & Hallam, 2005).

**Social confidence.** The 17-item social confidence subscale from the Coping Resources Inventory Scales for Educational Enhancement (McCarthy, Seraphine, Mathney, & Curlette,

2000) was used to assess social confidence. Using a 5-point scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*) the adolescents reported the extent to which they felt able to disclose feelings to peers, behave independently, and be assertive in negotiating their needs (e.g., “I’m afraid to tell people what I think”). Items were reverse coded such that higher scores indicated greater levels of social confidence. The scale had good internal consistency ( $\alpha = .90$ ). Previous research has reported the reliability of the scale in a range of samples (Seraphine, McCarthy, & Curlette, 2001).

**Global self-worth.** The 7-item General Self-Worth subscale from Harter’s (1982) Perceived Competence Scale was used to assess the adolescents’ self-reported global self-worth via a 5-point scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*). Items were recoded such that high scores denoted greater self-reported self-esteem (e.g., “I am sure of myself”). The scale had good internal consistency ( $\alpha = .84$ ) and has been found to be reliable in previous studies with 13- to 16-year-olds (Eapen, Naqvi, & Al-Dhaheri, 2000).

**Depressive symptoms.** Birlleson’s (1981) Depression Self-Rating Scale (DSRS) was used to obtain self-reports regarding the participants depressive symptoms. Participants completed 24 items from the DSRS (excluding items 5 and 23 from the original scale) and adolescents were asked to respond according to the frequency with which the item applied to them using a three point scale ranging from 3 (*Never*), 2 (*Sometimes*), and 1 (*Most of the time*). Items were recoded such that higher scores were indicative of greater depressive symptoms (e.g., “All I can see ahead of me is unpleasantness rather than pleasantness”) and the scale had acceptable internal consistency ( $\alpha = .82$ ). The DSRS has been found to be associated with other measures of depressive symptoms in children at a non-clinical level (Asarnow & Carlson, 1985) and has demonstrated good split half reliability and test-retest reliability over two weeks (Verhulst & van der Ende, 2006).

**Attribution style.** The 24-item Children's Attributional Style Questionnaire Revised (CASQ-R; Kaslow & Nolen-Hoeksema, 1991) was used to assess the adolescents' explanations for positive and negative events. The scale contains 12 positive events and 12 negative events across the dimensions of internality, stability, gloability. The adolescents responded to the statements using a forced choice paradigm to indicate their attribution style. An example positive event is: "You get an 'A' on a test" and the participants had to select either "I am smart" or "I am good in the subject that the test was in". An example negative event is: "A team that you are on loses a game" and the participants had to select either "The team members don't help each other when they play together" or "That day the team members didn't help each other". The scale has demonstrated acceptable criterion-related validity, internal consistency, and test-retest reliability in previous research (Thompson, Kaslow, Weiss, & Nolen-Hoeskema, 1998).

**Generalised peer trust beliefs.** The six item peer trust beliefs subscale from the Children's Generalised Trust Beliefs scale (Rotenberg, Fox et al., 2005) was used to assess the adolescents' trust in the general group of peers across reliability, emotional trust, and honesty. Parallel versions of the scales were used such that the adolescents completed the scale with regard to same-sex peers (e.g., "Louisa says that she will share her chocolate bar with Claire at lunchtime. How likely is it that Louisa will share the chocolate bar with Claire?") using a five-point scale ranging from 1 (*Very likely*) to 5 (*Very unlikely*). Items were recoded such that high scores indicated greater generalised peer trust beliefs and as with the original subscale (see Rotenberg, Fox et al., 2005), there was modest internal consistency ( $\alpha = .62$ ). Previous research has reported that the generalised peer trust belief scale has appropriate test-retest reliability, is associated with other measures of specific trust beliefs, and has acceptable internal consistency (Rotenberg, Fox et al., 2005).

### **Procedure**

The questionnaires were administered to participants in class groups. The participants were asked to work independently to complete the questionnaire and were informed that it was not a test, that there were no right or wrong answers, and that their responses would remain confidential and anonymous.

The College of Business, Law, and Social Sciences research ethics committee at Nottingham Trent University provided approval for the research. Consent for the research was initially given by the head teachers of the participating schools. Letters were then sent to parents informing them of the study and asking them to contact the school if they did not want their son/daughter to participate. The students were given information about the study and were asked to give their assent before they received the study materials.

