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# **Correlates of traditional bullying and cyberbullying perpetration among**

## **Australian students**

**Ibrahim Tanrikulu and Marilyn A Campbell**

### **ABSTRACT**

This study investigated the associations of gender, age, trait anger, moral disengagement, witnessing of interparental conflict, school connectedness and the religious makeup of the school setting in the involvement in traditional bullying and cyberbullying perpetration. Five hundred Australian students completed an anonymous self-report, paper-based questionnaire. According to the results, 25.2% of the participants reported having engaged in traditional or cyberbullying perpetration. While trait anger and moral disengagement were associated with being a traditional bully, trait anger, interparental conflicts, moral disengagement and school connectedness were associated with being a traditional bully-victim. Additionally, trait anger and moral disengagement were associated with being a traditional-and-a-cyberbully. Our findings indicated that besides individual variables, the family and school environment have an impact on traditional and cyberbullying perpetration behavior. Results imply that any prevention attempts to reduce traditional and cyberbullying should consider students' experiences both at home and at school.

**Keywords:** bullying; cyberbullying; perpetration; correlates.

## **1. Introduction**

Bullying is a social relationship problem which can be defined as an imbalance of power characterized by an intention to hurt others which is repeated (Olweus, 1993). With the advent of technology such as the Internet and mobile phones widely available to young people, cyberbullying, or bullying using technology has emerged (Campbell, 2005). Although there has been some controversy over whether the three criteria of an imbalance of power, intentionality and repetition of traditional bullying apply to cyberbullying (Dooley, Pyzalski, & Cross, 2009; Slonje, Smith, & Frisen, 2013), many researchers are in agreement that they are applicable, although with some differences in appearance depending on the different mediums (Menesini et al., 2013; Ybarra, Boyd, Korchmaros, & Oppenheim 2012). Hence, cyberbullying can be defined as aggressive, deliberate and repeated behaviors of an individual or group of individuals by using information and communication technologies to inflict harm on others (Smith et al., 2008).

The prevalence rates for traditional and cyberbullying in Australia seem to be similar to other developed countries with about 20-30% of students being traditionally victimized, 15% being cyberbullied and 7-8% being bullied in both modes (Campbell, Spears, Slee, Kift, & Butler, 2011; Hemphill et al., 2012). These prevalence rates are despite Australia's adoption of a National Safe Schools Framework (Cross, Epstein, & Hearn, 2011) where every school is required to develop an anti-bullying policy and evidenced-based programs to reduce bullying are available (Cross et al., 2012).

Victims of both traditional bullying and cyberbullying suffer many negative consequences according to the existing research evidence. Victims have reported experiencing psychological, social, physical and school related problems. Anxiety, depressive symptoms, anger, sadness, guilt, shame and frustration have been reported among the

psychological problems. (Chin, 2011; Mishna, Cook, Gadalla, Daciuk, & Solomon, 2010; Wang, Nansel, & Iannotti, 2011). Negative social impacts have been shown to be withdrawal from friends, loneliness and peer rejection (Hinduja & Patchin, 2007; Kroon, 2011; Ybarra & Mitchell, 2004). Physically, victims have been shown to self-harm, sustain physical injuries and abuse drugs (Hinduja & Patchin, 2007; Shariff, 2008; Ybarra & Mitchell, 2004; Wang, Iannotti, Luk, & Nansel, 2010). Additionally, victims have attendance problems and low grades at school (Cross, Lester, & Barnes, 2015; Johnson, 2011).

Students who bully others in physical or cyber space appear to be at risk as well. Compared to the victims, traditional bullies were reported having low levels of school attendance, school satisfaction and higher levels of irritability (Arslan, Hallett, & Akkas, 2012); and in comparison with the non-involved students, cyberbullies were found to have social problems, higher levels of stress, depression and anxiety (Campbell, Slee, Spears, Butler, & Kift, 2013). When compared with the non-involved students, perpetrators of traditional bullying and cyberbullying were also at highest risk in terms of substance usage and weapon carrying (Wang, Iannotti, & Luk, 2012). Therefore, understanding the risk factors for students who bully their peers is important to inform prevention and intervention programs to reduce all forms of bullying, including cyberbullying.

Studies have shown that both traditional bullying and cyberbullying have harmful consequences on victims, such as increased social problems, anxiety and depression (Campbell, Spears, Slee, Butler, & Kift, 2012). And most research has focused on the risk factors for a student becoming a victim of traditional bullying (Champion & Clay, 2007; O'Brennan & Furlong, 2010). While some studies have explored only the antecedents for perpetrators of traditional bullying (Cook, Williams, Guerra, Kim, & Sadek, 2010; Espelage & De La Rue, 2013), others have examined the risk factors for traditional bullying

perpetration along with cyberbullying perpetration (Erdur-Baker, 2010; Hemphill et al., 2012). However, to build a profile of students who bully their peers, there is still a need to examine the correlates of all forms of bullying perpetration in an integrated model to determine the interplay between correlates, such as age, gender, trait anger, moral disengagement, interparental conflict, school connectedness and the religious makeup of the school setting. With these in mind, we set out to examine the correlates of traditional and cyberbullying perpetration in a sample of Australian youth.

The theory on which this study is based is Bronfenbrenner's *Ecological Systems Theory* which states that human beings cannot be accurately understood in terms of their development and behaviors unless the whole ecological system with which they interact is taken into consideration (Bronfenbrenner, 1994). This includes, understanding the diverse relationships that students involved in bullying perpetration experience (Hong & Espelage, 2012). Considering the extant research on bullying, bullying-involved students were reported having problems at family, school, and neighborhood as well as with peers and peer groups (e.g., Swearer & Espelage, 2004). Therefore, conceptualizing bullying as a phenomenon which results from the complex and interconnected interactions in an ecological system has the potential to discover more about the nature of bullying perpetration behavior.

