Reference: Rivers, I. & Noret, N. (2010). 'I h 8 u': Findings from a five-year study of text and email bullying. *British Educational Research Journal* , *36*(4), 643-671

"I h 8 u":

Findings from a Five-Year Study of Text and E-mail Bullying

Ian Rivers
Professor of Human Development
School of Sport and Education
Brunel University
UXBRIDGE UB8 3PH, UK

Telephone: +44 (0)1895 267636
E-mail: ian.rivers@brunel.ac.uk

Nathalie Noret
Lecturer in Psychology
Faculty of Health and Life Sciences
York St John University
Lord Mayor's Walk
YORK YO31 7EX, UK

Telephone: +44 (0)1904 876311
E-mail: n.noret@yorksj.ac.uk

Key words: Bullying, text, e-mail, cyberbullying, girls, boys.

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Abstract

This study charts reports of nasty or threatening text and e-mail messages received by students in academic years 7 and 8 (11-13 years of age) attending 13 secondary schools in the North of England between 2002-2006. Annual surveys were undertaken on behalf of the local education authority (LEA) to monitor bullying. Results indicated that, over five years, the number of pupils receiving one or more nasty or threatening text messages or e-mails increased significantly, particularly among girls. However, receipt of frequent nasty or threatening text and e-mail messages remained relatively stable. For boys, being a victim of direct-physical bullying was associated with receiving nasty or threatening text and e-mail messages; for girls it was being unpopular among peers. Boys received more hate-related messages and girls were primarily the victims of name-calling, Findings are discussed with respect to theoretical and policy developments, and recommendations for future research are offered.

Introduction

Technology has transformed the lives of many children and young people and has become integral to their everyday existence. In the United Kingdom (UK), the charity now called *Action for Children* (see NCH, 2005) reported that, at the time, over 97% of the young people in their study aged between 12 and 16 years owned mobile/cellular telephones. Furthermore, the Office for National Statistics (ONS) reported that 98% of children and young people aged between 5 and 18 years had regular access to a computer (National Grid for Learning, 2002). Methods of communication such as text messaging (SMS messaging) via mobile/cellular phones and online instant messaging have redefined our understanding of the nature of young people's social networks and social interactions, and this has come about primarily as result of their increasing popularity and relative inexpense (Bryant, Sanders-Jackson, & Smallwood, 2006). Additionally, according to Campbell (2005), mobile/cellular phone handsets have been transformed into fashion accessories becoming essential to the establishment of social status within peer hierarchies.

Research into the positive benefits of providing young people with mobile/cellular phones, particularly with respect to personal safety (Ling, 2004) have been over-shadowed by those studies concerned primarily with the negative aspects of mobile/cellular phone ownership and unrestricted access to the World-Wide-Web (WWW). For example, Parry (2005) noted that, with the advent of 'camera phones', has come the ability of one person to take compromising or inappropriate photographs or make videos of an unwitting individual and distribute those images and videos among peers with the intention of shaming or otherwise embarrassing the target. Further technological advances allowing mobile/cellular phones to interface with the WWW has meant that those images and videos which once could only be viewed by a

limited audience can now be uploaded immediately onto social networking or unrestricted viewing sites (e.g. YouTube) and accessed globally.

Bullying and 'cyberbullying': An overview of research

Bullying, whether physical, verbal, indirect or relational, represents a systematic abuse of power that is both persistent and intentional (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001).Various studies of bullying perpetration and victimization have found an age difference in boys' and girls' exposure to bullying with younger boys opting for direct-physical forms of aggression (e.g. hitting, kicking, and punching) more readily than girls who use direct-verbal (e.g. name-calling and labelling), and indirect or relational aggression (the spreading of malicious gossip, rumour mongering, and social isolation) (Besag, 2006; Bowie, 2007; Murray-Close, Ostrov, & Crick, 2007; Nansel et al., 2001; Rivers, Duncan, & Besag, 2007; Williams & Guerra, 2007). However, more recent longitudinal data gathered by Pepler, Jiang, Craig, and Connolly (2008) has shown that differences between the sexes in terms of exposure to different types of bullying reduces with age.

'Cyberbullying' is a relatively new phenomenon and, as such, research into it is only now gaining momentum. Principally, 'cyberbullying' can be described as bullying that occurs through media and communication devices such as mobile/cellular phones, e-mail, and the internet (e.g. social networking sites, web-pages, and blogs). Unlike other forms of bullying where there has been a long-standing general agreement among researchers about the repeated nature of the behaviour, studies of 'cyberbullying' have been less restrictive in applying a definition that requires a persistent and meaningful interaction between the perpetrator and the victim, primarily as a result of the anonymity 'cyberbullying' affords the perpetrator (Wolak, Mitchell, & Finkelhor, 2007).

Prevalence rates of 'cyberbullying'. Using data collected from the Youth Internet Safety Survey in the United States (US), Ybarra and Mitchell (2004) found that 19% of their 1,501 participants had been involved in some form of online harassment in the previous year as either perpetrators or victims. Kowalski, Limber, and Agatston (2008) in their survey of 3,767 students found that 25% of girls and 11% of boys had been electronically bullied *at least once* in the previous two months. Ybarra and Martin (2008, personal communication) found that 28% of their samples (aged 8 to 18 years) who used text messages (30% of the total sample of 1,306), received harassing messages on more than one occasion. In Canada, Li (2005) found that 24.9% of her sample of 177 grade 7 students had been a victim of 'cyberbullying'; 38.6% of the victims were male and 59.1% were female. Subsequently, in her study of 264 7th to 9th grade students, Li (2006) found that that whilst reports of being a victim of cyber-bullying had not only reduced but levelled out between the sexes (25% for boys and 25.6% for girls), reports of perpetration were substantially different (22.3% for boys and 11.6% for girls).

In their online survey of 384 American youth, Patchin and Hinduja (2006) examined the prevalence of different types of 'cyberbullying'. They found that 29.4% of the sample had been victims of 'cyberbullying'. Specifically, 21.9% had been bullied in a chat room, 13.5% had been bullied via computer text message, 12.8% via e-mail, 2.9% via bulletin board, 2.1% via mobile/cellular phone text messaging, and 1.6% through a newsgroup. In a follow-up study of 1,378 internet users under the age of 18 years, Hinduja and Patchin (2008) found that 32% of boys and 36% of girls reported that they had been victims of 'cyberbullying'. In particular, girls were more likely than boys to be bullied by computer text-message (19.8% versus 17%), email (13.0% versus 9.7%), and mobile/cellular phone text message (4.7% versus 4.0%). In

terms of perpetration, boys were more likely than girls to bully in chat rooms (9.6% versus 7.3%) and on bulletin boards (3.4% versus 2.4%). Hinduja and Patchin also explored the offline correlates of 'cyberbullying'. Their data suggested that cyberbullying is predicted by offline problems at school including truancy, cheating in examinations, other forms of victimisation, fighting, and substance abuse (the consumption of alcohol or the smoking of marijuana).

In terms of differences according to age, Williams and Guerra (2007) in their study 3,339 American youth in grades 5, 8, and 11 (2,293 of whom were followed up within 12 months), found that 'internet bullying' is rare in 5th grade (4.5%; 10-11 years of age) peaks in 8th grade (12.9%; 13-14 years of age) and declines marginally by 11th grade (9.9%; 16-17 years of age). While Williams and Guerra could not find any one predictor of 'internet bullying', they did find that all three of the types of bullying they surveyed (physical, verbal, and internet) were related to students' normative beliefs about bullying (i.e. their approval of it), negative school climate, and negative peer support.

In the United Kingdom (UK), while there have been various cross-sectional studies of 'cyberbullying', there is yet to be any systematic investigation of this phenomenon. In 2005, the children's charity now known as *Action for Children* (formally the National Children's Home or NCH) surveyed 770 young people about their experiences of 'cyberbullying'. They found that 20% had experienced some form of bullying through technology: 14% through text messaging, 5% in internet chat rooms, and 4% by e-mail (NCH, 2005). Research conducted with 518 youth by MSN found that 11% reported being a victim of 'cyberbullying', and that girls (14%) thought 'cyberbullying' was worse than other types of bullying. Overall, 22% of those

youth surveyed thought the worst thing about 'cyberbullying' was the fact that more people would know about the bullying they had experienced (MSN, 2006).

Smith, Mahdavi, Carvalho, Fisher, Russell, and Tippett (2008) reported on two studies conducted in the UK focusing on the nature of 'cyberbullying' among secondary school students (aged 11-16 years). In their first study of 92 students, they found that 6.6% were regularly victims of 'cyberbullying', with no significant gender differences. In their second study of 533 students, they found that rates of 'cyberbullying' increased with age (from 14% in Year 7 to 23% in Year 11) with the most frequently reported types of 'cyberbullying' being instant messaging (9.9%), telephone calls (9.5%), and text messages (6.6.%). From students' self-reports, they were also able to determine that victims of 'cyberbullying' were also likely to be victims of offline bullying, and that perpetrators of 'cyberbullying' were also perpetrators of offline bullying.