### **Results**

Multigroup path analysis, conducted using AMOS version 18, was used to examine the extent to which experiencing peer victimisation (assessed as: verbal, social, physical, attacks on property, and cyber) predicted psychosocial (assessed as: social confidence, global self-worth, and depressive symptoms) and school adjustment (assessed as: loneliness and school liking). Positive attribution style, negative attribution style, and peer trust beliefs were entered as separate mediators in these relationships between experiences of peer victimisation and psychosocial and school adjustment. The procedure outlined by Byrne (2001) was implemented to examine the role of sex as a moderator in the relationships which involved creating separate groups in the multigroup path analysis according to sex. Initially, all of the paths were constrained to be equal across both groups and then individually unconstrained to examine potential sex differences in strength using chi-square change.

The initial model with all direct paths and all paths between the predictor variables, mediator variables, and outcome variables was not an adequate fit of the data and, as such,

paths that were not significant in either group were removed based on their associated  $p$  value, in turn, and the fit statistics recalculated until all paths were significant in at least one of the models.

The final model was a good fit of the data, the data comparative fit index (CFI) = 1.00, goodness of fit index (GFI) = .97, root mean square error of approximation (RMSEA) = .014,  $\chi^2(50) = 52.55, p > .05$  (see Table 1). The CFI and GFI exceeded the recommended value of .90, the RMSEA was  $< .08$ , and the chi-square was not significant (Byrne, 2001; Schumacker & Lomax, 1996). Constraining all paths indicated that there were sex differences in path strength across the models,  $\Delta\chi^2(42) = 1866.97, p < .001$ .

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#### Direct paths between victimisation and adjustment

In males, direct paths occurred between experiencing attacks on property and depressive symptoms, social confidence, and loneliness. The path between attacks on property and social confidence were negative: More frequent attacks on property predicted lower social confidence scores, and this path was stronger in males than in females. The paths between attacks on property and loneliness and depressive symptoms were positive: More frequent attacks on property predicted higher levels of loneliness and depressive symptoms, and these paths were stronger in males than in females. There were also direct paths between verbal victimisation and self-worth, and loneliness: Experiencing higher levels of verbal victimisation predicted lower global self-worth and higher levels of loneliness, and these paths were stronger in males than in females.



In females, the only significant direct path was between verbal victimisation and global self-worth: Experiencing higher levels of verbal victimisation predicted lower levels of global self-worth.

#### Mediation analyses

For the requirements of mediation to be met it is necessary that the mediator variable is predicted by the predictor variable and that the mediator variable predicted the outcome variable (Baron & Kenny, 1986). The mediator variables of interest were negative attribution style, positive attribution style, and peer trust beliefs.

In males, cyber victimisation predicted negative attribution style: Experiencing higher levels of cyber victimisation predicted a stronger negative attribution style, and this path was stronger in males than in females. Also, for males, social victimisation predicted positive attribution style: Experiencing higher levels of social victimisation predicted lower positive attribution scores, and this path was stronger in males than in females. Finally, for males, social victimisation predicted peer trust beliefs at a trend level: Experiencing higher levels of social victimisation predicted lower peer trust beliefs.

In females, cyber victimisation predicted negative attribution style and positive attribution style: Experiencing higher levels of cyber victimisation predicted a higher negative attribution style score and a lower positive attribution style score. The path between cyber victimisation and positive attribution style was stronger in females than in males. Also, experiencing attacks on property negatively predicted positive attribution style: Experiencing more frequent attacks on property predicted a lower positive attribution style score, and this path was stronger in females than in males. Finally, social victimisation negatively predicted peer trust beliefs: Experiencing higher levels of social victimisation predicted lower peer trust beliefs, and this path was stronger in females than in males. Therefore, the first condition of

mediation was met for negative attribution style, positive attribution style, and peer trust beliefs for some of the experiences of victimisation.

*Negative attribution.* In males, negative attribution style fully mediated the relationship between cyber victimisation and school liking, Sobel's  $z = -2.03$ ,  $p < .05$ , and depressive symptoms, Sobel's  $z = -2.06$ ,  $p < .05$ : Experiencing higher levels of cyber victimisation predicted higher negative attribution style scores which, in turn, predicted lower school liking and higher levels of depressive symptoms. There was no further evidence of significant mediation in the relationship between victimisation experiences, school adjustment, and psychosocial adjustment in males.

