FROM TRADITIONAL FACE-TO-FACE BULLYING TO CYBERBULLYING: WHO CROSSES OVER?

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ABSTRACT

A total of 3956 children aged 12-13 years who completed the Longitudinal Study of Australian Children (LSAC Wave 5) were studied about their experiences of traditional face-to-face bullying and cyberbullying in the last month. In terms of prevalence, sixty percent of the sample had been involved in traditional bullying as the victim and/or the offender whereas eight percent had been involved in cyberbullying as victim and/or offender. The vast majority (95%) of those involved in cyberbullying were also involved in traditional bullying. Children involved in both traditional bullying and cyberbullying were compared with those involved in only traditional bullying. Boys were more likely to be involved in both types of bullying than girls. Children with friends involved in delinquent activities and who did not have trustworthy and supportive friends were more likely to bully both traditionally and in cyberspace. Computer proficiency and use did not differentiate children who had crossed over from those who had not, although computer use for socializing purposes had some predictive value in identifying those children who crossed over. The study reflects the value of school interventions for children as they approach adolescence, covering both traditional bullying and cyberbullying, and targeting social relationships in order to teach children how to manage them safely and intelligently.

Schools are often referred to as a microcosm of society. Children acquire skills, learn to cooperate and compete with those skills, absorb social norms for interacting with others, and master their society's codes for what is right and wrong (Macready, 2009). As schools come under pressure to meet performance targets for literacy and numeracy and as budgetary constraints increase, parents and civil society are expected to play a more significant role in

the education of their children. While partnerships across the school-community divide should always be sought and encouraged, this paper argues for strengthening school institutions, and in particular anti-bullying programs in schools. Schools can provide educational and social leadership to meet the new social challenges around technology. Digital technology enhances learning opportunities and empowers individuals. It can also be oppressive for some, even destroying lives.

BACKGROUND: DEALING WITH CYBER-BULLYING AMONG SCHOOL-AGED CHILDREN

Children born in the new millennium have never experienced the world without internet and are rightly called the “Net Generation”. Households with children are highly likely to have internet access. The figure is 96% in Australia (ABS: Australian Bureau of Statistics, 2014) and 97% in the UK (ONS: Office for National Statistics, 2013). In the US, the figure is somewhat lower; according to the 2013 US Census, 81% of children of up to 17 years lived in households with internet connection. Nonetheless, more US households with dependent children have internet access than those without (File and Ryan, 2014).

As children use the internet more broadly, including for social networking and collaborative learning experiences (Beran and Li, 2005; Borzekouski and Rickert, 2001; Campbell, 2005; Crammer, 2006; Russell *et al.*, 2003), concern has arisen around their safety with regard to cyberbullying and internet predation. So far, involvement in cyberbullying has been related to school absence (Cross, Lester and Barnes, 2015), deficits in academic performance and social skills (Cook *et al.*, 2010; Yang *et al.*, 2013), poor mental and emotional health (Devine and Lloyd, 2012; Schoffstall and Cohen, 2011; Spears *et al.*, 2015; Tokunaga, 2011; Ybarra and Mitchell, 2004), low self-esteem and poor peer relationships (Schoffstall and Cohen, 2011; Patchin and Hinduja, 2010a). Perhaps most disturbing for societies with high youth suicide rates (Wasserman, Cheng, and Jiang, 2005) is that cyberbullying has been linked with suicidal ideation (Klomek, Sourander and Gould, 2011; Patchin and Hinduja, 2010b). The anecdotal evidence of the harm done to those involved in cyberbullying is rapidly accumulating, creating something of a moral panic in society around risks to children from cyberbullying (e.g., Smith *et al.*, 2008). There have been calls for greater efforts to ensure online safety through public

and school education campaigns, particularly those promoting respectful online communication (OECD, 2012). There have also been calls for the government to regulate internet activity to control cyberbullying and to introduce laws to prosecute cyberbullies (AUCRA, 2010).

This paper addresses the question of the extension of school-based traditional anti-bullying programs to deal with problems of cyberbullying. Anti-bullying programs are now readily accessible, if not well established (Cross *et al.*, 2015), in most schools in developed countries. It is likely to be more efficient to extend such programs into the cyberbullying domain, rather than focusing on stand-alone cyberbullying interventions. This would only make sense, however, if a common set of problems underpinned cyberbullying and traditional bullying, and if there was overlap in the children affected by cyberbullying and traditional bullying. Such overlap was not impressive when Ybarra, Diener-West and Leaf (2007) conducted their study on internet harassment and school bullying. More recently, Cross *et al.* (2015) in an Australian study have reported significant overlap among their sample of adolescents, in so far as the vast majority of those involved in cyberbullying also had experiences of traditional bullying. There appears to be a *prima facie* case for investigating the viability of integrated traditional-bullying and cyberbullying interventions rather than implementing separate programs for the two types of bullying.

This paper examined this issue more deeply through pursuing two lines of enquiry, focusing on the group of children who crossed over from traditional to cyberbullying and those who only were involved in traditional bullying. The focus was not particularly on victims or bullies. Being either or both suggested that an intervention program could be appropriate. The first line of enquiry involved looking for features that were distinctive in how these groups of children engaged with digital technologies. The second line of enquiry looked for distinctiveness in social engagement and social relationships. If the behaviours of the traditional bullying group were vastly different from the behaviours of the traditional bullying and cyberbullying group, separate programs might be recommended. If, on the other hand, their behaviours differed in degree rather than kind, integrated programs would undoubtedly be more cost effective from the point of view of training staff and delivering the “no bullying” message.

Defining cyberbullying and its relationship with traditional bullying – same or different?

Cyberbullying is generally considered to occur when one person (or a group of persons) repeatedly harasses, mistreats or makes fun of another person online or via mobile phones, email or instant messaging or social media, e.g., Facebook, Twitter (Cross *et al.*, 2009; Kowalski and Limber, 2007; Patchin and Hinduja, 2010a). While the general definitional essence of traditional bullying,¹ that is, intentionality of behaviours, repetitiveness of behaviours and power imbalance between perpetrators and victims (Olweus, 1994) are accepted in the conceptualization of cyberbullying by most cyberbullying researchers (e.g., Langos, 2012; Levy *et al.*, 2012; Patchin and Hinduja, 2010a; Ybarra and Mitchell, 2004), the significance and importance of these characteristics changes in the cyber-environment.