The first two of Bronfenbrenner's six subsystems are the focus for this study. Age, gender, trait anger and moral disengagement are categorized in the first of Bronfenbrenner's individual characteristics subsystem. Interparental conflicts, school connectedness and school setting are the variables drawn from the second microsystem level. These variables were chosen because we aimed to address the questions unanswered by the previous research results which are summarized below.

### *1.1. Gender and Age*

Inconsistent findings have been reported about gender and age as two possible factors affecting traditional and cyberbullying perpetration behavior. One group of researchers has found that boys engage in both traditional and cyberbullying perpetration more than girls (Erdur-Baker, 2010). Another group of studies, however, showed that girls engage in perpetration behaviors more than boys, however, using different forms such as indirect and relational forms of bullying like spreading rumors, social exclusion and peer rejection in addition to cyberbullying (Cullerton-Sen & Crick, 2005; Holfeld & Grabe, 2012). Other studies, have reported no gender differences in terms of being a perpetrator in both traditional and cyberbullying (Mishna et al., 2010). Similarly, contradictory findings have been indicated for the age of perpetrators in both traditional and cyberbullying perpetration (Erdur-Baker, 2010). Middle school students, that is seventh to ninth grades, have been shown to report the highest rate of cyber victimization (Sakellariou, Carroll, & Houghton, 2012; Wang, Iannotti, & Nansel, 2009) similar to traditional bullying victims (e.g., Espelage & Horne, 2008). However, other studies have found that cyber victimization increased with age (Mesch, 2009; Vandenbosch & Van Cleemput, 2009) contrary to traditional bullying which decreases with age (Pellegrini & Bartini, 2000). On the other hand, no differences in cyber victimization or perpetration have been shown in other research (Werner, Bumpus, & Rock, 2010). More evidence, therefore, is needed regarding the roles of gender and age as possible risk factors for bullying perpetration.

### *1.2. Trait anger*

A further correlate of traditional bullying and cyberbullying perpetration has been shown to be trait anger. It is defined as a tendency to react with anger across time and situations, where individuals become angry often in various situations, as opposed to state anger which is momentary anger not dispositional in nature (Spielberger, Jacobs, Brunner, &

Lunsford, 2002). Anger has been reported to link with school children's involvement as a perpetrator in traditional bullying (Camodeca & Goossens, 2005; Champion & Clay, 2007). The results of a recent study with 3114 middle school students in the United States indicated that angry students had a higher possibility of being categorized as a bully or bully/victim (Lovegrove, Henry, & Slater, 2012). Anger was also the main motivation in an Austrian study of young people who bullied both in a traditional way and also cyberbullied (Grading, Strohmeier, & Spiel, 2012); however, whether this was because of an angry moment or more because the young person had high trait anger was not distinguished. By specifically focusing on trait anger, this study, therefore aims to fill this gap by examining the role of trait anger on traditional and cyberbullying perpetration.

### *1.3. Moral Disengagement*

Perpetrators of traditional bullying and cyberbullying may use moral disengagement mechanisms to ethically justify their behaviors against their peers. Bandura (2002) has described moral disengagement as a cognitive process to justify destructive behaviors which normally violate one's internal moral standards. A significant relationship between traditional bullying and moral disengagement has been shown with moral disengagement scores of perpetrators (both as pure bullies and bully-victims) being higher compared to non-involved students (Obermann, 2011). Similarly, higher levels of moral disengagement were reported for traditional bullying perpetrators compared to victims (Almeida, Correia, & Marinho, 2010). Moral disengagement could act as an antecedent in cyberbullying perpetration as well. Offenders' inability to see the victims during and after the cyberbullying incidents may increase the likelihood of cyberbullying perpetration and lower moral engagement (Bauman, 2010; Perren & Gutzwiller-Helfenfinger, 2012). That is, compared to traditional bullying offenders, perpetrators of cyberbullying may feel less guilt, shame or sympathy towards to the victims since there is no real time face-to face contact. Unable to witness negative

experiences of the victims, perpetrators may become motivated to engage in more online harmful behaviors which can contradict their moral beliefs. Moreover, cyberbullies have been reported to lack remorse towards their victims (Slonje, Smith, & Frisé, 2012), and this may be another reason why cyberbullying perpetrators may behave contrary to their moral values (Wachs, 2012). Moral disengagement has been reported as a significant correlate of cyberbullying perpetration (Pornari & Wood, 2010; Renati, Berrone, & Zanetti, 2012). However, this association has not yet been explored in combination with the other variables. Hence, this research will address this gap by its simultaneous inclusion of moral disengagement into an integrated model with multiple variables.

#### *1.4. Witnessing interparental conflict*

Another factor which has been shown to correlate with student bullying perpetration behavior is witnessing or experiencing interparental conflicts in the home. *Social Learning Theory* (Bandura, 1978) proposes that observation is important in human learning, and behaviors can be learned from modeling. In this respect, young perpetrators may learn and adopt bullying behaviors in a family environment where parental arguments and conflicts are common. Children may transfer the aggressive behaviors they learnt at home to school or to online settings. School environment can be regarded as one of the immediate places where traditional bullying perpetration is manifested by such children. Considering the rationale behind the connection between interparental conflicts and cyberbullying perpetration, bullies experiencing conflicts at home and thus behaving aggressively in daily life may transfer this aggressiveness to the online environments which seem safer, anonymous, and easy-to-spread. Online environments, therefore, may serve as extra places besides school settings to direct aggression towards others. There is some evidence for the relationship between parental conflict and being a victim of traditional bullying (Baker, 2012) and also a perpetrator of traditional bullying (Christie-Mizell, 2003). One recent study has also shown that family



violence led to increases in non-physical bullying in American students (Low & Espelage, 2013). More research, therefore, is needed to investigate and understand the relationship between interparental conflicts and traditional and cyberbullying perpetration.