In females, negative attribution style fully mediated the relationship between cyber victimisation and school liking, Sobel's  $z = -2.18$ ,  $p < .05$ , and depressive symptoms, Sobel's  $z = -2.19$ ,  $p < .05$ : Experiencing higher levels of cyber victimisation predicted higher negative attribution style scores which, in turn, predicted lower school liking and higher levels of depressive symptoms.

*Positive attribution.* In females, positive attribution style also mediated the relationship between cyber victimisation and school liking, Sobel's  $z = -2.08$ ,  $p < .05$ , global self-worth, Sobel's  $z = -2.20$ ,  $p < .05$ , and depressive symptoms, Sobel's  $z = 2.27$ ,  $p < .05$ : Experiencing higher levels of cyber victimisation predicted lower positive attribution style scores which in turn predicted lower school liking and global self-worth, and higher levels of depressive symptoms. The paths between positive attribution style scores and global self-worth, and depressive symptoms were stronger in females than in males. Positive attribution style also mediated the relationship between attacks on property and global self-worth in females but not males, Sobel's  $z = 2.00$ ,  $p < .05$ : Experiencing more frequent attacks on property predicted lower positive attribution scores which in turn predicted lower global self-worth.

*Peer trust beliefs.* In females, peer trust beliefs mediated the relationship between social victimisation and depressive symptoms, Sobel's  $z = -2.32, p < .05$ , social confidence, Sobel's  $z = -2.80, p < .05$ , and loneliness, Sobel's  $z = 2.85, p < .05$ : Experiencing higher levels of social victimisation predicted lower peer trust beliefs which in turn predicted lower social confidence and higher depressive symptoms and loneliness. The paths between peer trust beliefs and depressive symptoms and loneliness were stronger in females than in males.

### **Discussion**

Adolescents' experiences of peer victimisation predicted aspects of psychosocial adjustment, although the nature of these relationships varied according to the type of victimisation and the indicator of adjustment. Positive attribution style, negative attribution style, and peer trust beliefs mediated some of these relationships and there were also sex differences in relationship strength.

Direct paths emerged between attacks on property, depressive symptoms, social confidence, and loneliness and between verbal victimisation, self-worth and loneliness which are consistent with previous studies examining peer victimisation (e.g., Griffiths & Page, 2008; Hawker & Boulton, 2000). The absence of significant paths between all of the measures of peer victimisation and adjustment provides further support to the proposition that examining the different types of peer victimisation as distinct phenomena is justified. Specifically, as the correlates of peer victimisation vary according to type, this provides further empirical evidence that both adolescents' experiences of peer victimisation, and the consequences associated with peer victimisation experiences, vary as Wang et al. (2010) argue.

By treating the various types of peer victimisation as distinct constructs in the analyses, we were able to explore whether different types of relationship emerged according to experience. Adopting such an approach is important because whilst many adolescents

experience multiple forms of peer victimisation, the various forms of peer victimisation are characterised by different qualities (Gibb & Abela, 2008; Hoglund & Leadbeater, 2007). For example, in comparison to more traditional forms of face-to-face peer victimisation which typically are limited to the school environment, cyber victimisation can occur at any time (Slonje & Smith, 2008). Also, in episodes of face-to-face peer victimisation it is likely that the perpetrator is readily identifiable to the target whereas in cyber victimisation the perpetrator often remains anonymous (Beale & Hall, 2007). Therefore, these inherent qualities of cyber victimisation may account for why the relationships among cyber victimisation, school liking, and depressive symptoms were mediated by negative attribution style (in males and females) and positive attribution style (in females).

As expected negative attribution style mediated the relationship between cyber victimisation and school liking and depressive symptoms in both males and females. Adolescents experiencing higher levels of cyber victimisation had higher levels of negative attribution and this, in turn, predicted lower school liking and higher levels of depressive symptoms. Also, in females positive attribution style mediated the relationship between cyber victimisation and school liking, global self-worth, and depressive symptoms. Experiencing greater levels of cyber victimisation predicted lower positive attribution style scores which, in turn, predicted lower school liking and global self-worth and higher levels of depressive symptoms. Positive attribution style also mediated the relationship between experiencing attacks on property and global self-worth in females such that experiencing more frequent attacks on property predicted lower positive attribution scores which in turn predicted lower global self-worth. Together these findings indicate that the underlying attribution process that adolescents adopt when they encounter peer victimisation can influence their psychosocial wellbeing, especially for females. A theoretical explanation for these findings resides in the social information processing model (Crick et al., 1999) which suggests that

how individuals interpret the intentions and behaviours of others influences how they respond in social situations.