Methodological issues in the study of 'cyberbullying'.

Although the above review illustrates that there have been numerous studies of what has been described as 'cyberbullying', researchers have been less than consistent determining what constitutes 'cyberbullying'. For example, in the US Patchin and Hinduja (2006) defined it as, 'willful *[sic]* and repeated harm inflicted through the medium of electronic text' (p. 152). By way of contrast in Canada Li (2007) reported that *www.cyberbullying.ca* described 'cyberbullying' as:

> The use of information and communication technologies such as email, cell phone and pager text messages, instant messaging, defamatory personal Web sites, and defamatory online personal polling Web sites, to support deliberate, repeated, and hostile behavior *[sic]* by an individual or group, that is intended to harm others (p. 1779).

In the UK, Smith et al. (2008) defined cyberbullying as, 'an aggressive, intentional act carried out by a group or individual, using *electronic forms of contact,* repeatedly and over time against a victim who cannot easily defend him or herself' (p, 376). While all three definitions stress the repeated nature of the behaviour, the types of electronic devices/media that have been investigated has varied considerably over the years, often as a result of advances in technology (see Table 1). For example while the majority have reported incidents of bullying perpetrated via e-mail, SMS/text messages, and instant messages, more recently, others have included verbal abuse conducted via mobile/cellular phone (see Smith et al., 2008). While most, but not all, have reported bullying that occurred in internet chat rooms (see Finkelhor, Mitchell, & Wolak, 2000; NCH, 2002; 'Putting U in the Picture' – Mobile Bullying Survey, 2005; Li 205, 2006; Fight Preteen Crime, 2006; Fight Teen Crime, 2006; Hinduja & Patchin, 2008; Kowalski & Limber, 2006; Kowalski & Witte, 2006; Patchin & Hinduja, 2006; Smith, Mahdavi, Carvalho, & Tippett, 2006; Smith et al., 2008), some have included the uploading of images onto web sites, the distribution of images via mobile/cellular phones (Fight Preteen Crime, 2006; Fight Teen Crime, 2006; Smith et al., 2006, 2008), or the posting of messages of bulletin boards, and newsgroups (Hinduja & Patchin, 2008; Patchin & Hinduja, 2006). Some researchers have not specified the behaviours that constituted 'cyberbullying' in their studies, or the media they included (see Ybarra & Mitchell, 2004; Ybarra, Mitchell, Wolak, & Finkelhor, 2006), and some opted only to provide examples to assist those completing the various survey instruments rather than definitive statements about what 'cyberbullying' is and is not (see Kowalksi & Limber, 2006; Li 2005, 2007). Finally, some researchers have opted to describe the behaviour they measured in terms of

'internet bullying', ignoring the role of the mobile/cellular phone (Williams & Guerra, 2007).

INSERT TABLE 1 ABOUT HERE

Concomitant with issues surrounding the definition of 'cyberbullying' and the inclusion criteria used in various studies, prevalence rates have also been calculated differently. Indeed, while the majority of researchers have agreed upon definitions that include the *repeated* nature of the behaviour (see above), in reporting their findings they have often opted to include single as well as multiple incidents. For example, in the US Kowalksi and Witte (2006) set the benchmark as *ever* having been cyberbullied, while in the UK Smith et al. (2006; 2008) set it at *two or three times* in the past *couple of months*. As previously discussed, Hinduja & Patchin (2008) framed their study of 'cyberbullying' in terms of *repeated* experiences in the last year (see also Patchin & Hindjua, 2006). Finally, in Canada, Li (2005; 2006) asked students about their experiences of 'cyberbullying' *during school* (Li, 2005; 2006). Thus, rates of 'cyberbullying' have been reported as ranging anywhere from 4% (Ybarra & Mitchell, 2004) to 36% (in this case for girls, see Hinduja & Patchin, 2008).

It has also been difficult to understand the gendered nature of 'cyberbullying', as so many victims report that they do not know the identity of their aggressor. For example, Wolak, Mitchell, and Finkelor (2007) reported that among those youth who reported being harassed online in the Youth Internet Safety Survey, only 43% knew their perpetrator offline. Furthermore, of those who did know the perpetrator, nearly half were female – a finding mirrored by Hinduja and Patchin (2008). Currently, simply knowing who the perpetrator is or was adds little to our understanding of 'cyberbullying' without knowing the

content of messages received by victims. As yet few studies have provided enough qualitative examples of 'cyberbullying' to conduct any form of analysis

Finally, one of the inherent methodological weaknesses in many of the studies cited above has been the failure to take into account advances in technology and the impact market increases in mobile/cellular phone purchases and internet connectivity have had upon reports of 'cyberbullying'. The development of new technologies and new methods of communication including 3-G phones and social networking sites has undoubtedly had an impact upon 'cyberbullying'. However, to date, researchers have not considered whether changes in the nature of 'cyberbullying', or rises in prevalence rates can be accounted for by the availability and affordability of new technologies, nor have they been able to chart this over time.

Rationale and aims of the present study

While there have been a number of large-scale cross-sectional studies conducted in the US and UK, as noted above it is unclear whether or not rates of 'cyberbullying' have increased as a function of greater access to mobile and computer technology by young people. In addition, while age-related differences in being a victim of 'cyberbullying' have been found between groups, there is little evidence of increases within groups. This study plots the emergence of reports of the receipt of nasty or threatening text and e-mail messages among groups of students (11-14 years of age) attending secondary schools in the North of England between 2002 and 2006. From its inception, our over-arching aim was to provide researchers, policy makers, educators, and, we hope, parents with an appreciation of text and e-mail aggression as it emerged and became a national policy issue for school education in the UK

In 2002, at the commencement of the study, the focus of our attention was solely on the receipt of nasty or threatening text and e-mail messages, and we opted to

retain this focus throughout. Our decision not to report on other communication devices has been informed by three factors. Firstly, data from the Office of National Statistics (ONS) has shown that, in the UK, growth in mobile/cellular phone ownership has been moderate since 2003-2004, with 80% of households reporting at least one mobile/cellular phone (92% in the highest income bracket and 56% in the lowest; ONS, 2008). In terms of access to a computer, while the ONS (see National Grid for Learning, 2002) found that 98% of young people had access to a computer, either at home or at school, rates of household ownership have also levelled off with latest figures suggesting only a 2% growth rate from 2005 to 2006 (65-67%), and only a 10% rise in those homes with an internet connection between 1998 and 2006 (49% to 59%; ONS, 2008). Secondly, data collected on behalf of the Department for Education and Skills (Hayward, Alty, Pearson, & Martin, 2003) indicated that, by the Autumn of 2002, 84% of children and young people had access to the internet (at school or at home, or in another place), and that the greatest increase in access to mobile/cellular phones occurred between Key Stage (KS) 2 (7-11 years of age) and KS 3 (11-14 years of age) with a moderate increase from KS 3 to KS 4. Thus, we determined that our target sample should be students in KS 3 where the most significant rise in mobile/cellular phone purchases by parents was reported. Thirdly, according to Hayward et al. (2003), the number of pupils with access to a WAP/3G phone was very small in 2001 and 2002 (2% and 5% respectively). Similarly access to Palmtop computers was also very low (1%) across both years.

In retrospect we should also acknowledge that during this study there was a rapid series of developments in online gaming, instant messaging (IM), short-rage wireless connectivity, and social networking sites that changed, in a very short time, the way in which young people interacted with one-another. It seemed likely our data

would be confounded by the rise in popularity and increasing availability of these new ways of communicating. Consequently, the decision to report only those data relating to bullying perpetrated through media that have been available to the majority of young people in the UK since 2002 was seen as a means of reducing the likelihood of making Type 1 errors. Thus, our specific aims in analysing the data from this study were as follows:

1) To chart the development of reports of receiving nasty or threatening text and e-mail messages across five years for victims;
2) To determine whether there are any consistent sex or age differences in receiving nasty or threatening text and e-mail messages;
3) To consider whether the incidence of receiving nasty or threatening text and e-mail messages across the five years was related to market uptake in mobile/cellular phones and internet connectivity;
4) Building upon previous studies, to consider whether factors such as age, being a victim of other forms of bullying behaviour, popularity at school, good or poor behaviour at school, enjoyment of school, and being good at school work, were likely to be associated with the likelihood receiving nasty or threatening text and e-mail messages for boys and for girls separately; and,
5) To undertake an initial analysis of the content of text and e-mail messages received by the students in our study, and the potential reasons why they were being bullied.