### *1.5. School Connectedness*

A further risk factor to consider for students who bully is the impact of school connectedness. School connectedness refers to young people having close, meaningful ties with peers and teachers, and their sense of belonging and trust in their school community overall (Whitlock, 2006). There is evidence that a lack of connectedness plays a major role in young people's risky health behaviors such as substance use (Peltzer, 2009), smoking (Rasmussen, Damsgaard, Holstein, Poulsen, & Due, 2005), and weapon violence (Henrich, Brookmeyer, & Shahar, 2005). A similar link has been found between traditional bullying perpetration and school connectedness (Arslan et al., 2012; Cunningham, 2007). Yet, to date, there seems no research examining the association between school connectedness and cyberbullying perpetration.

### *1.6. Religious makeup of the School Setting*

In this study, the religious makeup of the school setting was also investigated in terms of its impact on perpetration of traditional bullying and cyberbullying. For the purposes of the present research, religious makeup of a school setting is considered as the religious values dominating the educational approach of a school. The religious makeup of a school setting can influence the interaction patterns, social roles, as well as interpersonal relationships at a school environment. Therefore, it belongs to the microsystem level in Bronfenbrenner's *Ecological Systems Theory* (1994). Investigating the impact of the religious makeup of a school setting can contribute to our understanding about bullying perpetration within ecological systems theory.

There were no studies located on the religious makeup of a school setting on traditional bullying or cyberbullying. However, we know that religious identity has been noted as one of the reasons for bullying perpetration (Collins, McAleavy, & Adamson, 2004; Puhl, Peterson, & Luedicke, 2013). Additionally, school climate (Klein, Cornell, & Konold, 2012), social identity with the school (Turner, Reynolds, Lee, Subasic, & Bromhead, 2014), classroom norms (Pozzoli, Gini, & Vieno, 2012) and classroom makeup (Bellmore, Witkow, Graham, & Juvonen, 2004) all have an important influence on bullying perpetration. We therefore anticipate that a school context which is shaped by religious values can also have an impact on bullying perpetration of school children. We would expect that students in a religious school setting, compared to the others, are likely to be exposed to victimization as a result of racism or ignorance. On the other hand “revenge” is one of the basic motives of bullying perpetration (König, Gollwitzer, & Steffgen, 2010). Thus, students who become victimized due to their religious identity are likely to retaliate more as a result of the feeling of vengefulness. Taking all of these into account, we aimed to investigate the possible impact of the religious makeup of a school setting on bullying behavior.

The current study therefore explored whether gender, age, trait anger, moral disengagement, interparental conflict, school connectedness and the religious makeup of the school setting, are significant correlates of traditional bullying and cyberbullying perpetration. It was expected that the likelihood of being a traditional bullying and cyberbullying perpetrator would be higher for young people who were male, older, had higher levels of trait anger, higher levels of moral disengagement, lower levels of school connectedness, and higher levels of interparental conflict. These variables, individually or in combination, can act as correlates of traditional or cyberbullying perpetration. It was also hypothesized that children attending to a religious school would report higher levels of traditional and cyberbullying perpetration.

## 2. Method

### 2.1. Participants

Participants were 500 Australian students from grades 5-12. While 81 (16.2%) of the participants were primary school students, 413 (82.6%) were high school students (with 6 (1.2%) unreported grade level). The students were mainly in grade 10 (19.8%) and 11 (27.6%). There were 292 girls (58.4%) and 191 boys (38.2%) with 17 (3.4%) unreported gender. Students were drawn from two different school settings. The first two school settings were private institutions espousing Islamic values with 178 students participating, with the remainder of the 322 students attending government schools which do not espouse any particular religious values. Many of the parents (mothers 43.4% and fathers 43.8%) had a university degree.

### 2.2. Measures

The survey administered was an anonymous self-report, paper-based questionnaire, and included six sections. The first section used the *Traditional Bullying and Cyberbullying Questionnaire (TB&CBQ)* (Campbell et al., 2012) to investigate bullying and cyberbullying victimization and perpetration experiences. In *TB&CBQ*, the word bully was used with a definition instead of a behavioral list which results in higher prevalence rates with more false positives (Ybarra et al., 2012). *TB&CBQ* demonstrated an acceptable reliability for this study (Kuder-Richardson-20= 0.69). It had two parallel forms. The first form asked about traditional bullying victimization and perpetration. The following definition of traditional bullying was provided following the recommendations of Solberg and Olweus (2003) that definitions improve the validity of responses:

*“There are lots of different ways to bully someone. A bully wants to hurt the other person (it’s not an accident) and does it repeatedly and unfairly (the bully has some advantage over the victim). Sometimes a group of students will bully another student.”*

Then, two filter questions “Have you been bullied this year? (since January this year)” and “Have you bullied someone this year (since January this year)” were used to identify traditional victims and bullies. If the answer was “no”, participants were asked to skip the question. If the answer was “yes”, participants were directed to report the frequency of their traditional victimization or perpetration. Response options for the frequency were 1 (everyday), 2 (most days), 3 (one or two times a week), 4 (once a week) and 5 (less than once a week). The second form was about cyberbullying victimization and perpetration.