“Repetitiveness”, a significant part of traditional bullying behaviour, takes an unexpected turn once one malicious message goes viral on a social networking site (Langos, 2012; Stacy, 2009). Defining the power imbalance in the cyberbullying context also is a challenge. Finkelhor *et al.* (2012) rightly point out that defining a *“power imbalance”* in the cyberbullying context is technically difficult. Where there is anonymity of perpetrators via an online medium, the relational power between bully and victim becomes unverifiable (Vandebosch and van Cleemput, 2008; Ybarra and Mitchell, 2004). *“Intentionality”* applies to cyberbullying as much as it does to traditional bullying, but in both contexts, intentionality is a difficult concept to use for definitional purposes because in practice it is open to cover-ups and misunderstandings. In the context of cyberbullying in particular, the intentionality of the perpetrator becomes less relevant once the message goes viral.

Arguably, cyberbullying is a more sinister form of aggression than traditional bullying. Perpetrators do not have to reveal themselves. The act of a cyberbully can be viewed over and over again and shared with others virtually without limit. And it is hard for support networks to shield victims from their cyber aggressors (McGrath, 2009). In summary, cyberbullying occurs on a broader, seemingly omnipresent, scale compared to traditional

¹ Traditional bullying is a term used by Smith *et al.* (2008) to refer to (general) bullying which has been researched extensively over a long period of time. It is also referred to as offline bullying (Cross *et al.*, 2009), conventional or face-to-face bullying to differentiate bullying in general from cyber-/online-bullying. In the present study, these terms will be used interchangeably, as with cyberbullying and online bullying.

bullying, without physical violence admittedly, but with capacity to do enormous harm to reputation, emotion, and social interactions, and out of sight of those who may call the behaviour to account.

That said, cyberbullying and traditional bullying share the common feature of being behaviours that communicate disrespect and domination. Traditional bullying is known to be linked to other forms of aggression and to have similar causal agents (Homel, 2013). Psychological connections between traditional bullying and cyberbullying have also been postulated, with a degree of empirical support (e.g., Cross *et al.*, 2009; Dempsey *et al.*, 2011; Li, 2007; Juvonen and Gross, 2008; Raskauskas and Stoltz, 2007). Cyberspace becomes another place where perpetrators are able to intimidate their victims, using power just as they do in the schoolyard. The expression of dominance may not be physical, but it is emotional and psychological (Slee *et al.*, 2010).

Routine Activity and Computer Mastery

However, critics question whether there is a direct transfer from traditional bullying to cyberbullying. Indeed, Schoffstall and Cohen (2011) found no relationship between traditional bullying and cyberbullying. One body of work explains the absence of a strong connection through focusing on the technical experience and knowledge necessary for cyberbullying. Typifying this approach is the application of routine-activities theory to explain the relationship between being a cyberbullying victim and a high internet user (Smith *et al.*, 2008). In order for cyberbullying to occur, bullies need some knowledge about their victims. In order to be targeted, victims need exposure, that is, they need to dwell in cyberspace. Thus, online presence is the factor that leads to a high risk of online victimization by those who know how to use the internet for such purposes. U.K. adolescents who were victimised via cyberbullying were found to be heavy internet users compared to non-cyberbullying victims (Smith *et al.*, 2008). American teenagers most at risk of being cyberbullying victims were actively involved in social networking (Mesch, 2009).

Others have considered the sense of agency that children have when they find they have the technical opportunities and capability in the virtual world to experiment online. Cyberbullies tend not only to be heavy internet users (Kowalski and Limber, 2007; Lindsay and Krysik, 2012; Schoffstall and Cohen, 2011; Walrave and Heirman, 2011; Ybarra and Mitchell, 2004), but also

to engage in risky behaviours online (Kowalski and Limber, 2007; Mishna *et al.*, 2011; Walrave and Heirman, 2011) and perceive themselves as computer experts (Ybarra and Mitchell, 2004). These findings suggest that a sense of computer mastery may be as important as time spent using digital technology for cyberbullying to occur.

Changing Social Roles

A second approach to understanding why traditional bullying may not translate into cyberbullying focuses on the way in which social dynamics change when moving from one bullying form to another. In particular, roles are no longer so clearly defined because power moves from one person to another as in a game where protagonists are trying to win against the other. In a qualitative study, Law *et al.* (2012) observed children taking more notice of the tools used in cyberbullying and showing less awareness of the roles of being a bully and being a victim. Others have found evidence of fluidity in moving between the roles of traditional bully and cyber victim (Yang *et al.* 2013) and between the roles of being a cyberbully and cyber victim (Kowalski and Limber, 2007). These findings suggest that an important research question may be to identify who is at most ease moving into a cyberbullying environment where power changes hands and children change between victim and bully roles on demand.

Previous work on traditional bullying has identified bully-victims as the role changers and as a group that grapples with a range of adjustment issues, psychologically, socially, at school and at home (Ahmed *et al.*, 2001; Austin and Joseph, 1996; Haynie *et al.* 2001; Kumpulainen *et al.*, 1998; Veenstra, 2005). Smith *et al.* (2008) found that bully-victims in face-to-face bullying situations were more likely to be cyberbullies. Patchin and Hinduja (2008) have reported that children who engaged in cyberbullying tended to interpret their actions as revenge against offline bullies who “deserved it”. Others have reported traditional victims becoming cyberbullies in order to turn the table on offline bullies, using the anonymity of cyberspace to do so (Cassidy, Jackson and Brown, 2009; Ybarra and Mitchell, 2004). Consistent with these findings, young people perceived to be powerful and threatening in real life were found to be the more likely victims of cyberbullying (Raskauskas and Stoltz, 2007; Yang *et al.*, 2013).

While some children are trying to regain control of their lives by retaliating against someone who has harmed them, others appear to have other frustrations that they deal with through

cyberbullying. Yang *et al.* (2013), in a Korean study have argued that children with academic or emotional problems turned to their computers to express their aggression online (although they may not engage in face-to-face bullying). It seems plausible that pressure to achieve may lead children and adolescents in western societies also to deal with their stress by hiding behind their computer screens and engaging in cyberbullying. Cyberbullies have displayed higher anxiety, lower self-esteem and lower academic motivation compared to non-cyberbullies in western studies (e.g., Patchin and Hinduja, 2010a).