Method

Participants

From 2002 until 2006 we surveyed 13 schools in a small city in the North of England (approximately 2,500 students per calendar year). In years 2002, 2003, and 2006, data were collected from students in KS 3 (aged between 11 and 14 years;

academic years 7, 8, and 9). In years 2004 and 2005, data were collected from students aged between 11 and 13 years only (academic years 7 and 8). A small number of students from academic year/grade 10 (KS 4; 14-15 years of age) also participated in 2002 (see Table 2). As noted previously, for the purposes of this study data are drawn from students in Years 7 and 8 only (11-13 years of age).

As our data contained a degree of interdependence with pupils appearing more than once across the five years, our data were also recoded to allow for comparison of reports of receiving nasty or threatening text and e-mail messages from one year to the next. Firstly data gathered from pupils across the five years were recoded into cohorts representing when they first entered the dataset (i.e. Cohort 1 = 2002-2003; Cohort 2 = 2003-2004, Cohort 3 = 2004-2005, and Cohort 4 = 2005-2006; see Table 2). Secondary coding by age was then undertaken so that data gathered from pupils' in Year 7 could be compared to data submitted by members of the same cohort 12 months later in Year 8.

INSERT TABLE 2 ABOUT HERE

Comparable with the local population, students were primarily White British (98%). Catchment areas for each of the participating schools, and entrance requirements did not vary across the five years, and included Faith schools as well as community colleges and high schools. Thus the sample represented a diverse range of pupils with varying socio-economic status and records of academic achievement. Each of the schools participated in an ongoing series of anti-bullying initiatives funded by the local education authority which included city-wide advertisement campaigns on buses, the distribution of *"Are you Being Bullied?"* leaflets to all pupils, workshops and theatre productions (in 2002 only to launch the initiatives), and a series of annual surveys.

Measures

Anti-bullying questionnaire. For this study we used a short version of the Olweus' Bully/Victim Questionnaire which as been shown to have both construct and discriminant validity in terms of prevalence estimation (see Solberg & Olweus, 2003). In addition to basic demographic data, we provided students with a definition of bullying comparable to that used by Olweus (1993) and Smith et al. (2008):

> We say a pupil is <u>being bullied</u> when another pupil, or a group of pupils, say nasty and unpleasant things to him or her. It is also bullying when a pupil is hit, kicked, threatened, locked inside a room, and things like that. These things may take place frequently and it is difficult for the pupil being bullied to defend himself or herself. It is also bullying when a pupil is teased repeatedly in a negative way. But it is <u>not bullying</u> when two pupils of about the same strength quarrel or fight.

Students were given twelve questions about being bullied at school which included questions about its frequency (*0 = I haven't been bullied in school this term, 5 = Several times a week*), the types of bullying they had experienced with each type scores 0 = No and 1 = Yes (*I haven't been bullied this term, I've been called names about my race or colour, I've been called names in other ways, I've been hit/kicked, rumours have been spread about me, no one will speak to me, I have been frightened when a particular person looked in my direction, I have had my belongings taken, my homework has been destroyed, I have been bullied in other ways*), location (*classrooms, corridors, school yard, playing field, changing rooms, on the way home, toilets [added in 2004], other*), and in 2006 we added a question which asked students to tell us why they were being bullied at school (*I haven't been bullied,*

Because of my weight size or body shape, Because of my appearance, Because of my ethnicity/ colour, Because I am a Traveller, Because I am called 'gay' or 'lesbian', Because my school work is good, Because my school work is not so good, Because I have Special Needs, Because I have a disability, Because of who I'm friends with, Because I am good at sport, Because I am no good at sport, Because of my possessions, Because of the Brand of clothes I wear, and *Other*). Additional questions addressed issues of age, sex, and number of perpetrators, and whether or not a teacher or parent/guardian had been told about the bullying. Ten questions relating to the perpetration of bullying followed which were similar in terms of content and structure to those described above. Students were then asked two questions about witnessing bullying. The first question addressed whether they had witnessed an incident of bullying that had upset them (*1 = No, 2 = Yes*) which they were then asked to describe qualitatively. The second question addressed whether or not the incident had been resolved (*1 = No, 2 = Yes*) which they were also asked to describe qualitatively.

Text and e-mail bullying. From 2002-2005, students were asked the question: *Have you ever received any nasty or threatening text messages or emails?* They were coded and labelled as a six-point scale in keeping with other studies of bullying (*0 = Not bullied, 1 = Once only, 2 = Occasionally this term, 3 = Sometimes, 4 = Regularly, once a week, 5 = Frequently, several times as week*). In 2006, the question was split into two with pupils being asked to report incidents of text and email harassment/bullying separately (using the above scale), and to provide qualitative examples of the e-mail and text messages they had received.

Enjoyment of school. In addition to questions concerning bullying, two questions were included that asked student to rate their behaviour at school (*I am well behaved at school*), and liking school (*I like going to school*) using a 1-5 scale (*1 =*

Always, *2 = Usually*, *3 = Sometimes*, *4 = Not usually*, and *5 = Never*). One question asked them to rate their level of achievement in terms of schoolwork (*How is your school work?*) which was scored on a 1-5 scale (*1 = Always good*, *5 = Always poor*), and another question addressed their enjoyment of break times/recess (*1 = Like very much*, *7 = Dislike very much*).

Being unpopular/popular at school. Four items were combined to provide a measure of unpopularity/popularity at school. The items included in this scale included the questions: *Do you feel lonely at school?* scored on a 1-6 scale (*1 = Never, 6 = Always*); *Do you feel that you are less well liked than other pupils in your class?* (*1 = Never, 6 = Always*); *How many good friends do you have in your class?* (*1 = Many, 5 = None*); and *How often does it happen that other pupils don't want to spend break times alone with you?* (*1 = It hasn't happened, 5 = Several times a week*). The alpha coefficient for this measure ranged from .73 - .80 across the five years.

Procedure

Each calendar year from 2002-2006 questionnaires were distributed to schools by members of the local education authority's (LEA) administrative staff during the summer term (June/July). Pupils completed the questionnaires in class supervised by a teacher. They were asked not to identify themselves by name, but simply to circle the response corresponding to their year group and sex on the questionnaires. They were then reminded of the definition of bullying used in the study, and also to whom at school they could refer questions or concerns about bullying. On completion, the questionnaires were then collected and collated by year group, and returned to the LEA where they were inputted into electronic spreadsheets which were then analysed by the researchers.

Following analysis of the data, the headteachers of participating schools received customised summary reports providing them each with a breakdown of the findings for their own school comparing rates of bullying to the aggregated data from the other 12 schools, and those data collected from previous years. The reports assisted teaching staff in monitoring the effectiveness of the anti-bullying measures in their schools. The LEA received a summary report, which included a breakdown of the findings by school, by year group, and by year of participation which could then be used to monitor the effectiveness of the anti-bullying measures on a city-wide basis.

Ethical considerations

Approval for this study was granted by the appropriate institutional ethics committee, and an assistant director within the LEA. The headteachers of participating schools sent letters to parents and/or guardians of students informing them of the anti-bullying initiatives taking place, and the monitoring being undertaken by the researchers. During data collection, students were informed that their participation was voluntary and they could choose not to answer any or all of the questions in the survey. They were also informed of the appropriate member of staff in each school from whom they could seek advice or guidance on issues raised by the survey.

Results

Reports of text and e-mail bullying across five years for victims

Figure 1 illustrates the rise in reports of text and e-mail bullying across 5 years for pupils in Years 7 and 8 with an average of 13.0% of pupils receiving one or more nasty or threatening text or e-mail messages a term in 2002 rising to 16.4% in 2004 before gradually beginning to decline in 2005-2006.

INSERT FIGURE 1 ABOUT HERE

Sex differences in reports of being bullied at lease once this term

Contingency table analyses indicated that across all years girls were significantly more likely to receive nasty or threatening text and e-mail messages at least once a term than boys (p = .05) and that the differences in sexes continued to grow with reports of text and e-mail bullying rising from 18.8% to 20.8% for girls, whilst they dropped from 13.8% to 10.3% for boys (see Figure 2). However, reports of frequent receipt of nasty of threatening text and e-mail messages (once a week or more) remained stable across the five years ranging from 1.0-1.8% (0.8%-1.8% for boys, 0.7%-1.7% for girls) with no significant associations being found between boys and girls.

INSERT FIGURE 2 ABOUT HERE

Sex and age differences by cohort. As students appeared in our data twice across the five years (firstly in Year 7 and then again in Year 8), the data were recoded to allow for comparison of reports of nasty or threatening text messages and e-mail a year apart (i.e. Year 7 *versus* Year 8), and also by cohort (i.e. 2002-2003, 2003-2004, 2004-2005, and 2005-2006)

A series of 2 x 4 analyses of variance (ANOVAs) were then conducted to determine the impact of age (Year 7 *versus* Year 8), and cohort on the reports of receiving nasty or threatening text messages and e-mail (scored using the 0-5 scale) for the whole sample, and then split by sex. Given the size of the data set and the number of observations we opted to reduce Type 1 errors by using a Bonferroni adjusted alpha level of .006 (8/.05).