The same procedure above was applied after providing the following definition of cyberbullying:

*“Cyberbullying is when one person or a group of people repeatedly try to hurt or embarrass another person, using their computer or mobile phone, to use power over them. With cyberbullying, the person bullying usually has some advantage over the person targeted, and it is done on purpose to hurt them, not like an accident or when friends tease each other.”*

The *Trait-Anger Scale (TAS)* of the *State/Trait Anger Expression Inventory for Children and Young people (STAXI-C/A)* (Spielberger, et al., 2002) was used to assess children’s general inclinations and manifestations of anger. *TAS* is a 12-item self-report inventory, and each item is rated on a three point scale (1 (hardly ever), 2 (sometimes), 3 (often)). It investigates children’s general inclinations and manifestations of anger. For the current study, the inter-item reliability coefficient of the *TAS* was 0.85. Example items are “I get angry quickly” and “I get furious when scolded in front of others.”

The third section of the survey used the *Frequency Subscale* of the *Children's Perception of Interparental Conflict Scale* (Grych, Seid, & Fincham, 1992). The *Frequency Subscale* is a 6-item self-report questionnaire, and children are asked to rate the frequency of parental conflicts at home on a 3-point scale. Response options were 1 (true), 2 (sort of true), 3 (false). Cronbach's alpha for the scale was 0.83 for this study. Example items are "I often see my parents arguing" and "My parents are often mean to each other even when I'm around."

The *Moral Disengagement Scale* (Hymel, Rocke-Henderson, & Bonanno, 2005) was administered in the next section. It examines a participant's tendency to use cognitive moral disengagement mechanisms while conducting harmful behaviors in interpersonal school relationships. The scale assesses the four mechanisms of moral disengagement which are cognitive restructuring, minimizing agency, distortion of negative consequences and dehumanization of the victim. It is an 18-item self-report survey which is rated on a 4-point Likert scale with response options ranging from strongly disagree to strongly agree. For the present study, the alpha coefficient was 0.84. Example items are "It's OK to pick on losers" and "Some kids need to be picked on just to teach them a lesson."

In the fifth section, *School Connectedness Scale (SCS)* (Resnick et al., 1997) examined school children's psychological attachment toward school. *SCS* is 5-point Likert-type scale with 5 items. Response options ranged from 1 (strongly disagree) to 5 (strongly agree). The version used in the California Healthy Kids Survey (California Healthy Kids Survey, 2011) was administered in this study. The Cronbach's alpha was 0.88 for the present study. Example items are "I feel close to people at this school." and "I feel like I am a part of this school." And the last section obtained demographic information of gender, grade level, mother's and father's education level. Grade level was used as a proxy for age.

The literature has documented suggestive evidence regarding the impact of the makeup of the classrooms on the bullying experiences of the school children (e.g., Bellmore, et al., 2004). On this basis, we anticipated that the religious makeup of the school settings may have an influence on bullying experiences of the participants of this present study. Considering these, a variable called *religious makeup of the school setting* was created in this study as a proxy for the type of school where the data were collected. The variable of *religious makeup school setting* included two groups; Muslim school setting and other school setting. The details about the school types is examined in the following section.

### 2.3. Procedure

Participation was voluntary, and active parental consent was required. The questionnaire took approximately 10-15 minutes to complete. Data were collected in different settings by the first author. The first group of the students were recruited from two Muslim private schools (178, 35.6%), and the questionnaire was administered during class time. These schools provide education primarily guided by Islamic principles. The managers of these schools noted that almost all of their students were of the Muslim faith. The second group of students were approached with their parents and completed the survey individually in shopping centers, public parks, and at a swimming pool in south-east Queensland. No questions related to the religious identity were directed to these participants; therefore, we did not know whether there were any Muslim participants in this second group of students. Data collection took place between November and December 2012, when students had been together for about ten months of the school year. This article uses data collected in a larger study assessing both traditional and cyber peer bullying and also sibling bullying. Peer bullying results are presented in this paper.

## 3. Results

### 3.1. Data Analysis

The frequencies obtained from *Traditional Bullying and Cyberbullying Questionnaire* were used to identify the perpetrators and victims of traditional bullying and cyberbullying. The categories were created on the basis that the frequency of the reported perpetration was once or more. Please note that only-victim status participants who reported having been victimized once or more in traditional or cyber ways but never bullied others were disregarded since perpetrators were the specific focus of the current research. All participants were categorized first descriptively by their bully status; whether it was traditional bullying or cyberbullying and whether the participant was a bully only or a bully-victim. This resulted in 6 categories of pure traditional bully (traditionally bullied others once or more but was never victimized), pure cyberbully (cyber bullied others once or more but was never cyber victimized), combined traditional and cyber bully (bullied others in traditional and cyber environments once or more but was never victimized), traditional ‘bully-victim’ (not only bullied others but was also victimized in traditional ways), cyber ‘bully-victim’ (not only bullied others but was also victimized in cyber settings) and traditional and cyber ‘bully-victim’ (not only bullied others but was also victimized in physical and cyber settings). There were also other combinations such as a traditional bully who was also a cyber ‘bully-victim’ resulting in 12 categories (Table 1).