Utilising a positive attribution style and avoiding a negative attribution style following an episode of peer victimisation may enable an adolescent to rationalise the behaviour they have experienced such that is interpreted as less harmful (Pornari & Wood, 2010) and, this in turn, impacts on their adjustment. This may be particularly pertinent for females who experience cyber victimisation and attacks on property because rationalising their experience as less harmful may mean that they continue to engage in the cyber world and worry less about their property. Previous research undertaken with teachers has identified the fear of experiencing cyber victimisation rather than the actual content of the cyber victimisation episode to have more of an impact on young people (Betts & Spenser, in press). Similarly, worrying about property may change adolescents' behavioural patterns and make it less likely that they engage in social situations which may impact on their adjustment akin to a fear of crime (De Groof, 2008). Consequently, an attribution style that enables adolescents to interpret the peer victimisation episode as less harmful is likely to have less of an effect on their adjustment. Therefore, an adolescent who adopts a negative attribution style is more likely to view peer aggression in a negative, personal way and, as such, this may have a greater impact on their wellbeing than an adolescent who adopts a positive attribution style.

The findings suggest that interventions developed to reduce peer victimisation should, to some extent, focus on the attributions that individuals make when they encounter victimisation similar to positive psychology approach advocated by Richards, Rivers, and Akhurst (2008) which focused on the strengths of individuals. Moreover, using the social-information processing model (Crick et al., 1999) as a theoretical framework, adolescents could be taught to reappraise the situation using more positive strategies. Further, Hunter and

Boyle (2004) found evidence that variation in children's appraisals of peer victimisation influenced their selection of an appropriate coping strategy.

Generalised peer trust beliefs also served as a mediator in some of the relationships between peer victimisation experiences and psychosocial adjustment for females. Specifically, as expected, peer trust beliefs mediated the relationship between social victimisation and depressive symptoms, social confidence, and loneliness with higher levels of social victimisation predicting lower peer trust beliefs which in turn predicted lower social confidence and higher levels of depressive symptoms and loneliness. Although this finding is consistent with the results of Rotenberg, Boulton et al. (2005), the present research has demonstrated that adolescents' general trusting orientation towards peers is also influential for their psychosocial adjustment in the context of peer victimisation. One potential explanation for this relationship is that experiencing social victimisation in particular may adversely influence how adolescents view others in the social world and, as such, they may come to develop a low general trusting orientation towards others (Janzer et al., 2006). Having a low general trusting orientation likely influences the nature of social relationships that the adolescents engage in and consequently negatively impacts on their psychosocial adjustment. In support of this proposition, Rotenberg, Boulton et al. (2005) argued that children with very low trust adopt a cynical orientation with regard to their peers when interacting with them. Further, these children with very low trust beliefs were at greatest risk of peer rejection and internalised maladjustment compared to children with modest or high trust beliefs (Rotenberg, Boulton et al., 2005). Similarly, young children with very low generalised trust beliefs have fewer friends than those with very high or mid-range trust beliefs (Betts et al., 2009). Therefore, the findings of the current study add further evidence to the claim that individuals develop cognitive schemas of trust which influence social interactions (Betts et al., 2009; Harris, 2007; Rotenberg, Boulton et al., 2005). The lack of

association between the other forms of peer victimisation and generalised trust beliefs also underscores that trust is a social phenomenon that impacts on interpersonal relationships (Rotter, 1971). Consequently, when adolescents experience social peer victimisation this is likely to be a direct attack compared to the other forms of victimisation on their interpersonal relationships and, as such, undermine their trust in others. The lack of association between cyber victimisation experiences and trust may reflect the multifaceted nature of cyber victimisation which according to Vandebosch and van Cleemput (2009) can be regarded as physical, verbal, non-verbal, and social.

The sex differences in the nature of the relationship between peer victimisation experiences and psychosocial adjustment reflect the tendency for males to experience more physical forms of victimisation and for females to experience more social forms of victimisation that have been reported in the previous research (Maynard & Joseph, 2000). Specifically, males who experienced more frequent attacks on property have lower social confidence and higher loneliness and depressive symptoms and these paths were stronger than the comparable paths for females. Also, males who experienced greater levels of verbal victimisation also had lower self-worth and higher loneliness and these paths were stronger than the comparable paths for females. One explanation for the reported sex differences resides in the sex differences in peer relationship qualities. Specifically, males tend to interact with a larger social network characterised by less intimacy than females (Erwin, 1995; Rose & Rudolph, 2006) which may mean that males are less able to turn to peers when they encounter peer victimisation for support and, as such, peer victimisation may have a greater impact on their psychosocial adjustment. Alternatively, the sex differences identified in the current study could be accounted for by the tendency for males to under-report certain experiences when asked to reflect on their wellbeing compared to females (Crick et al., 1999).