Overall, we found a statistically significant main effect for cohort, F (3, 11127) =1.04, p = .004, η^2 = .001 suggesting that significant changes in the pattern of

receiving nasty or threatening text and e-mail messages across time occurred. Post hoc comparisons using Tukey HSD indicated that the mean frequency for receiving nasty or threatening text messages and e-mail that term for the 2002-2003 cohort (M = 0.08 SD = 0.41) was significantly lower than that reported by the 2003-2004 cohort (M = 0.13, SD = 0.54). All other post hoc comparisons were not found to be significant. The main effect for age was not significant indicating students' reports of receiving nasty or threatening text and e-mail messages between Year 7 and Year 8 for each cohort did not differ substantively. The interaction effect was also not significant.

When the data were split by sex, among girls we did not find statistically significant main effects for cohort, F (3, 5632) = 2.77, *ns*, or age, F (1, 5632) = 1.49, *ns*. The interaction effect was also not significant, F (3, 5632) = 2.38, *ns*. Among boys however we found a statistically significant main effect for cohort, F (3, 5487) = 5.51, p = .001, η^2 = .003, again suggesting that significant changes in the pattern of receiving nasty or threatening text and e-mail messages across time occurred. Post hoc comparisons using Tukey HSD indicated that the mean frequency for receiving nasty or threatening text messages and e-mail that term for the 2002-2003 cohort (M = 0.07, SD = 0.41) was significantly lower than that reported by the 2003-2004 cohort (M = 0.13, SD = 0.58). Also that the mean score for the 2003-2004 cohort (M = 0.13, SD = 0.58) was significantly higher than that reported by the 2005-2006 cohort (M = 0.07, SD = 0.40). All other post hoc comparisons were not found to be significant. The main effect for age among boys and the interaction effect were not significant at p = .006.

Receipt of nasty or threatening text and e-mail messages, mobile/cellular phone purchases, and uptake in internet connectivity.

The data in Figure 1 indicated that there was a slight drop in the number of reports of receiving nasty or threatening text messages and e-mails in 2003 which could not, at the time, be explained. In addition, our analysis indicated that mean frequencies for receiving nasty or threatening text and e-mail messages declined between 2002 and 2003, and then subsequently rose. Again, we had no explanation of this finding. Therefore we opted to incorporate into our analyses, data drawn from Communications Market report (Section 3: Telecommunications) produced by the Office of Communications (Ofcom) in 2006 (see Figure 3 & Table 3). Ofcom's report provided details of the household uptake of mobile/cellular phone ownership and internet connectivity from 2002 until 2006. Figure 3 and Table 3 show that in 2003 there was a 3% market downturn in mobile/cellular phone purchases and a 2% downturn in household internet connectivity. This was mirrored in our study by a downturn in reports of receiving nasty or threatening text messages and e-mail by 1.4% among boys, but interestingly not among girls (there was in fact a 0.2% increase). However, other than 2003, girls' reports of receiving nasty or threatening text messages and e-mail did reflect the rise in mobile/cellular phone and internet uptake reported by Ofcom. Consequently, we conducted a series of Pearson Product-Moment Correlations to determine the degree of relationship between our data and that provided by Ofcom. The results indicated that among girls only, across the five years of this study, receipt of nasty or threatening text and e-mail messages was significantly and *positively* related to the pattern of household internet connectivity, $r = .88$, $N = 5$, $p = .04$, and household mobile/cellular phone ownership, $r = .96$, $N = 5$, $p = .01$.

INSERT FIGURE 3 & TABLE 3 ABOUT HERE

Factors associated with the receipt of nasty of threatening text messages and e-mail

To date, only two of the studies we have reviewed have explored the predictors of 'cyberbullying' (Hinduja & Patchin, 2008), and 'internet bullying' (Williams & Guerra, 2007). According to Hinduja and Patchin (2008), in their study of 'cyberbullying' they found that age, truancy, problems with school work (poorer grades), offline bullying (victimisation and perpetration), and fighting were associated victimisation. By way of contrast, while Williams and Guerra (2007) could not find any one single predictor of 'internet bullying', they did find that all three types of bullying they surveyed (physical, verbal, and internet) were associated with students' normative beliefs about the acceptability of bullying, negative school climate, and a lack of peer support.

Building upon these studies, we wished to explore whether the factors identified above (i.e. age, being a victim of other forms of bullying behaviour, being a perpetrator, popularity at school, good or poor behaviour at school, enjoyment of school, and being good or not so good at school work) were associated with the likelihood of receiving nasty or threatening text and e-mail messages *more than once*. Furthermore as neither of the previous studies had looked in detail at sex differences in 'cyberbullying' or 'internet bullying', we wished to determine whether or not variables differed for boys and for girls.

For the purposes of analysis we chose to use the most recent survey data collected in 2006, with responses collected from those pupils in Year 9 removed (102 boys, 122 girls) as well as those containing missing/confounding data (84 boys, 56 girls). Our final data set contained 1,323 boys and 1,334 girls. There was no interdependence in this data.

To determine whether the findings from previous studies were applicable to this study, we opted to perform logistic regression analyses upon our data, using

reports of receiving nasty or threatening text and e-mail messages *more than once* as a binary dependent variable (recoded as *0 = No, 1 = Yes*), with the independent variables including exposure to (i.e. most frequently reported) other forms of bullying – physical, verbal, or indirect/relational - which were coded (*0 = I haven't been bullied in school this term, 5 = Several times a week*), bullying perpetration (*0 = I haven't bullied someone else in school this term, 5 = Several times a week*) self-reports of behaviour at school (*1 = Always good, 5 = Never good*), liking school (*1 = Always like, 5 Never like*), being good or not so good at schoolwork (*1 = Always good, 5 Always poor*), being popular/unpopular at school (scored out of 22), and age (*0 = Year 7, 1 = Year 8*).

Contingency table analyses (2 x 2) were computed with the data file split by age, sex, and then age by sex, to determine whether or not they were factors that needed to be considered in conducting the regression analyses. Again, given the size of the data set and the number of observations we used a Bonferroni adjusted alpha level of .0125 (4/.05). Results indicted that there was a significant association between age and receiving nasty or threatening text messages and email *more than once* for the whole sample (p = .007) with more pupils in Year 7 reporting being victims (8.3%) than in Year 8 (5.7%). A significant association was also found for sex (p = .0001) with girls receiving nasty or threatening text messages and e-mail *more than once* much more than boys (9.6% and 4.4% respectively). However, no significant associations were found between age and receiving nasty or threatening text messages and e-mail *more than once* separately for girls or boys. Based upon these findings, we opted to remove age from our analyses.

Variables associated with the receipt of nasty and threatening text messages and e-mail: Boys.

The full model containing all the independent variables was not found to violate the assumptions of logistic regression (Goodness-of-fit χ^2 (8) = 4.99, p = .76) and was statistically significant, χ^2 (8, N = 1323) = 36.77, p = .0001, explaining between 3.0% (Cox and Snell R^2) and 32.0% (Nagelkerke R^2) of the variance in receiving nasty or threatening text and e-mail messages that term, classifying 99.3% of cases correctly. As Table 4 illustrates only one of the independent variables – *direct-physical bullying* – made a unique statistical contribution to the model ($p \leq .001$) suggesting that those boys who report being bullied physically (i.e. those who reported being hit, kicked or punched by one or more others that term) were more likely to report receiving nasty or threatening text messages and e-mail (Odds Ratio 3.69, 95% Confidence Interval [CI] 1.84, 7.42).

INSERT TABLE 4 ABOUT HERE

Variables associated with receipt of nasty and threatening text messages and e-mail: Girls.

The full model for girls containing all the independent variables was not found to violate the assumptions of logistic regression (Goodness-of-fit χ^2 (8) = 35.96, p = .06) and was statistically significant, χ^2 (8, N = 1334) = 15.84, p = .0001, explaining between 3.0% (Cox and Snell R^2) and 20.8% (Nagelkerke R^2) of the variance in receiving nasty or threatening text and e-mail messages *more than once* that term, classifying 98.7% of cases correctly. Table 5 shows that only one of the independent variables – *being unpopular/popular at school* – made a unique statistical contribution to the model ($p \leq .002$) suggesting that, among girls, the more unpopular they were, the more likely they were to have received nasty or threatening text messages and e-mail *more than once* that term (Odds Ratio 1.26, 95% Confidence Interval [CI] 1.09, 1.46).