Table 1. *Descriptive statistics for traditional bullying/ cyberbullying perpetrators*

Perpetrator Types	Whole sample <i>f</i> (%)	Gender <i>f</i> (%)		Grade <i>f</i> (%)		School Setting <i>f</i> (%)	
		Girls	Boys	Primary	High	Islamic	Others
Trad. bully-only	26(5.2)	14(4.8)	11(5.8)	4(4.9)	22(5.3)	14(7.9)	12(3.7)
Trad. bully-victim	21(4.2)	14(4.8)	7(3.7)	8(9.9)	13(3.1)	13(7.3)	8(2.5)
Cyber bully-only	7(1.4)	4(1.4)	3(1.6)	-	7(1.7)	3(1.7)	4(1.2)
Cyber bully-victim	2(0.4)	1(0.3)	-	1(1.2)	1(0.2)	1(0.6)	1(0.3)
Trad. and cyber bully	8(1.6)	-	8(4.2)	-	8(1.9)	3(1.7)	5(1.6)
Trad. bully-victim +	21(4.2)	8(2.7)	11(5.8)	1(1.2)	19(4.6)	7(3.9)	14(4.3)

Cyber bully-victim							
Trad. and cyber bully + Cyber victim	6(1.2)	3(1.0)	3(1.6)	-	6(1.5)	1(0.6)	5(1.6)
Trad. and cyber bully + Trad. victim	8(1.6)	4(1.4)	3(1.6)	-	8(1.9)	1(0.6)	7(2.2)
Trad. bully + Trad. and cyber victim	16(3.2)	11(3.8)	5(2.6)	1(1.2)	15(3.6)	3(1.7)	13(4.0)
Trad. bully + Cyber victim	4(0.8)	3(1.0)	1(0.5)	2(2.5)	2(0.5)	2(1.1.)	2(0.6)
Cyber bully + Trad. victim	4(0.8)	2(0.7)	2(1.0)	-	4(1.0)	-	4(1.2)
Cyber bully + Trad. victim + Cyber victim	3(0.6)	2(0.7)	1(0.5)	-	3(0.7)	-	3(0.9)
Total	126(25.2)	65(22.6)	55(28.9)	17(20.9)	108(26.0)	49(27.5)	78(24.2)

Notes. Trad.= Traditional. Ns vary (N= 500 for the whole sample; N= 483 for the gender; N= 5494 for the grade; and N= 500 for the school setting)

However, as there were such low frequencies in seven of the 12 categories, the categories were collapsed. The new categories were created with the first five perpetrator groups in Table 1. These groups were traditional bully, traditional ‘bully-victim’, cyberbully, cyber ‘bully-victim’ and traditional and cyber bully (Table 2). The participants in the others groups in Table 1 were combined under these five perpetrator groups on the criterion that they were involved in the relevant perpetration category. For example, if a participant reported having traditionally bullied someone but was also cyber victimized once or more, this participant was combined with the traditional bully category (see Trad. bully category on Table 2). Or if a participant reported having bullied others in traditional and cyber environments but was also cyber victimized once or more, this participant was combined with the traditional and cyber bully category (see Trad. and cyber ‘bully’ category on Table 2). The rationale behind these combinations was dependent on the research indicating that there is an overlap between traditional bullying and cyberbullying (e.g., Erdur-Baker, 2010; Wachs, 2012). This overlap implies that traditional bullies also use online environments to bully others.



Table 2. *Combinations of the five perpetrator categories*

<i>Category</i>	<i>Combination</i>	<i>n</i>
Trad. bully	trad. bully only group and trad. bully + cyber victim group	30
Trad. 'bully-victim'	trad. bully-victim group, traditional bully-victim group + cyberbully-victim group and trad. victim + trad. bully + cyber victim group	58
Cyberbully	cyberbully only group, trad. victim + cyberbully group and trad. victim + cyber victim + cyberbully group	14
Cyber 'bully-victim'	cyber bully-victim group	2
Trad. and cyber 'bully'	trad. bully + cyberbully group, trad. bully + cyber victim + cyberbully group and trad. victim + trad. bully + cyberbully group	22

Notes. Trad.= Traditional

Independent sample t-tests were conducted to examine the influence of gender, age and the religious makeup of the school setting on trait anger, interparental conflicts, moral disengagement and school connectedness. A multinomial logistic regression analysis was conducted to explore the correlates of traditional bullying and cyberbullying perpetration.

### 3.2. *Descriptive Statistics*

The frequencies and percentages of perpetrator types by gender, grade and the religious makeup of the school setting are shown in Table 1. It was found that 17% of perpetrators fell into six bullying categories (traditional bully only; cyberbully only; both a traditional and cyber bully; traditional 'bully-victim'; cyber 'bully-victim'; and traditional and cyber 'bully-victim'). There were another six low frequency categories which comprised 8.2% of bullies where the combination of bullying others was combined with other roles such as a traditional bully and cyber victim. While 28.9% of the boys surveyed reported bullying someone else, 22.6% of girls reported this bullying behavior. More high school students (26.0%) reported bullying someone with 20.9% of primary students saying that they had been a perpetrator since the last January. While more than a quarter of the students attending to an Islamic school (27.5%) engaged in bullying perpetration, a little less than a quarter of the students not attending a Muslim school (24.2%) reporting having bullied others.

### 3.3. Gender, grade and religious makeup of the school differences regarding the four associated variables

Two independent sample t-tests were conducted to examine whether there were significant gender and age differences in terms of the associated variables, specifically trait anger, interparental conflict, moral disengagement and school connectedness. As seen in Table 3, boys and girls significantly differed in reported interparental conflict  $t(473) = -2.79$ ,  $p < .01$  and moral disengagement  $t(481) = -1.92$ ,  $p < .05$ . Primary and high school students significantly differed in trait anger  $t(491) = 2.44$ ,  $p < .05$  and interparental conflict  $t(484) = -2.53$ ,  $p < .05$ . A further independent sample t-test was conducted to ascertain if there were any differences between the students who attended the Islamic schools and those who did not. It was found there were no significant differences between students at the Islamic school and other students in terms of trait anger  $t(497) = -.22$ ,  $p > .05$  and moral disengagement  $t(498) = -.30$ ,  $p > .05$ , but there were significant differences in reported interparental conflict  $t(490) = -1.97$ ,  $p < .05$  and school attachment  $t(496) = 2.42$ ,  $p < .05$ .