Hypotheses

This study first seeks connections between traditional bullying and cyberbullying. *Hypothesis 1 proposes that high involvement in traditional bullying as victim or offender will be associated with high involvement in cyberbullying as victim or offender.* Children who identify with or become part of delinquent subcultures are likely to be involved in both traditional and cyberbullying. Both domains provide the opportunity for children attracted to delinquent subcultures to express aggression and annoyance toward each other and show defiance against the rules.

The arguments for disconnection between traditional bullying and cyberbullying fall into a bundle of technical and social reasons. Children are unlikely to extend their bullying activities into cyberspace unless they have familiarity and capability with digital technology. Given the high internet usage amongst children these days, the relevant reference point may no longer simply be usage, but rather capability and interest in using cutting edge technologies for carrying out cyberbullying. Coming out on top in a cyberbullying contest requires familiarity with methods that inflict most harm with low risk of detection. Interest requires engagement with social media of some kind. *Hypothesis 2, therefore, is that children who are most likely to be involved in cyberbullying as well as traditional bullying have a higher sense of mastery over internet technologies and are more frequent users of such technologies for social purposes (as opposed to educational or skill development purposes).*

The third hypothesis puts forward a social reason for extending involvement in traditional bullying into cyberspace. *Hypothesis 3 is that children who feel socially unsupported and marginalised may be more at risk of carrying bullying beyond the traditional domain, off-*

loading their grievances, frustration and stress through involvement in cyberbullying, or searching for support.

The fourth hypothesis concerns role changers: *Bully-victims are singled out as the group in traditional bullying that was most likely to be also involved in cyberbullying (Hypothesis 4).* Bully-victims are practiced in the changing roles of bully and victim that are characteristic of cyberspace. As power imbalances are disrupted in cyberspace, bully-victims may see their chance of coming out on top improve. Furthermore, bully-victims have repeatedly been found to have a range of adjustment problems at school and at home (Ahmed and Braithwaite, 2004; 2012; Ahmed, 2001; Haynie *et al.*, 2001; Kumpulainen *et al.*, 1998; Veenstra *et al.*, 2005). They tend to be children who suffer most in being unable to fit into supportive and pro-social friendship groups at school. They are most likely to be disliked at school, perform badly at school and come from non-supportive homes. They are more likely to be drawn to aggression and delinquent activities. For all these reasons, it is likely that they will be most likely to act out their frustrations and grievances on the internet, as well as to seek the support that they do not receive at school or home.

Design

This paper examines traditional bullying and cyberbullying among children on the cusp of adolescents. The approach taken is to first classify children in terms of their traditional bullying status (bullies, victims, bully-victims and non-bully/non-victims). Recent cyberbullying experiences are then examined in relation to traditional bullying experiences. This analysis provides a descriptive account of how traditional bullying and cyberbullying are related in a random sample of 12-13 year old Australian children.

The next analysis contains the primary contribution of this paper, a comparison of children who inhabit both worlds of bullying – traditional and cyber – with those whose bullying involvement has not extended to cyberspace. The question asked is whether inhabiting both worlds requires high levels of exposure to and mastery of digital technology. Or is involvement in both traditional and cyberbullying the wont of children who are experiencing social deficits in terms of the quality and quantity of their social contact. The data used for this study are

from Wave 5 of the data from *Growing Up in Australia: the Longitudinal Study of Australian Children* (LSAC).²

Data and Participants

Growing Up in Australia: the Longitudinal Study of Australian Children (LSAC) is a major survey following the development of 10,000 children and families from all parts of Australia. Its prime purpose is to identify individual, familial and social-environmental factors that determine a child's socio-emotional, mental, psychological, physical and behavioural outcomes. The survey revisits children, parents and their teachers every two years to track growth and development over time and map the trajectories of Australian children's early life course and of their families (<http://www.growingupinaustralia.gov.au/>). The sample was designed to be nationally representative and was recruited through Medicare Australia.³ The study is co-managed by three Commonwealth agencies: the Australian Department of Social Services (DSS), Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). The study commenced in 2004 with two cohorts (B cohort: 0–1 year olds; K cohort: 4–5 year olds).

The present study uses Wave 5 LSAC data collected from the older cohort (i.e., K Cohort). In 2012, at Wave 5, 3956 children in the K cohort (ages 12 to 13 years) completed the interview. The response rate of those potentially available for interview at Wave 5 was 83.2%, comprising 51% boys (N=2020) and 49% girls (N=1936). The children were interviewed from March through to December 2012. Interviewers were trained by the ABS.

For the purposes of validating some of the above measures, selected questions relating to bullying were taken from the parents' and teachers' responses for the children in Wave 5. Questions on time spent on electronic activities using the internet and computers also were taken from the parent's data.

Variables

² This is the first wave when data have been collected on both cyber bullying and traditional bullying.

³ The sample was selected from the Medicare enrolment database held by the Health Insurance Commission, as the database is the most comprehensive database of Australia's population (Soloff, Lawrence and Johnstone, 2005). The Health Insurance Commission selected children of the appropriate ages and sent an invitation letter to the Medicare cardholder (<http://www.growingupinaustralia.gov.au/>).

Details of the measures of each variable used for the analyses are provided in the Appendix.

Dependent variables

Bullying perpetration and victimization was measured through self-report items adapted from the school climate bullying scale (Brockenbrough, 2000). Children responded to 6 items on how much they had been involved in traditional bullying as perpetrator and/or victim in the last month (e.g., hit or kicked, threatened, said mean things). One additional item measured involvement in cyberbullying or cyber victimisation in the last month.

Independent variables

Several measures were taken of *computer and internet use* drawn from the student questionnaire of PISA (2006, cited in OECD 2010) and the Longitudinal Survey of Australian Youth (NCVER, 2009). Fifteen questions asked children how often they used computers for a range of activities. A principal components analysis produced three factors representing the following types of activities: (1) using computer and internet for homework or learning, including writing documents, creating spreadsheets, and/or using other software; (2) using computer and internet for socializing, including maintaining and/or spending time on social networking sites; and (3) using computer and internet for individual entertainment of a non-socializing nature, including downloading applications and media, uploading media to internet, and watching TV via internet. Psychometric information (including Cronbach's alpha coefficient) for the scales that were formed on the basis of the factor analysis is displayed in the Appendix.