INSERT TABLE 5 ABOUT HERE

The content of nasty and threatening text messages and e-mail

In 2006 the survey instrument was amended slightly to allow students to provide qualitative examples of the e-mail and text messages they had received. In total 239 examples of text message and e-mail content were collated. Text messages were submitted by 38 boys and 109 girls. Examples of e-mail messages were provided by 17 boys and 75 girls. The messages were coded independently by each of the authors and subsequent comparisons were made. This was an iterative process and continued until full agreement between coders was achieved. Ten categories of text message and e-mail were finally identified: *threat of physical violence, abusive or hate-related, name-calling (including homophobia), death threats, ending of platonic relationships, sexual acts, demands/instructions, threats to damage existing relationships, threats to home/family, menacing chain messages* (see Table 6). A generic category entitled *other* was retained for those text messages and e-mail that were either cryptic or contained unusual content.

INSERT TABLE 6 ABOUT HERE

Contingency table analyses (2x2) indicated that there were significant associations between sex and exposure to abusive or hate-related messages ($p = .03$) with boys receiving more hate-related messages (25%) than girls (13%). Girls were also subject to more name-calling (26%) than boys (3%; $p = .004$). All other comparisons were not significant, or could not be computed due to the size of sub-samples.

In terms of content most of the text and e-mail messages pupils reported as bullying were clearly aggressive in style and content (*'I'm going to kick you head in when you least expect it', 'I h 8 u', 'u r gay', 'die bitch by[e]', 'you will die in 2 days',*

'I'm going to tell him that you said…', 'I will get you and your family too', 'I am going to infect your computer with a virus'). There was also some evidence of a power imbalance between perpetrators and victims, particularly where the text messages and e-mail included threats of physical violence (*'you're going to be knocked out after school'*), death threats (*'I know where you live, I'm going to kill you'*), and the ability to manipulate existing relationships (*'I'm going to make your mates turn against you'*).

In terms of the potential reasons why the text and e-mail messages were sent, while contingency tables analyses (including Yates' Correction for Continuity where cells had expected frequencies of less than five) indicated that there were no significant associations between sex and the reasons for bullying taking place, we noted that boys rather than girls were more likely to receive nasty or threatening text and e-mail messages if they were being bullied because of their weight, size or body shape (16.7% *versus* 10.5%), general appearance (33.3% *versus* 26.3%), ethnicity or colour (8.3% *versus* 0%), because they were called 'gay' (25.0% *versus* 10.5%), or because of the brand of clothes they wore (16.7% *versus* 10.5%). Girls on the other hand were slightly more likely than boys to receive nasty or threatening text and e-mail messages if they were being bullied because their school work was good (5.3% *versus* 0%), or because they were good at sports (10.5% *versus* 0%), or indeed poor at sports (10.5% *versus* 0%).

Discussion

The primary aims of this study were to chart the development of reports of receiving nasty or threatening text and e-mail messages across five years for victims; to determine whether there are any consistent sex or age differences in receiving nasty or threatening text and e-mail messages; and to consider whether the incidence of

receiving nasty or threatening text and e-mail messages across the five years could be determined by factors such as market uptake in mobile/cellular phones and internet connectivity. In addition, building upon the results of those cross-sectional studies that were published prior to this study, to consider whether those offline factors associated with 'cyberbullying', were also associated with the likelihood receiving nasty or threatening text and e-mail messages for boys and for girls. Finally, in the absence of published data illustrating the nature and content of 'cyberbullying', we aimed to provide an initial statistical analysis of the content of text and e-mail messages received by the students in our study, and the potential reasons why they were being bullied.

Our findings indicate that, over the last five years, the sending of nasty or threatening text messages and e-mail has been a substantive problem in secondary schools, particularly for girls. The girls in our study received nasty or threatening text and e-mail messages much more than boys and, by 2006, twice as many girls reported receiving nasty or threatening text messages and e-mail at least once that term when compared to boys (20.8% *versus* 10.3%). Notwithstanding it is noteworthy that reports of receiving nasty or threatening text messages and e-mail *once a week or more* remained relatively stable over the five years and when aggregated across boys and girls affected between 1.0% and 1.8% of our samples across each calendar year. Our analyses also demonstrated that early in the study, in 2003, there was a marginal decline in reports of nasty or threatening text messages and e-mail which mirrored a downturn in purchases of mobile/cellular phones and internet connectivity nationally (see Ofcom, 2006). Interestingly, our data did not suggest that, within cohorts, there were any significant increases in reports of receiving nasty or threatening text messages and e-mail as students moved from Year 7 to Year 8, though various cross-

sectional studies have reported higher prevalence rates of 'cyberbullying' between groups of students of different ages or in different grades of school.

Few of the independent variables reported by Hinduja and Patchin (2008) and Williams and Guerra (2007) were found to be associated with receipt of nasty or threatening text messages and e-mail in this study. However, comparable with Hinduja and Patchin (2008), we did find that, among boys, those who were also victims of direct-physical bullying (hitting, kicking, and punching) were also more likely to report receiving nasty or threatening text messages and e-mail. It should be noted that the differences in findings between this study and that of Hinduja and Patchin (2008) may be accounted for by the different ways in which the independent variables were coded for logistic regression. In Hinduja and Patchin's study the independent variables were binary coded (0 and 1). In this study, we opted not to recode our independent variables which had the effect of providing us with more conservative estimates of the variance explained by our regression models.

Among girls, we found that unpopularity among peers was associated with receiving nasty or threatening text messages and e-mail. This finding partially supports those of Williams and Guerra (2007) in that our measure of unpopularity would seem to serve as a proxy for their measure of negative peer support. However, it should be remembered that Williams and Guerra found that negative peer support predicted all three of the types of bullying they investigated - physical, verbal and internet.

Finally, our exploratory analyses of the content of the text and e-mail messages received indicated that boys received more hate-related messages than girls, and that girls were subject to more name-calling than boys. Although we did not find any significant associations between sex and reasons for being bullied, we did find

that students who had received nasty or threatening text messages and e-mail were victims of other forms of bullying as a result of their appearance, clothing, weight, size, or body shape, or because they were called 'gay' (boys in this case).

In the context of current research on 'cyberbullying', our findings support those studies that have shown that it co-exists with other forms of bullying at school, particularly among boys. Victims may be identifiable to teachers either by their pre-existing status as a victim of other forms of bullying, or by their isolation from peers in the classroom, schoolyard, and at lunch and break/recess. The identification of a relationship between direct-physical bullying among boys, unpopularity among girls and receipt of nasty or threatening text and e-mail messages is worthy of some consideration. Pepler et al. (2008) have argued that differences between the sexes in terms of the types of bullying they experience may not be as apparent as first thought, particularly among older pupils. They noted in their longitudinal study that issues such as moral disengagement and relationship difficulties predicted high rates of bullying perpetration. Thus, for boys, one explanation may be that the receipt of nasty or threatening text messages and e-mail represents a form of moral disengagement by perpetrators (a removal from the behavioural strictures placed upon students at school) and an ability to extend those behaviours already occurring offline (e.g. threats of direct-physical bullying). Concomitantly, as Nansel et al. (2001) have shown girls' bullying tends to involve the manipulation of relationships through behaviours such as the spreading of rumours much more than boys (65% versus 55%; 6^{th} grade to 10^{th} grade). The sending of nasty or threatening text and e-mail messages may provide a means by which perpetrators ensure that currently unpopular girls remain unpopular, as well as providing a means to isolate the victim (indirect bullying), and also instigate direct bullying behaviour (albeit electronically). This

would support the inferences drawn by Pepler et al. (2007). Thus, those age and gender differences previously reported by researchers (see, for example, Rivers & Smith, 2004) may in fact be artifacts of the time in which the studies were conducted, and that those differences no longer are relevant to the online youth of today.

Developing a theoretical context for 'cyberbullying'

In much of the research that has been conducted on 'cyberbullying' there has been little (if any) regard for the theoretical understandings of this phenomenon. Indeed as previously noted many of the studies of what we call 'cyberbullying' have not been consistent in terms of their scope or the definitions they used. Hinduja and Patchin (2008) offered a brief overview of the theoretical frame that informed their study. Borrowing from criminology, they argued that 'cyberbullying' can be viewed as a learned behaviour or a manifestation of a latent trait such as low self-control (cf. Pepler et al., 2007). While there has been some debate surrounding whether or not 'bullies' have low self-esteem, researchers have found that 'bullies' often display a high degree of control over their environment, and have well-developed social skills (see Sutton, Smith, & Swettenham, 1999). For victims, however, it is evident that 'cyberbullying' or indeed any form of technology mediated aggression, reinforces a sense of worthlessness among victims (see Ybarra, Diener-West, & Leaf, 2007). Interestingly, Patchin and Hinduja also suggested that issues such as race and sex may be less relevant in the context of 'cyberbullying' as the environment is free from the cultural and gender-based assumptions that permeate the material world, and provides an opportunity for the individual to interact with other people anonymously, or in the guise of someone older or younger than himself/herself, or indeed as a member of the opposite sex.