Table 3. *T-test results comparing associated variables by gender, grade and school setting (for the five perpetrator categories)*

	<i>Gender</i>		<i>t</i>	<i>Grade</i>		<i>t</i>	<i>School Setting</i>		<i>t</i>
	<i>Girls M(SD)</i>	<i>Boys M(SD)</i>		<i>Primary Sc. M(SD)</i>	<i>High Sc. M(SD)</i>		<i>Islamic Sc. M(SD)</i>	<i>Other Sc. M(SD)</i>	
Trait anger	24.83(5.78)	23.21(5.87)	1.53	21.66(6.04)	23.58(5.61)	2.44*	21.78(5.45)	21.67(4.99)	-.22
Interparental conflict	12.20(3.86)	14.05(3.38)	-2.79**	13.35(3.59)	13.53(3.65)	-2.53*	14.01(3.47)	13.38(3.41)	-1.97*
Moral disengagement	36.97(7.60)	39.86(8.99)	-1.92*	40.06(8.93)	38.31(8.37)	0.77	35.25(7.70)	35.03(7.89)	-.30
School connectedness	17.43(5.29)	16.61(5.51)	0.84	17.53(6.21)	17.09(5.28)	0.30	18.36(4.80)	19.43(4.69)	2.42*

Notes. *M* = Mean. *SD* = Standard Deviation. Sc. = School. The lowest and the highest moral disengagement scores ranged from 18 to 72. The lowest and the highest interparental conflict scores ranged from 6 to 18. The lowest and the highest school connectedness scores ranged from 5 to 25. The lowest and the highest trait anger scores ranged from 12 to 36. \* $p < 0.05$ , \*\* $p < 0.01$ .

### 3.4. Correlates of traditional bullying and cyberbullying perpetration

Prior to performing multinomial logistic regression analyses, multicollinearity among the independent variables was inspected. No independent variables were strongly interrelated

since estimates were within the limits between 0.09 and 0.30. Thus, all independent variables were added to the analysis.

A multinomial logistic regression analysis was conducted to explore the correlates of traditional bullying and cyberbullying perpetration using SPSS software (version 21 for Windows). Due to the exploratory nature of the tested model (Field, 2009), stepwise forward entry method was used to estimate the contribution of each variable to the model. The dependent variable was being involved as a perpetrator of traditional bullying and cyberbullying. As the cyberbully-victim category in Table 2 was too small, it was discarded from further analyses. Thus, the dependent variable was composed of the four identified categories of traditional bully, traditional 'bully-victim', cyberbully, and traditional bully-cyberbully. Since some significant differences were found for gender, grade and the religious makeup of the school setting (Table 3), these variables were added as independent variables in the model. Therefore, gender, grade, trait anger, moral disengagement, interparental conflict, school connectedness and the religious makeup of the school setting were the independent variables. All independent variables were simultaneously included in the analysis. Non-perpetrators who were victims or not-involved in a bullying/cyberbullying incident were specified as the reference group to examine how traditional bullying/cyberbullying perpetrators differed from the non-perpetrators.

Table 4 presents the results of the multinomial logistic regression analysis. Compared to the non-perpetrator group, trait anger ( $b= 0.13$ , Wald  $\chi^2(1)= 9.78$ ,  $p < .01$ ) and moral disengagement ( $b= 0.06$ , Wald  $\chi^2(1)= 4.05$ ,  $p < .05$ ) were significantly correlated with being in the *traditional bully* group. Odds ratio values showed that if trait anger and moral disengagement increase one more unit, the changes of the odds of belonging to traditional bully group are 1.14 and 1.06, respectively. In short, as trait anger and moral disengagement

increase, participants are more likely to be in the traditional bully group than the non-perpetrator group. The other variables were not statistically significant.

In comparing the *traditional bully-victim* group with the non-perpetrator group, the relative risk of being in the traditional bully-victim group was significantly related to trait anger ( $b= 0.09$ , Wald  $\chi^2(1)= 8.11$ ,  $p < .01$ ), interparental conflict ( $b= -0.09$ , Wald  $\chi^2(1)= 3.89$ ,  $p < .05$ ), moral disengagement ( $b= 0.05$ , Wald  $\chi^2(1)= 6.16$ ,  $p < .05$ ) and school connectedness ( $b= -0.13$ , Wald  $\chi^2(1)= 18.43$ ,  $p < .001$ ). Odds ratio values indicated that when trait anger, interparental conflict, moral disengagement and school connectedness increase one more unit, the changes of the odds of belonging to traditional bully-victim group are 1.09, 0.91, 1.05, and 0.88, respectively. In other words, as trait anger and moral disengagement increase, participants are more likely to be in the traditional bully-victim group than the non-perpetrator group. However, if interparental conflict and school connectedness increase, participants are less likely to be in the traditional bully-victim group. Gender, grade and the religious makeup of the school setting were not statistically significant for the traditional bully-victim group.

None of the variables were associated with being in the *cyberbully* group over the non-perpetrator group.

Gender ( $b= -1.08$ , Wald  $\chi^2(1)= 4.04$ ,  $p < .05$ ), trait anger ( $b= 0.10$ , Wald  $\chi^2(1)= 4.08$ ,  $p < .05$ ) and moral disengagement ( $b= 0.07$ , Wald  $\chi^2(1)= 4.10$ ,  $p < .05$ ) were significantly associated with a participant's being in the *traditional-and-cyber bully* group than in the non-perpetrator group. According to the odds ratio values, as gender changes from girl to boy, the change in the odds of belonging to the traditional-and-cyber bully group is 0.34. In other words, compared to the non-perpetrator group, the odds of a boy to be in the traditional-and-cyber bully group are  $1/0.34= 2.94$  times more than a girl. In addition, the odds ratio values

indicated that when trait anger and moral disengagement increase one more unit, the changes of the odds of belonging to traditional-and-cyber bully group are 1.11 and 1.07, respectively. In other words, as trait anger and moral disengagement increase, participants are more likely to be in the traditional-and-cyber bully group than the non-perpetrator group. No other variables were statistically significant.