A further set of questions assessed children's self-reported competence with computer devices (e.g., copying electronic information between devices, or attaching a file to an email or writing computer codes). This was a measure of computer mastery.

Another means of cyberbullying is via texting on mobile phones. For this reason, children were asked to indicate how many texts they sent and received the previous day. These measures

were highly correlated ($r=.93$; $p<.001$), and were therefore combined to give a total number of texts sent and received in one day.⁴

Measures of type and quality of social engagement were selected to capture the extent to which children were enmeshed in both school and family social networks of a positive and negative kind. Children indicated how much they mixed with others at school and in the neighbourhood. The measures represented being part of (1) a pro-social peer group who adjusted well at school (e.g., they work hard at school); and (2) a rebellious peer group who broke school rules and norms and laws (e.g., they get into a lot of trouble at school). Questions were adapted from the “What My Friends Are Like Questionnaire” of the National Institute of Child Health and Human Development (Oliveri and Reiss, 1987). Children also self-reported on frequency of delinquent activities in the last 12 months, using 17 items adapted from Moffit and Silva’s Self-Report Delinquency Scale (1988).

The remaining scales measured the degree to which children had friends and family who were supportive, trustworthy and respectful. The measures were taken from the *Inventory of Peer and Parental Attachment: Trust and Communication* (Armsden and Greenberg, 1987) and the *People in My Life inventory* (PIML; Cook *et al.*, 1995; Ridenour *et al.*, 2006).

Among sociodemographic data collected from parents, the gender of the study child was included in the analyses. Gender has proven to be an important predictor of face to face bullying, but the gender effect on cyberbullying is inconclusive (e.g., Beran and Li, 2005; Hinduja and Patchin, 2008; Lapidot-Lefler and Dolev-Cohen, 2015; Li, 2006). Parents’ responses to questions on bullying and victimization and on a child’s computer usage at home were used for validation purposes (see questions in the Appendix). Teachers’ responses to questions on bullying were also used for validation purposes (see questions in the Appendix).

Findings

Prevalence of traditional and cyberbullying prevalence

⁴ Responses of those children without mobile phones were recoded as “0” message sent/received for the analysis.

Among 3956 children who participated in Wave 5 interviews, 117 cases had missing values with regard to self-reported traditional bullying status. Cases with these missing observations were excluded from the main analyses.

Children's responses to the six-item scales (see the Appendix) to measure bullying and victimization by traditional means were averaged to produce a self-reported bullying score and a self-reported victimization score.

To assess the adequacy of the self-reported bullying measure, scores were correlated with parent's and teacher's reports of the child's bullying activities. These were general measures using one item and spanning a six-month period adapted from the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The correlations were .25 with the parent's index and .27 with the teacher's index ($p < .001$ in both cases). These coefficients are comparable with those reported by other researchers (Ahmed, 2001; Ahmed and Braithwaite, 2004).

The self-reported victimization scale yielded a correlation of .42 ($p < .001$) with parent's reports and .26 ($p < .001$) with teacher's reports. These correlations are also comparable with those reported elsewhere (Ahmed, 2001; Ahmed and Braithwaite, 2004; Ladd and Kochenderfer-Ladd, 2002). Parents are more likely to be aware of children being the victim of bullying and less likely to be aware of involvement as a perpetrator of bullying (e.g., Houndoumadi and Pateraki, 2001).

On the basis of the self-report measures, children were classified into four groups following a previously used methodology for differentiating different face-to-face bullying scenarios (Ahmed and Braithwaite, 2012): bullies (non-victim), victims (non-bully), bully-victims and non-bully/non-victims. In order to be classified as a non-bully/non-victim, children had to respond "never" to the questions on bullying someone in the last month as well as to the questions on being bullied by other(s) in the last month. All other children were distributed among the remaining three categories depending on their self-reported scores.

The offline self-report bullying measures revealed that 40% ($N=1552$) of children were neither bullies nor victims, 29% ($N=1110$) were victims without being bullies, 6% ($N=231$) engaged in bullying without being victims, and 25% were both bullies and victims ($N=946$). A Chi-square test for independence (with Yates continuity correction) indicated that with regard to

traditional bullying, being a perpetrator and being a victim were significantly related [χ^2 (1, $n=3839$)=489.3, $p<.001$, $\Phi=.36$]. Comparisons with an earlier study in New South Wales (Forero *et al.*, 1999) revealed comparable data, at least for non-bully/non-victims (34% to 45% compared to LSAC's 40%) and bully-victims (20% to 26% compared with LSAC's 25%). The match was less close for victims and bullies (12% to 18% compared with LSAC's 29% and 18% to 29% compared with LSAC's 6% respectively).

Next, the prevalence of cyberbullying was investigated. Only a small portion of children (8%) reported involvement in cyberbullying once or more in the past month via various information communication technologies. While the existing literature reported that traditional bullying happens more frequently than cyberbullying (e.g., Lapidot-Lefler and Dolev-Cohen, 2014), this low percentage is also likely to reflect both the short time frame for reporting (the last month) and the pre- or early adolescent age group under study (12-13 year olds). The rate of reporting of cyberbullying appeared consistent with other studies (Cross *et al.*, 2009; Rigby and Smith, 2011) when variations in time frames for self-reporting were controlled.⁵

Self-reported cyberbullying data, as perpetrator or victim, was collapsed into the four categories that corresponded to the categories used above for traditional bullying. The self-report cyberbullying measures revealed that 92% ($N=3534$) of children were neither bullies nor victims, .7% ($N=27$) engaged in bullying without being victims, 6% ($N=234$) were victims without being bullies, and 1% were both bullies and victims ($N=45$). A Chi-square test for independence (with Yates continuity correction) indicated that cyberbullying perpetrators were also more likely to be cyberbullying victims [χ^2 (1, $n=3840$)=323.9, $p<.001$, $\Phi=.29$]. Of note is the finding that the relationship between bullying and being a victim is comparable for traditional bullying and cyberbullying.