Early research on computer-mediated interactions postulated that many of the behaviours that are represented in text format online are not meaningful because they are not 'real' i.e. they did not occur in the material world (Turkle, 1995). Young (1996a) argued that while physicality (i.e. the material world) allows us to frame 'the boundaries of our sense of containment', when those boundaries no longer exist the ideas or beliefs people encounter online can be idealised or denigrated, often without justification. He went further to argue that, 'one of the most striking features of email forums and letters is that people can experience almost no impediment to expressing themselves - for good or ill - because it all feels as if it its happening in the head' (Young, 1996b). Thus, he argued that for many people interactions on the internet become *fantasy*, and the harmful potential of a confrontational or abusive exchange with another person sitting at another computer in another room, potentially in another country is questionable (at least from the point of view of the perpetrator). To a certain degree, the evolution of social networking sites and the suicide of Megan Meier in particular has challenged this worldview in that, for many young people, online interactions are real, and that the separation of the virtual and material worlds perhaps exists only among those of us who were not brought up in an age of instant messaging and online communication. Nevertheless, the question remains, why does 'cyberbullying' exist?

From within the field of psychology, research conducted by Dovidio, Kawakami, and Beech (2001) can help us understand why the 'cyberbullying' now exists. They have shown that there is very weak convergence between explicit attitudes purportedly held by people and those they hold implicitly. While prejudices can be explicitly rejected in the face of social opprobrium, they can still be retained by individuals who find opportunities to air them in the presence of like-minded others,

or in fora where their anonymity can be assured. In essence today's communication technologies offer both these opportunities. Rudman, Phellan, and Heppen (2007) developed this idea further by showing that a learned component to the development of explicit and implicit attitudes exists which, if left without check, promotes unhealthy or problematic behaviours (in their study the behaviours/conditions were smoking and obesity). In terms of 'cyberbullying' if, as Hinduja and Patchin (2008) suggest the virtual world represents an environment where material or explicit sensibilities are no longer applicable, or are, at the very least, less applicable, then it also holds that such an environment may be perceived to be one that grants greater licence to express implicit beliefs and attitudes, or engage in greater excesses or behaviour with the promise of less chance of detection as a result of the ability to block or hide one's identity.

For teachers and parents, to effectively combat this new form of bullying there is a need also to understand the types of prejudices, beliefs, and dislikes students hold or encounter online. Taking these observations a step further, it would therefore seem that any intervention that was designed to challenge the prejudices that are expressed online, or limit the fora for the airing of those prejudices, grievances, or the dislike of one or more others would necessarily have to involve the imposition of a degree of censorship beyond that currently in place (e.g. net nannies). This is, in essence, where Government policy is directed (see below). However, in addition to the imposition of further safeguards and censorship for students, in the case of 'cyberbullying' there is yet another task that researchers in partnership with teachers and parents have to address, and that is to understand the context in which 'cyberbullying' takes place and, more particularly its nature, expression, and content. To effectively challenge the negative perceptions or beliefs than inform a perpetrator's decision to harass or

otherwise abuse a peer online, it is important that we understand the significance of the messages that victims receive, not simply record their frequency, and interrogate the context and interpersonal dynamics that underpin the relationship between the perpetrator and the victim. This is, of course, predicated upon the ability to identify the perpetrator (or, at the very least, her or his sex) which, at best, has only be done in 50% of cases of 'cyberbullying' without UK law enforcement invoking the 2003 Communications Act (Section 127 allows police officers to track individual internet protocol [IP] addresses or mobile/cellular phone numbers through service providers). To date, the absence of qualitative data on the nature of 'cyberbullying' has meant that many of the interventions currently recommended are extensions of those that address more traditional forms of bullying. For example, avoiding or ignoring the 'bullies' (i.e. deleting text and e-mail messages from unknown sources or blocking known and unknown telephone numbers), and telling a parent or a teacher are cited by students and educators alike as appropriate or recommended actions or interventions (see Agatston, Kowalski, & Limber, 2007; Smith et al., 2008). While such actions may provide 'cybervictims' with the ability to curtail their interactions with 'cyberbullies', they are short-term solutions to an issue that will expand as technology develops, and they require 'cybervictims' to learn 'risk' management strategies rather than address the attitudes and online behaviour of 'cyberbullies'.

Towards managing 'risk': New policy directions for educators

In the UK, in an independent review (sponsored by the Prime Minister's Office) exploring the risks of exposure to potentially harmful or inappropriate material on the WWW and in video games, Byron (2008) has argued that current debates relating to the harm caused by new technologies is unhelpful, rather there is a need to look at ways of empowering children and young people to manage risk

effectively. With respect to video games, a review of various developmental neuropsychological studies determined that age-related restrictions or classifications were necessary to ensure that children are not exposed to violent media at an inappropriate stage in development. In addition, Byron recommended the more stringent regulation of the internet, and the application of a classification scheme which provides 'lock-out' options for searches that are deemed unsafe. While only brief mention was made of issues associated with the sending of inappropriate text, e-mail, and video-messages, the recommendations placed the impetus upon those involved in the training of teachers to raise the level of knowledge around e-safety and to assess that knowledge against professional standards of competence.

According to Byron (2008), rather than blame technologies and their creators for the abuses that have taken place, young people can be shown how to manage most of the risk they encounter, if not all of it. However, a caveat must be placed here. Ybarra, Diener-West, Markow, Leaf, and Hamburger (2008) have demonstrated some of the 'risk' young people encounter exists within mainstream media - on news sites and web-pages that feature stories, pictures, and commentaries on topical issues such as war, death, and terrorism. However, it would seem that in order to teach young people how to manage risk effectively there is a need to better understand the way in which personal safety issues are negotiated online, and how the decisions young people make online differ functionally from those offline. At the very least, guidance materials addressing e-safety are pivotal to management of 'risk', and should provide potential victims of text or e-mail aggression, or any form of 'cyberbullying' with strategies to block or challenge inappropriate messages, requests, and web-posts, and offer generic guidance to all users of media and communication technologies on appropriate usage and conduct. Nevertheless, it is almost impossible to provide

teacher trainers with information and guidance on how to tackle 'cyberbullying', or indeed any form of technology mediated violence, without understanding the content and context of a chat scenario, newsgroup or bulletin board posting, or text message, and, as noted previously, this is where future effort should be expended.

Strengths and limitations of the study

Although our study addresses being bullied by text and e-mail message only, it remains the only longitudinal investigation of one aspect of phenomenon we now call 'cyberbullying'. For five years, we have been able to sample over 2,500 students from the same schools in academic years 7 and 8, providing us with an opportunity to monitor students' experiences of text message and e-mail bullying. Furthermore, we have been fortunate that the samples were representative of the KS 3 pupils attending schools in the region where the study was undertaken. As we noted above, the schools participating in this study included Faith schools as well as community colleges and high schools, and catchment areas for each of the schools, and entrance requirements did not vary across the five years.

In terms of limitations, we should acknowledge that, whilst being representative of the geographical region, students in this study were predominantly White British, thus our data may not be illustrative of national bullying statistics. Secondly, while data were collected from students anonymously, the use of self-report measures requires that some caution is exercised in the interpretation of findings as some students may not have been accurate in their responses. In addition, we again acknowledge that, since 2002 there have been significant developments both in terms of media and communication technologies and in terms of students' access to and use of those technologies. Smith et al. (2008) have identified six different media linked to cyberbullying (phone calls, instant messaging, text-messaging, email, video

clips/messages, websites, and chatrooms) whereas we have focused our attention on only two. Thus, our data does not provide estimates of the incidence of 'cyberbullying' as it is currently understood in the UK. Furthermore, we have not addressed issues surrounding bullying via social networking sites which, as noted above, have already resulted in several young people taking their own lives and engaging in risky offline behaviour (Bhat, 2008). Finally, in this study we did not explore young people's engagement with online adventure games, their ability to 'play out' aggressive interactions within controlled 'virtual' environments, and the potential consequences these aggressive interactions have for psychological well-being (Crowe & Bradford, 2006).

Comparable with other studies of 'cyberbullying', it should be acknowledged that the inclusion of single or occasional reports of text and e-mail bullying in the data inflates prevalence statistics. It has been suggested by some researchers that there is a functional difference between incidents of harassment that occur online for example and 'cyberbullying'. Wolak et al. (2007) have argued that, in the majority of cases where young people report being harassed online, terms such as 'bullying' or 'cyberbullying' may be inappropriate particularly where there is little or no evidence of co-occurring offline victimization. To construe such interactions as 'bullying' or 'cyberbullying' Wolak et al. suggested that there is a need to (a) establish intent on the part of the perpetrator towards the target or victim; and (b) demonstrate the repeated nature of that behaviour. They have suggested that behaviours they describe as 'online harassment' are different from bullying because 'bullying' *per se* requires the victim to understand the intention behind the action, the aggression contained within it, and the power the perpetrator has over her or him. This can be particularly difficult where the perpetrator is anonymous (as a result of caller identification

blocking, or the use of an e-mail account registered under a false name). Yet as we have shown the content of text messages and e-mail correspondence often betrays the underlying aggression and power that the perpetrator perceives s/he has over the victim.