Table 4. *Multinomial logistic regression analysis*

	Trad. Bully			Trad. Bully-victim			Cyberbully			Trad. and Cyberbully		
	<i>B</i> ( <i>SE</i> )	Wald	OR [95% CI]	<i>B</i> ( <i>SE</i> )	Wald	OR [95% CI]	<i>B</i> ( <i>SE</i> )	Wald	OR [95% CI]	<i>B</i> ( <i>SE</i> )	Wald	OR [95% CI]
Gender												
Girls	-0.12 (0.44)	0.07	0.89 [0.37, 2.10]	-0.04 (0.34)	0.02	0.96 [0.49, 1.88]	0.17 (0.60)	0.08	1.19 [0.37, 3.86]	-1.08 (0.54)*	4.04	0.34 [0.12, 0.97]
Boys (ref.)												
Grade												
Primary S.	-0.48 (0.62)	0.62	0.62 [0.18, 2.06]	0.07 (0.44)	0.02	1.07 [0.45, 2.56]	-20.09 (0.00)	0.00	1.89 [1.89, 1.89]	-19.91 (0.00)	0.00	2.25 [2.25, 2.25]
High S. (ref.)												
School Setting												
Islamic	0.66 (0.43)	2.33	1.93 [0.83, 4.49]	0.21 (0.34)	0.38	1.23 [0.63, 2.41]	-0.58 (0.68)	0.73	0.56 [0.15, 2.13]	-0.08 (0.56)	0.02	0.92 [0.31, 2.75]
Others (ref.)												
Trait anger	0.13 (0.04)**	9.78	1.14 [1.05, 1.23]	0.09 (0.03)**	8.11	1.09 [1.03, 1.16]	0.05 (0.06)	0.68	1.05 [0.94, 1.17]	0.10 (0.05)*	4.08	1.11 [1.00, 1.22]
Interparental conflict	0.10 (0.07)	2.35	1.11 [0.97, 1.26]	-0.09 (0.05)*	3.89	0.91 [0.83, 1.00]	0.18 (0.10)	3.25	1.20 [0.98, 1.45]	-0.08 (0.07)	1.43	0.92 [0.80, 1.05]
Moral disengagement	0.06 (0.03)*	4.05	1.06 [1.00, 1.12]	0.05 (0.02)*	6.16	1.05 [1.01, 1.10]	0.06 (0.04)	2.40	1.06 [0.98, 1.15]	0.07 (0.03)*	4.10	1.07 [1.00, 1.14]
School connectedness	-0.03 (0.04)	0.56	0.97 [0.89, 1.05]	-0.13 (0.03)***	18.43	0.88 [0.83, 0.93]	-0.04 (0.06)	0.52	0.96 [0.85, 1.08]	-0.05 (0.05)	1.15	0.95 [0.86, 1.04]

Notes: Reference group was the non-perpetrators. Trad.= Traditional. *B*= Regression Weight. *SE*= Standard Error. OR= Odds Ratio. CI= Confidence Interval. R<sup>2</sup>= .21(Cox & Snell), .25 (Nagelkerke). Model  $\chi^2(28)= 107.85, p<.001$ . \*  $p<.05$ , \*\*  $p<.01$ , \*\*\*  $p<.001$ .

#### 4. Discussion

This study contributes to the literature by investigating several correlates of traditional bullying and cyberbullying perpetration in young people. In line with the previous studies, the prevalence of traditional bullying both as pure bullies and ‘bully-victims’ was higher than cyberbully and cyber ‘bully-victims’ in this current investigation (Campbell et al., 2012; Williams & Guerra, 2007). The relatively low frequency of cyberbullying perpetration (cyberbully-only and cyberbully-victim) was also consistent with the earlier research (Low & Espelage, 2013) reporting cyberbullying as an infrequent form of bullying. An interesting finding on prevalence was the extremely complicated combinations of traditional and cyberbullying perpetration and victimization in which the students engaged (Table 1). Albeit of low frequency, the existence of such groups indicated that students who were traditional bullies were also cyber victims; or traditional bully and cyber bully students were also involved in traditional and cyber victimization. The existence of such groups supports the findings of the previous studies reporting that perpetrators bully in both physical and cyber environments, and some experience traditional or cyber victimization (e.g., Tokunaga, 2010). The results of the t-test analyses indicated that the study variables differed depending on the groups associated with gender, age and the religious makeup of the school setting. Therefore, future research is needed to explore the moderation effect of these groups on the relationship between the predictor variables of this study besides other related predictor variables and bullying perpetration group membership.

Although gender and age were hypothesized to influence bullying perpetration behavior, age was found not to be a correlate of perpetrator status in this study. Gender, however, was a significant correlate with boys more than girls being both traditional bully and cyberbully offenders. This result is similar to earlier research suggesting boys are at more risk than girls in terms of perpetration (e.g., Erdur-Baker, 2010). Trait anger was associated

with traditional bullies and traditional bully-victims in this research. This finding was consistent with other literature regarding the role of anger in traditional bullying perpetration (Lovegrove et al., 2012). However, a new finding was that trait anger was associated with being in the traditional-and-cyber bully group. This finding was not surprising since traditional bullies are also likely to act as cyberbullies (Perren & Gutzwiller-Helfenfinger, 2012).