The relationship between traditional bullying and cyberbullying experiences

⁵ Cross *et al.* (2009) found that the overall rates of being victimised using technology was 6.6% and of being engaged in cyberbullying 3.5% "in the last term of school". According to the findings from "the AU Kids online" survey between 2010 and 2011 (Green *et al.*, 2011), 5% of children reported that they had been bullied online in the past 12 months. Using an English longitudinal study by Rivers and Noret (2010), Rigby and Smith (2011) showed that the proportion of children who cyberbullied regularly (at least once a week) over a 4-year period (2002 – 2006) was between 2 and 3%. Taking the timeframe used for LSAC (i.e., 30 days) into account, the prevalence seems to be comparable with these other studies. With regard to the age group studied, Cross *et al.* (2009) found the rate of cyberbullying increased with age, from 2.2 to 4.6% when children in Year 6 were compared with children in Year 7.

Table 1 presents the breakdown of how individuals in each of the four types of traditional bullying (far left column of non-bully/non-victims, victims, bullies, bully-victims) experienced cyberbullying. From Table 1, the most important finding is that the majority of children in each of the traditional bullying groups did not experience cyberbullying as victims or perpetrators in the preceding month. Interestingly only 15 children were involved in cyberbullying without involvement in traditional bullying. Below the results are discussed for each group in the traditional bullying schema.

Among *traditional non-bully/non-victims*, over 99% are cyber non-bully/non-victims.

Among *traditional victims*, over 91% are cyber non-bully/non-victims. The next most likely outcome is that they will be cyber victims (9%). If a traditional victim is involved in any guise in cyberbullying, it is most likely to be as a victim.

Among *traditional bullies*, over 94% are cyber non-bully/non-victims. The next most likely outcome is that they will be cyberbullies (4%). If a traditional bully is involved in any guise in cyberbullying, it is most likely to be as a cyberbully.

Traditional bully-victims are also most likely to be cyber non-bully/non-victims (82%). As proposed in Hypothesis 4, however, the percentage of traditional bully-victims who were also involved in cyberbullying was higher than for the other three traditional bullying groups (non-bully/non-victims, victims, and bullies). While 82% of bully-victims are not involved in cyberbullying, a relatively high 18% have been involved in the last month in some form – as victim, bully or bully-victim. To test the statistical significance of these descriptive data (and Hypothesis 4), the data were collapsed into traditional bully-victim versus other traditional groups, and into involvement in cyberbullying versus no involvement in cyberbullying. These two new collapsed variables were cross-tabulated. A 2x2 chi-square test of independence was carried out to show a significant relationship: As predicted in Hypothesis 4, traditional bully-victims are most at risk of being involved in cyberbullying [χ^2 (1, n=3840)=220.1, $p<.001$, Phi=.24]. The data in Table 1 provide a descriptive breakdown for how bully-victims are distributed among the cyberbullying categories. Most of the 18% with cyberbullying involvement are cyber victims (13%). Only 4% maintain their categorization as bully-victims in cyberspace.

The results in Table 1 show a positive link between traditional bullying and cyberbullying. The data were collapsed into a 2X2 table for a chi-square test of independence. Being a member of the traditional bullying group as victim or perpetrator (versus no involvement) was cross-tabulated against being a member of the cyberbullying group as victim or offender (versus no involvement). The chi-square test of independence was highly significant [χ^2 (1, $n=3839$)=172.6, $p<.001$, $\Phi=.21$]. Those not involved in traditional bullying in any form were highly unlikely to be involved in cyberbullying in any form. These findings support Hypothesis 1.

Hypothesis 1 is supported in so far as there is a relationship between the two types of bullying. But the expectation that those high on traditional bullying involvement would also be high on cyberbullying involvement is not supported. The absolute levels of engagement for each type of bullying show a sizeable proportion involved in traditional bullying and only a very small percentage involved in cyberbullying. Bullying is far more likely to occur through traditional methods than through cyberspace for children in this sample. Sixty per cent were involved in traditional bullying as victim or perpetrator, 40% were not involved. One per cent of those not involved in traditional bullying were involved in cyberbullying. Thirteen per cent of those involved in traditional bullying were involved in cyberbullying. There seems to be an additional factor (above and beyond traditional bullying) that pushes a small minority of 12-13 year olds into cyberspace to continue bullying online.

How do children involved in both traditional and cyberbullying differ from children only involved in traditional bullying?

Traditional bullying has been postulated as the most appropriate reference point for this study for practical reasons: intervention programs for traditional bullying are well known and widely available and extending their brief seems more sensible than creating something new. The data reported so far in this paper support extending traditional programs because cyberbullying is more likely to occur within groups who are engaged in traditional bullying – only 15 children (.4% of the sample) were involved in cyberbullying without being involved in traditional bullying.

The analyses that follow focus on how children who were involved in both traditional and cyberbullying differed from those whose bullying activities were limited to traditional

methods. The traditional and cyberbullying group incorporated all roles – victims, perpetrators and bully-victims (N=291) – as did the traditional only bullying group (N=1996). The assumption made in this analysis, informed largely by our previous work on traditional bullying, is that involvement in bullying activities is detrimental to children, regardless of whether they are playing the role of bully or victim (Ahmed, 2001). The 1552 children (40%) who had not been involved in traditional bullying as victims or perpetrators were excluded from the following analyses.

Computer and internet use and capability

Independent t-tests were used to compare the ‘only traditional bullying’ group (OTB) with the group of children who were involved in ‘both traditional and cyberbullying’ (BTCB) in terms of computer and internet use and capability measures. To compensate for the problem of capitalising on chance with multiple t-tests, the more rigorous significance level of .001 is adopted throughout. A multivariate logistic regression analysis is presented later in the paper to clarify the relative importance among the multiple indicators that are the focus of this paper. Initially, however, the objective was to explore differences among a set of measures that shared common content but were slightly different, to aid uncovering more nuanced differences between the groups.

Table 2 presents the results of the computer/internet analyses. All differences are in the expected direction with the exception of using the computer for homework and learning. However, not all differences were statistically significant at the .001 level.

The traditional bullying (OTB) group and the traditional and cyberbullying (BTCB) group were significantly different on use of the computer and internet for time spent socializing ($M=2.88$, $SD=1.14$ and $M=2.00$, $SD=1.37$ respectively; $t=-11.88$, $p<.001$). The BTCB group used computer and internet for individual entertainment purposes more than the OTB group but this was not significant at the .001 level. No difference was found between the two groups in terms of using computer and internet for homework and learning.