The sex differences identified in the current study also have implications for interventions designed to ameliorate the effects of experiencing peer victimisation. Specifically, developing targeted interventions according to sex and peer victimisation experience may increase the effectiveness of interventions. A more targeted approach would also help to overcome some of the challenges associated with anti-bullying interventions such as enhancing the effect size associated with the interventions which tend to be modest at best (Merrell, Gueldner, Ross, & Isava, 2008).

Whilst the present study utilised a broad conceptualisation of peer victimisation to include cyber victimisation, one of the limitations of the current study is that it is cross-sectional in nature and many of the effect sizes were small. Consequently, the study should be replicated using a longitudinal design to fully explore the direction of causality. The current research also used self-report measures for all of the variables of interest; consequently, there was common method variance (Lindell & Whitney, 2001). However, using self-report methods is appropriate for the age of the sample because it has been argued that such methods are the only way to truly capture adolescents' experiences (Smith, 2004). A further limitation of the study is that we did not examine the role individuals fulfil within the peer victimisation experience. Specifically, there is evidence that often individuals who experience peer victimisation also engage in bullying behaviours and that this may uniquely contribute to their psychosocial adjustment (Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996; Mason, 2008). Therefore, future studies should further explore the roles and consider how they impact on psychosocial adjustment.

In summary, the present research found evidence that adolescents' experiences of peer victimisation were predictive of their psychosocial and school adjustment and that attribution style and generalised trust beliefs mediated these relationships.



**Footnote**

1 The alpha values presented throughout the method pertain to the current sample, unless otherwise indicated

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Table 1

*Beta values, unstandardised beta values, and standard error for paths according to gender, with  $\Delta \chi$  as test of gender differences for significant direct paths*

	Male			Female			$\Delta \chi$
	$\beta$	B	SE	$\beta$	B	SE	
Direct paths							
Attack on property → Depressive symptoms	.18**	.51	.19	-.03	-.11	.24	11.46***
Attack on property → Social confidence	-.29***	-1.48	.41	-.00	-.03	.53	46.45***
Attack on property → Loneliness	.30***	.43	.11	.08	.14	.14	32.97***
Verbal victimisation → Self-worth	-.25***	-.34	.12	-.22**	-.39	.13	38.38***
Verbal victimisation → Loneliness	.21**	.24	.08	-.05	-.06	.08	51.14***
Paths between victimisation and mediators							
Cyber victimisation → Negative attribution	.22**	.32	.13	.19*	.16	.07	96.17***
Attack on property → Positive attribution	.03	.03	.08	-.19*	-.22	.09	117.16***
Social victimisation → Positive attribution	-.21*	-.18	.09	-.02	-.02	.07	67.41***
Cyber victimisation → Positive attribution	.03	.05	.14	-.23**	-.19	.07	117.16***
Social victimisation → Trust beliefs	-.16	-.025	.14	-.29***	-.41	.11	67.41***
Negative attribution mediated paths							
Negative attribution → Depressive symptoms	.26***	.77	.22	.35***	1.06	.19	22.12***
Negative attribution → Self-worth	-.17*	-.33	.17	-.03	-.08	.17	29.32***
Negative attribution → School liking	-.30***	-.83	.25	-.39***	-1.01	.19	114.28***
Positive attribution mediated paths							
Positive attribution → Depressive symptoms	-.20**	-.62	.23	-.26***	-.82	.21	125.44***
Positive attribution → Self-worth	.07	.14	.18	.28***	.58	.17	12.04***
Positive attribution → School liking	.17	.47	.25	.23***	.62	.20	2.54
Positive attribution → Social confidence	.19*	1.04	.38	.03	.20	.50	5.40*
Trust beliefs mediated paths							
Trust beliefs → Depressive symptoms	-.22	-.36	.12	-.21**	-.34	.12	88.07***
Trust beliefs → Self-worth	.16*	.14	.09	.14	.16	.09	2.94
Trust beliefs → Loneliness	-.26***	-.22	.06	-.37***	-.29	.06	36.44***
Trust beliefs → Social confidence	.03	.09	.25	.34***	1.06	.24	10.54**

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