The religious makeup of the school setting was not significantly related to any type of bullying perpetration behavior. This finding contradicts some of the existing literature (e.g., Bellmore et al., 2004; Turner et al., 2014) reporting that classroom makeup had an impact on bullying perpetration behaviors of the students. As this is one of the earliest studies investigating the impact of school setting regarding traditional bullying and cyberbullying in Australia, reasons for this contradiction can only be surmised. One explanation could be that as an integrated multi-cultural society, acculturation occurs rapidly with young people from all religious backgrounds. Further studies are needed however, to examine the impact of the school setting on traditional bullying and cyberbullying perpetration.

Witnessing interparental conflicts at home was only associated with students in the traditional bully-victim group. This result is in line with previous research reporting a relationship between experiencing parental conflicts at home and acting as a traditional bullying offender (Christie-Mizell, 2003). Higher levels of interparental conflicts are expected to increase the likelihood of perpetrator behaviors. Yet, the result of this research suggested the opposite. It was found that when interparental conflict at home increased, the likelihood of being a traditional bully-victim decreased. To examine the reason for this contradiction, whether the religious makeup of the school setting had an impact on reporting interparental conflicts at home was considered. Thus, the analysis was run excluding the students at the two Islamic schools. This time, interparental conflicts were significant for the



traditional-bully group again ( $b= 0.19$ , Wald  $\chi^2(1)= 3.98$ ,  $p < .05$ ), and the relationship was positive suggesting more interparental conflict was associated with more traditional bullying perpetration. Therefore, the religious atmosphere that students experience at school and at home can be assumed to be a reason either preventing them from reporting interparental conflicts at home or there might not be as many conflicts.

Moral disengagement was a significant correlate for students who were in three categories, the traditional bully, traditional bully-victim and traditional-and-cyber bully perpetrators. This result is consistent with the evidence from the extant traditional and cyberbullying literature (Gasser & Keller, 2009; Wachs, 2012). Empathy training has been suggested as an efficient intervention for bullying perpetration (Şahin, 2012). In addition to empathy training, developing methods to improve the moral reasoning skills of the traditional bullying and cyberbullying perpetrators may offer new challenges for researchers interested in prevention and intervention strategies.

This study provided support for the hypothesis that being less connected to school is associated with traditional bully-victim offenders. This finding is compatible with the research literature indicating a relationship between school connectedness and traditional bullying perpetration (Arslan et al., 2012). However, the results of this current research did not support the anticipation of a possible connection between school connectedness and cyberbullying perpetration. The nature of the cyberbullying behavior may be the reason of this contradiction since cyberbullies can act inside or outside the school by using electronic devices such as mobile phones or computers. Nevertheless, more investigation is required to establish the nature of the association between school connectedness and cyberbullying.

None of the variables in this research was related to being in the cyberbully perpetrator group in this research. This finding implies that cyberbullying may be different

from traditional bullying in several aspects such as anonymity of the cyber environments, absence of adult supervision and 24/7 availability of the victims (Tokunaga, 2010). On the other hand, this finding contradicts research suggesting significant overlap between traditional bullying and cyberbullying (Erdur-Baker, 2010; Wachs, 2012). Thus, future research examining the similarities and differences of traditional bullying and cyberbullying perpetration would contribute to the literature.

Overall, the findings of this current study provided additional evidence validating Bronfenbrenner's *Ecological Systems Theory* (1994). The results showed that the variables in the individual characteristics level (age, gender, trait anger and moral disengagement), and the variables related to the microsystem level (interparental conflicts, school connectedness and school setting) had significant impacts on traditional and cyberbullying perpetration.

#### *4.1. Limitations and Strengths*

First, the results of this study cannot be generalized because of the convenient nature of our sample. Parental education levels of the participants were quite high. Therefore, cross validation studies with different parental education levels would be interesting to validate the findings of the current study. Also, causality cannot be inferred because of the correlational nature of the research. Additionally, the use of self-report measures may lead to distorted representations of personal experiences and opinions. The categorizations of the perpetrator groups (see Table 2) were performed in accordance with the research reporting an overlap between traditional bullying and cyberbullying (Erdur-Baker, 2010; Wachs, 2012). However, as the identified perpetrator groups were not homogenous in terms of their compositions, this may distort the findings regarding each category of the different perpetrator roles. Despite these limitations, some strengths of this research are notable. This study is one of the first which specifically investigates the associations of several variables with traditional bullying

and cyberbullying perpetration behavior amongst Australian school children. Additionally, this study is distinct with its focus on a social-ecological theoretical framework which includes the larger social system considering not only the individual but also the family and the school.

#### *4.2. Implications*

Our findings indicated that besides individual variables, the family and school environment are influential in traditional and cyberbullying perpetration behavior. This result implies that any prevention attempts to reduce traditional and cyberbullying should consider students' experiences both at home and at school. This study also found that students who bully others did so in both the physical and cyber environments, and some were traditionally or cyber victimized as well. Therefore, school counseling centers need to update their prevention and intervention programs regarding the co-existence of bully and victim student behaviors in traditional and cyber settings.

Moreover, being male was found to be highly correlated with both traditional and cyberbullying perpetration. Considering this gender difference, school counseling centers may need to put in place preventive programs or anti-bullying practices especially for male students. Results revealed that trait anger and moral disengagement were significant correlates affecting traditional and cyberbullying perpetration. Policies and practices intended to improve anger management and moral reasoning skills of the students can assist schools to promote the health and well-being of students who are perpetrators. Results also indicated an association between students experiencing interparental conflicts at home and being a traditional bully-victim at school. Parents need to be informed that conflict at home could lead to their children modeling this behavior in school.

This research found that students who were not connected to school tended to engage more in bullying perpetration. From this perspective, the emotional attachment of the students towards their school seems to play a critical role in students' bullying perpetration behavior. Therefore, school-wide efforts to improve school connectedness may help school children avoid the negative effects of bullying perpetration.

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