In terms of capability, the BTCB group scored higher than the OTB group on mastery of computer skills, but this was not significant at the .001 level.

The BTCB group scored significantly higher than the OTB group on the number of texts sent and received daily ($M=5.31$, $SD=10.55$ and $M=2.48$, $SD=7.12$ respectively; $t=-4.42$, $p<.001$).

These findings provide partial support for Hypothesis 2. Children involved in both traditional and cyberbullying are significantly more likely to be engaged in socializing online and use mobile texting more for communication. They did not, however, show significantly higher capability or mastery with regard to computer skills, nor did they use the computer and the internet significantly more for personal entertainment, homework or learning activities. With the exception of homework and learning, all differences were in the expected direction.

In order to provide a validity check on these results, parents' reports of the time the child spent on the computer on average per week were compared for the OTB and BTCB groups. Two measures were taken from parents: time spent playing electronic games/watching movies and time spent on 'other activities' on the computer. Other activities were defined for parents as writing documents, downloading material, editing digital photographs, or social networking. The BTCB group ($M=484.64$, $SD=349.45$) spent significantly more time (minutes) in the average week on 'other activities' than the OTB group ($M=359.95$, $SD=322.04$) ($t=-5.74$, $p<.001$). The difference was just over two hours. For electronic games, the trend in time use was the reverse. The BTCB group spent less time on computer games than the OTB group, though the difference was not statistically significant at the .001 level ($M=381.69$, $SD=344.20$ and $M=424.19$, $SD=327.14$ respectively). Findings with parent data validated the findings based on children's self-reports.

Type and quality of social engagement

The traditional bullying group (OTB) and the cyberbullying and traditional bullying group (BTCB) were expected to differ in terms of types of social engagement. More specifically, children who were part of delinquency subcultures with norms of rebellion and rule breaking were expected to accept no boundaries in how and when they were involved in bullying.

Table 3 compares the OTB and BTCB groups in terms of delinquent behaviours, having peers who broke school rules and were mean to others. Also included is a measure of having pro-social peers who work hard, do well, are good at sport and are respectful of teachers. This

scale was included to measure the extent to which children were rejecting the identity of “a good school citizen”.

Interestingly, the average scores for the children in both the OTB and BTCB groups were around the midpoint of the pro-social peer scale. The average scores for both groups on engaging in delinquent behaviours, having peers who broke school rules and were part of a bullying culture, and peers who broke the law (including substance misuse) were consistently well below the midpoint of the scale. Overall, these children were not alienated or disengaged from mainstream school culture, which has important implications for interventions.⁶

The mean scores in Table 3 show that the BTCB group had higher scores compared with the OTB group on delinquency ($M=.21$, $SD=.51$ compared with $M=.09$, $SD=.24$; $t=-4.00$, $p<.001$) and having peers who broke the school rules and were mean to others ($M=2.06$, $SD=.68$ compared with $M=1.74$, $SD=.56$; $t=-7.50$, $p<.001$). The BTCB group had lower scores than the OTB group on having pro-social peers ($M=3.48$, $SD=.75$ compared with $M=3.65$, $SD=.68$; $t=3.53$, $p<.001$).

The above measures tapped into who children were spending their time with, how they positioned themselves in relation to school and how much they were immersed in a delinquency and rule breaking subculture. Quite a different aspect of children’s social engagement has less to do with what they do and whom they mix with, and more to do with who stands by them, supports them and is trusted by them. To put it another way, are there other children or adults whom children in the OTB and BTCB groups can relate to, talk to about their troubles, and can count on for help and guidance? These are measures of the quality of children’s social engagement.

Table 4 presents the means for the OTB group and the BTCB group on trust in peers and trust in parents. Significant differences emerged in relation to having trust in others. Those in the BTCB were less likely to report having peers they trusted than children in the OTB group ($M=3.95$, $SD=1.03$ compared with $M=4.28$, $SD=.77$; $t=5.33$, $p<.001$). Similarly, the BTCB group

⁶ Further support for this position came from scores on a measure of empathy (SSRS; Gresham and Elliott, 1990). Scores for the 5 item scale ranged from 1 to 3. The means for both the OTB and BTCB groups were extremely high, 2.72 and 2.69 respectively.

expressed less trust in parents than the OTB group ($M=3.24$, $SD=.76$ compared with $M=3.43$, $SD=.64$, $t=4.23$, $p<.001$).

These findings support Hypothesis 3. Children who were involved in both traditional bullying and cyberbullying not only were more likely to affiliate with deviant groups, but also were less likely to have friends and families who accepted them, understood them, respected them, had time for them, and could be trusted by them.

Table 5 presents a final overall logistic regression model containing all variables tested so far. Gender of the child was chosen as a control variable. Gender has been an important differentiating variable in traditional bullying with boys more likely to be involved in overt bullying generally than girls (Beaty and Alexayev, 2008; Boulton and Smith, 1994). In LSAC Wave 5, a preliminary set of t-tests comparing boys and girls on the specific items that made up the traditional bullying and victimization measures revealed higher involvement from boys on five of the six measures. The higher prevalence of boys in traditional bullying is consistent with other studies (e.g., Seals and Young, 2003). However, the role of gender on cyberbullying is inconsistent in the literature. Some report no difference between boys and girls on cyberbullying (e.g., Beran and Li, 2005; Hinduja and Patchin, 2008); others found gender differences in victimization but not in cyberbullying perpetuation (Smith *et al.*, 2008). There have been some reports showing that boys were more likely to cyberbully than girls (Lapidot-Lefler and Dolev-Cohen, 2015; Li, 2006).

The full logistic regression model was statistically significant, $\chi^2(11, n=2287)=223.5$, $p<.001$, indicating that the model was able to distinguish two groups of interest. The model as a whole explained between 10% (Cox and Snell R Square) to 18% (Nagelkerke R Square) of the variance between BTCB and OTB groups.

Four of the 11 independent variables made a unique and statistically significant contribution to the model using the .001 cut-off. Three others were significant at the .05 or .01 levels but not at the more rigorous cut-off of .001.