Summary and future directions for research

In addition to the stated specific aims of the analyses we undertook, the over-arching aim of this study was to provide researchers, policy makers, educators, and, we hope, parents with an appreciation of text and e-mail aggression as it emerged and became a national policy issue for school education in the UK. While there have been numerous cross-sectional studies of the phenomenon now called 'cyberbullying', those studies have employed different methodologies, different definitions, and different ways of calculating prevalence. Our analyses were intended to provide insights into the nature and correlates of text and e-mail mediated aggression, and offer additional insights into the content of those messages, and the possible reasons why such messages were sent. This study adds to the body of literature in several different ways: it is longitudinal, it is focused in terms of the technology it explored, it has considered market uptake of the internet and mobile/cellular phone ownership as correlates of increases in text and e-mail aggression, and it has provided an initial summary analysis of the content of the text and e-mail messages students have received. While we acknowledge there are questions left to be answered, this study provides a unique primary historical account of the emergence of a new form of bullying.

As we have noted, there are questions yet to be answered, and these invariably must focus upon the content, expression and context in which 'cyberbullying' takes place. We need to better understand the gendered nature of 'cyberbullying' wherever

possible, though as we have discussed, the ability to change one's identity online makes this all the more difficult. We need to conceptually define what 'cyberbullying' is. Is it text-based or is it simply mediated by technology? For example, should calls to and from a mobile/cellular phone be included (as in the case of Smith et al.'s 2008 research), and how do these differ from threatening or harassing telephone calls received or sent from a landline? While quantitative research has a useful role to play in monitoring prevalence, attention should now focus on qualitatively understanding the 'cyberbullying' phenomenon, particularly from the perspective of the 'cyberbully'. Is 'cyberbullying', as various researchers have suggested, an old problem in a new guise, or is it sociologically and psychologically different from that which has gone before?

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Table 1

Key Studies of 'Cyberbullying' Since 2002

Study	*N*	Age Range	Method	Type of cyberbullying investigated
Finkelhor et al. (2000)	1501	10-17	Representative national survey - Youth Internet Safety Survey – YISS 1 (US)	Online harassment: instant message, internet chat-room, and e-mail.
NCH (now Action for Children) (2002)	856	11-19	Survey (UK)	SMS/text message, internet chat room, and e-mail.
Ybarra and Mitchell (2004)	1501	10-17	Representative national survey - YISS 1 - 1999-2000 (US)	See YISS 1

NCH 'Putting U in the Picture – Mobile Bullying Survey' (2005)	770	11-19	Survey (UK)	SMS/text message, internet chat room, and e-mail
Li (2005)	177	12-13	Survey (Canada) of students in 7th grade	Unspecified behaviour - e-mail, internet chat room, and mobile/cellular phone (it is unclear whether this includes SMS/text message and/or verbal abuse)
Agatston and Carpenter (2006)	257	11-14	Middle school student survey grades 6-8 (US)	Instant message, and website
Fight Crime Preteen (2006)	503	6-11	Telephone survey (US)	SMS/text message, e-mail, instant message, website, internet chat room, and photo
Fight Crime Teen (2006)	512	12-17	Telephone survey (US)	SMS/text message, e-mail, instant message, website, internet chat room, and photo
Kowalski and Limber (2006)	3767	11-14	Survey of students in grades 6-8 (US)	Electronically bullied: e-mail, instant message, chat room, website, and SMS/text message.
Kowalski and Witte (2006)	700	> 11	Survey of predominantly college students (US)	Instant message, internet chat room, and e-mail

Li (2006)	264		Survey of students in grades 7-9 (Canada)	Unspecified behaviour
MSN (2006)	518	12-15	Survey	Online bullying: blog, instant message, and e-mail
Patchin and Hinduja (2006)	384	< 18	Online survey (US)	SMS/text message, internet chat room, e-mail, bulletin board, computer text messaging, and newsgroup
Smith et al. (2006)	92	11-16	Survey (UK)	Mobile/cell phone call, SMS/text message, e-mail, picture/video clip, instant message, web site, and internet chat room
Ybarra et al. (2006)	150	10-17	Representative national survey - YISS 2 – 2005 - (US)	See YISS 1
WiredSafety (2006)	>900	>7	Online survey	Bullied online
Williams and Guerra (2007)	3339	10-17	Survey of students in grades 5, 8, and 11 (US). Follow up 12 months	Unspecified internet harassment

			later (*N* = 2293)	
Hinduja and Patchin (2008)	1378	< 18	Online survey (US)	Computer text messaging, e-mail, SMS/txt message, internet chat room, bulletin board, and newsgroup.
Smith et al. (2008)	533	11-16	School survey	Mobile/cell phone call, SMS/text message, e-mail, picture/video clip, instant message, web site, and internet chat room

NOTE: Developed and extended from Kowalski et al. (2008)

Table 2

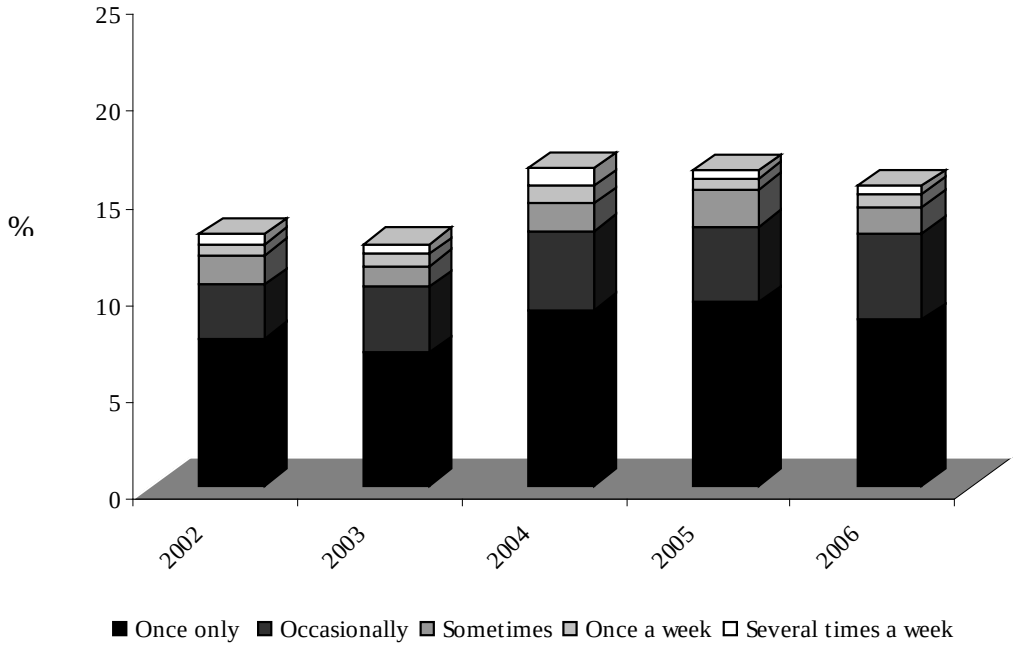
Number of Students Participating in Study by Year and by Cohort

			Year Group			
Year of Survey	Sex	N	Yr 7	Yr 8	Yr 9	Yr 10
2002	Boys	1,357	643	689	18†	7†
	Girls	1,365	638	683	27†	17†
2003	Boys	1,413	780	625	8†	0
	Girls	1,487	828	645	14†	0
2004	Boys	1,499	776	723	0	0
	Girls	1,576	811	765	0	0
2005	Boys	1,213	620	593	0	0
	Girls	1,235	621	614	0	0
2006	Boys	1,509	672	735	102†	0
	Girls	1,512	672	718	122†	0