Children were more likely to be in the BTCB group if they were boys, if they mixed with delinquent peers, if they reported not having peers whom they trusted and would support them, and if they had a higher usage of the computer for socializing.

The predictors that did not reach the .001 level of significance, but were significant at the .05 or .01 levels, were computer capability, sending and receiving text messages, and scoring highly on the delinquency scale. Not significant in the logistic regression were using the computer for homework and learning, using the computer for personal entertainment, having peers who were good school citizens, and being able to trust their parents.

The child's gender, a control variable, is not only a significant predictor but also the strongest predictor for being identified with the BTCB group with an odds ratio of 2.27; boys are twice more likely to be in the BTCB group than girls. Apart from the gender of the child, the strongest significant predictor of being in the BTCB group when controlling for all other variables was socialize with those who engaged in deviant behaviours such as breaking school norms and rules or laws, recording an odds ratio of 2.05. If mixing with delinquent peers increases by one unit, the likelihood of being in the BTCB group doubles. For socializing through the internet, the odds ratio is a little less at 1.53, meaning that for one unit increase in internet socializing the likelihood of a child being in the BTCB group increases by 1.5. In contrast, having trustworthy and supportive peers decreased the likelihood of being in the BTCB group; one unit increase in trusting relationship with peers reduced the likelihood of being in the BTCB group by .75.

Discussion

Raskauskas and Stoltz (2007) have raised the importance of understanding why some traditional bullies engage in cyberbullying, while others do not. The question was expanded in the current study to cover victims and bullies; what distinguishes children who crossover to be part of traditional bullying and cyberbullying? There was a practical reason for combining children who were victims and bullies; the number of cyberbullies identified in LSAC, as with other studies, was quite small. However, it was also due to the fact that significant overlaps have been found in the cyberbullying literature between bullies and victims (e.g., Cross *et al.*, 2009; Raskauskas and Stoltz, 2007) and similar results were replicated in LSAC.

The major findings in the present study are that children involved in cyberbullying are more likely to have experiences of traditional bullying, that the expansion of bullying activities from

traditional domains to cyberspace is not inevitable, and that children who are bully-victims in traditional contexts are most at risk of being involved in cyberbullying.

The findings provide support for Hypothesis 1, but with an important caveat. Involvement as a victim or offender in traditional face-to-face bullying and cyberbullying are related. But the proportion of children who crossed to cyberspace to be involved in cyberbullying from traditional bullying was small (13%). Among children involved in cyberbullying, 95% had been involved in traditional bullying. In sum, this sample of children are most likely to have to deal with face-to-face bullying, cyberbullying is far less likely than face-to-face bullying, and when cyberbullying occurs it is most likely in conjunction with face-to-face bullying. Together these findings underline the importance of the school as an institutional setting for educating children about bullying prevention and management.

Among the small number of children who were reporting involvement in cyberbullying ($n=306$), two findings stood out. Most importantly, in accordance with Hypothesis 4, the majority of children in the cyberbullying group (57%; 174 of 306 children) were children who were identified as both bullies and victims in traditional bullying. Those most vulnerable in the face-to-face school bullying context are the ones most likely to inhabit the world of cyberbullying. They do so primarily as victims. This raises the question of whether the children who enter the complex and unregulated world of social interaction on the internet are the children least well prepared in terms of the development of their social competence and emotional resilience.

A second finding of interest in the crossover is that victims of traditional bullying stayed in the victim role in cyberbullying ($N=96$ of the 306 children involved in cyberbullying), forming around a third of the cyberbullying sample. In the unlikely event that traditional victims stray into the world of cyberbullying, the chances are that they will experience victimization again and will not emerge as cyber “victors”.

Hypothesis 2 and 3 addressed explanations for similarities and differences between children only involved in traditional face-to-face bullying and children who had extended their activities to include cyberbullying. Hypothesis 2 put to the test the idea that cyberbullying has its roots in a different set of variables to traditional bullying, variables related to knowledge and use of digital technology. Hypothesis 3 explored the question of why researchers might

think of cyberbullying as “old wine in a new bottle” (e.g., Dempsey, *et al.*, 2011; Li, 2007; Raskauskas and Stoltz, 2007), drawing on traditional studies of bullying as a manifestation of power imbalance, domination, social deviance and social disengagement. Stronger support was found for the social-relational analysis of Hypothesis 3 than for the digital technology analysis of Hypothesis 2. Nevertheless, findings did not rule out the significance of digital technology completely.

This paper built on previous research (e.g., Kowalski and Limber, 2007; Lindsay and Krysik, 2012; Schoffstall and Cohen, 2011; Walrave and Heirman, 2011) to examine in more detail the types of internet/computer activities in which children said they engaged, the frequency (regularity) of those activities, the children’s digital self-confidence and the time spent on specific activities as reported by parents. The role of computers and the internet as cyberbullying facilitators was tested in Hypothesis 2: children who were more likely to be involved in cyberbullying as well as traditional bullying were expected to have a higher sense of mastery over internet technologies and be more frequent users of such technologies for social purposes (as opposed to educational or skill development purposes).

Evidence to support Hypothesis 2 was mixed. Support was not found for the hypothesis that frequent usage differentiated those involved in both cyberbullying and traditional bullying from those involved only in traditional bullying. Similarly, digital self-confidence was not important as a differentiating factor, nor was using computers for homework and learning or for personal entertainment. There was convincing evidence that children who are involved in bullying in both traditional domains and cyberspace are significantly more likely to engage in social activities in cyberspace.

This set of findings suggests that frequent engagement in computer activities does not automatically put the child at risk of being involved in cyberbullying in this particular age range. Rather, the findings suggest that the types of activities or content to which children were exposed might be more reliable information for assessing risk. While educating children to engage in social networking in a respectful way is part of the way forward for staying outside cyberbullying activities, it also is important to encourage children to engage with healthy electronic content while using the internet.

The main predictors of children being part of both traditional bullying and cyberbullying are social and psychological. Children who have delinquent peers and feel that they are without peer support and are unable to trust their peers are more likely to be involved in both online and offline bullying as victim or perpetrator. These findings provide support for Hypothesis 3, that children who felt socially unsupported and marginalised might be more at risk of carrying bullying beyond the traditional domain, off-loading their grievances, frustration and stress through involvement in cyberbullying, and seeking support. This hypothesis was related to the confirmed expectation that traditional bully-victims would dominate the group of children involved in cyberbullying.

Young people who are involved in cyberbullying, especially cyberbullies, have been described in the literature as loners (Hoff and Mitchell, 2009). Yet their friendship and identification with their peer groups have rarely been studied. In the present study, the OTB group and the BTCB group were not predominantly anti-social individuals. In a supplementary analysis (see Footnote 6), there was no difference in empathy between the OTB and BTCB groups for instance; that is to say, children, regardless of the group they belonged to, were capable of recognising the emotions that others experience. But there were differences reflecting deviation from social norms and laws. Compared with the OTB group, children in the BTCB group engaged more with peers who broke school rules and were involved in illegal behaviours while being less engaged with 'good school citizen' peers. Furthermore, there was evidence among the BTCB group of greater disengagement from intimate social relationships. These findings suggest the need for an intervention that provides children with a pathway for better behaviour at school and on the internet, along with skills to elicit and build trusting and supportive relationships with peers within a whole of school anti-bullying program (Morrison, 2007).

Implications

From the perspective of policy intervention, the most important observation is that the vast majority of children aged 12-13 years are not involved in cyberbullying as victims or perpetrators, but the majority (60%) have experiences as victims or perpetrators in traditional bullying. Programs designed to teach children to manage traditional bullying should remain a priority in our schools and are suitable places to address emerging problems of cyberbullying.

The Social-Emotional Learning program (SEL program) is one example. Durlak and colleagues (Durlak, Weissberg, Dymnicki, Talyor, and Schellinger, 2011) have drawn on a meta-analysis to conclude that SEL has positive effects on children engaged in bullying behaviours. Learning relationship skills and understanding relational emotions seems to empower children to take more responsibility for their actions.

The regulation of traditional bullying through programs that teach children greater awareness of how they may be hurting others and offer improved social skills for dealing with situations that frustrate, anger or disappoint them receive a boost from the findings of this paper. Such programs can be extended to include cyberbullying and might be expected to yield positive outcomes.

In conjunction with this positive message, it should be acknowledged that some question whether school prevention programs and safety measures to counter bullying in schools go far enough (Merrell *et al.*, 2008). Jeong and Lee (2013) suggest a bigger shift of focus is required from whole of school to culture change. Building a culture, which strengthens and emphasises the importance of adopting norms of respect and good communication when relating with others, will help children develop safe and productive social relationships with their peers and people in and outside the school community (Ahmed and Braithwaite, 2006; Ahmed and Braithwaite, 2012).

The call for culture change is a reminder that school programs that advocate surveillance, while not without their merits, do not meet the needs envisaged by Jeong and Lee (2013) nor those suggested by the findings of this paper. This is not to suggest there are not significant benefits in encouraging parents, teachers and older siblings to talk to 12 to 13 year old children and steer them in the direction of internet use that is more productive and poses less risk of harm than social networking online. Offline safe spaces where children are supported will reduce prospects of children being harmed and/or harming others (Cook *et al.*, 2010; Hong and Espelage, 2012). But technological devices to restrict access and capacity in relation to computer usage are unlikely to keep children safe. The findings for this cohort of 12-13 year olds do not support the assertion that the internet is to blame for cyberbullying. The social relational circumstances of children's lives were the main determinant of their engagement with cyberbullying.

Limitations

Methodologically, future research should aim to examine cyberbullying longitudinally within a life course development perspective. This will be possible with future LSAC data collections. With increasing age the 12-13 year old children in this study may experience the expansion of bullying to cyberspace. As these children get older their opportunity for internet use unsupervised is likely to increase along with their knowledge and confidence in using the internet and their rebellion against conventional standards of behaviour. Examining the trajectories of children from age 12-13 years through their adolescence, tracking their engagement in traditional and cyberbullying, will provide invaluable data on the causal sequencing of events that lead children into unsafe and harmful internet practices.

The low prevalence of cyberbullying in the Wave 5 LSAC data set was disappointing for the purposes of this study. The numbers were too small to make any meaningful comparisons between bullying status groups (bully, victim, bully-victim and non-bully/non-victim) in cyberspace. Yet the data clearly identify the presence of children who may consistently be terrorising others online and offline. Because they do not exist in large numbers is not to deny the harm they cause nor its seriousness. The moral panic ignited by media reports of such incidents is a signal that parents and teachers feel ill-prepared for identifying these problems and intervening successfully. It remains important to collect data that can guide successful interventions for the very small minority of children who are locked into bullying online and offline.

A further methodological point is that the main analysis of the present study depended on a single item measure of cyberbullying. While there are other studies using single cyberbullying items (e.g., Devine and Lloyd, 2012; Williams and Guerra, 2007), a set of questions considering the various aspects of cyberbullying will increase the validity and reliability of the findings further.⁷

Finally, the present study revealed the potential significance of a socially non-supportive “culture” in which children engage in bullying and victimization both online and offline. This culture seems to engulf the child at school and at home. A better understanding of how this

⁷ Wave 6 LSAC included various online bullying activities; it will increase the robustness of models.

culture develops with elements of hostility, aggression, defiance and alienation would be valuable. Of particular note in this regard is the significance of gender in the logistic regression analysis. Boys were more likely than girls to extend their bullying into cyberspace. Gender had a substantial effect over and above variables measuring delinquency, delinquent peers and relationship problems at school and at home. Male culture and its tolerance of domination is an important future agenda for cyberspace bullying research.

Conclusion

Based on their longitudinal work, Pepler *et al.* (2008) argue that bullying is, after all, a relationship problem. Routine activities theory (Smith *et al.*, 2008) applied in the cyberbullying context challenges this conclusion. This paper contributes to the bullying literature through examining explanations of cyberbullying that focus on use of digital technology as well as the quality of social relationships and wellbeing. The present research investigated 12 and 13 year olds who had crossed over into cyberbullying spaces and those whose experiences were restricted to traditional bullying domains. We conclude that the quality of children's social relationships with peers and the culture in which those relationships develop are a key determinant for understanding who crosses over. Interventions that target social relationships, networking through social media and teach children skills for managing difficult social situations are likely to be most beneficial for reducing the risk to children of cyberbullying as well as traditional bullying as they enter adolescence.

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