NOTE † data not included in analyses; □\□ Linked boxes denote cohorts

Figure 1

Receipt of Nasty or Threatening Text Messages and E-mail by Year of Survey

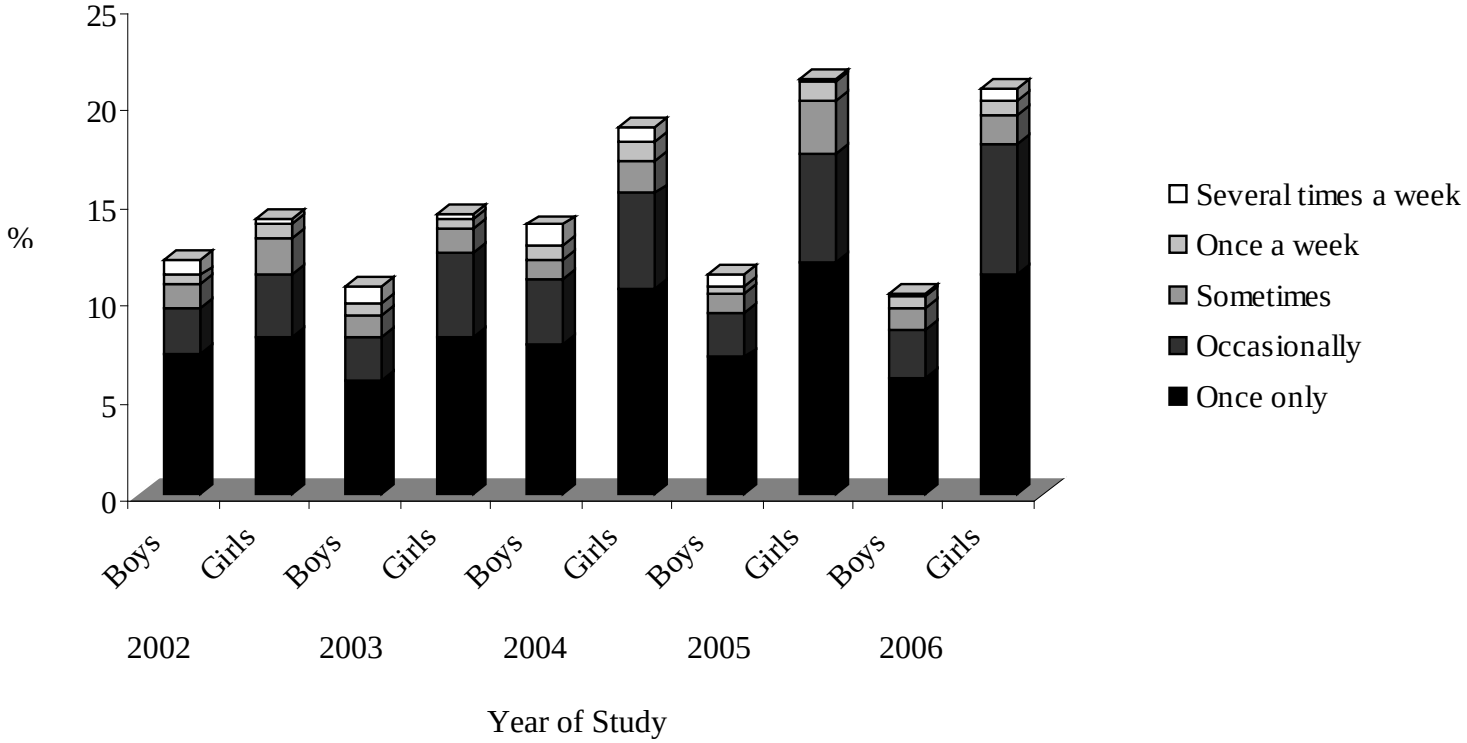


Additional table inserted by authors to accompany Figure 1

Response Item	2002	2003	2004	2005	2006
Once only	7.6	6.9	9.1	9.5	8.6
Occasionally this term	2.8	3.4	4.1	3.9	4.5
Sometimes	1.5	1.1	1.4	1.9	1.3
Regularly, once a week	0.6	0.6	0.9	0.6	0.7
Frequently, several times a week	0.5	0.5	0.9	0.4	0.4
TOTAL	13	12.5	16.4	16.3	15.5

Figure 2

Receipt of Nasty or Threatening Text Messages and E-mail by Year of Survey (Years 7 & 8 Only)



Additional table inserted by authors to accompany Figure 2

	2002		2003		2004		2005		2006	
Response Item	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Once only this term	7.2	8.0	5.8	8.0	7.7	10.5	7.0	11.9	5.9	11.3
Occasionally this term	2.3	3.3	2.3	4.4	3.3	4.9	2.3	5.5	2.5	6.6
Sometimes	1.3	1.8	1.1	1.2	1.0	1.7	1.0	2.8	1.1	1.5
Regularly, once a week	0.4	0.8	0.6	0.5	0.7	1.0	0.3	0.9	0.6	0.8
Frequently, several times a week	0.8	0.2	0.8	0.2	1.1	0.7	0.7	0.2	0.2	0.6
TOTAL	12.0	14.1	10.6	14.3	13.8	18.8	11.3	21.3	10.3	20.8

NOTE Years 7 and 8 only

Figure 3

Receipt of Nasty or Threatening Text Messages and E-mail and Association with Household Uptake in Mobile/Cell Phone Ownership and Internet Connectivity.

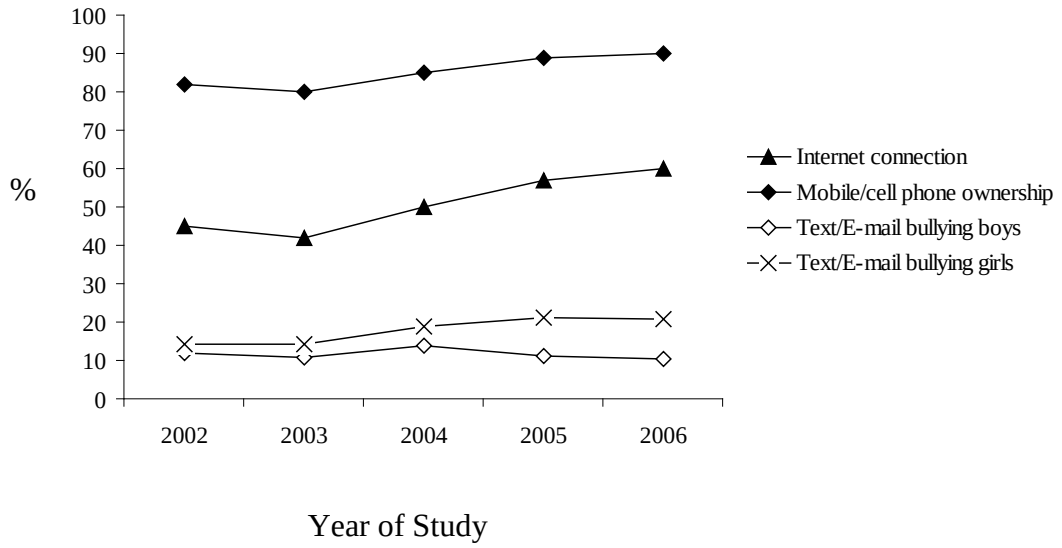


Table 3

Receipt of Nasty or Threatening Text Messages and E-mail and Association with Household Uptake in Mobile/Cell Phone Ownership and Internet Connectivity.

	Year of Study				
Percentages	2002	2003	2004	2005	2006
Household Internet connection	45.0	42.0	50.0	57.0	60.0
Mobile/cell phone ownership	82.0	80.0	85.0	89.0	90.0
Text/E-mail bullying - Boys	12.0	10.6	13.8	11.3	10.3
Text/E-mail bullying - Girls	14.1	14.3	18.8	21.3	20.8

Table 4

Logistic Regression Predicting Likelihood of Receiving Nasty or Threatening Text Messages and E-mail: Boys

	B	S.E.	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Direct-Physical	1.31	.36	13.46	1	.000	3.69	1.84	7.42
Direct-Verbal	-.22	.35	0.39	1	.532	0.81	.41	1.59
Indirect-Relational	-.34	.34	0.96	1	.328	0.71	.37	1.40
Bullying Perpetration	.61	.50	1.45	1	.228	1.83	.68	4.92
Behaviour at school	.41	.33	1.54	1	.215	1.51	.79	2.89
Liking School	-.01	.61	0.00	1	.998	1.00	.30	3.28
School Work	-1.07	1.05	1.04	1	.309	0.34	.04	2.69
Unpopularity	.042	.120	0.12	1	.726	1.04	.83	1.32
Constant	-8.81	1.64	28.74	1	.000	0.00		

NOTE Bonferroni adjusted Alpha = .006

Table 5

Logistic Regression Predicting Likelihood of Receiving Nasty or Threatening Text Messages and E-mail: Girls

	B	S.E.	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Direct-Physical	0.00	.26	0.00	1	.992	1.00	.60	1.68
Direct-Verbal	.21	.23	0.79	1	.373	1.23	.78	1.94
Indirect-Relational	.35	.22	2.58	1	.108	1.41	.93	2.15
Bullying Perpetration	.37	.35	1.12	1	.289	1.45	.73	2.89
Behaviour at school	-.16	.26	0.39	1	.532	.85	.52	1.41
Liking School	.34	.40	0.70	1	.402	1.40	.64	3.09
School Work	-.27	.55	0.23	1	.629	.77	.26	2.26
Unpopularity	.23	.08	9.30	1	.002	1.26	1.09	1.46
Constant	-7.58	1.01	56.250	1	.000	.001		

NOTE Bonferroni adjusted Alpha = .006

Table 6

Text/Email Message Content

Category of response	Boys (%) N = 55	Girls (%) N = 185
1. Threat of physical violence e.g *"I'm going to kick your head in when you least expect it"* , *"you're being knocked out after school"*	17 (31)	36 (20)
2. Abusive or hate-related e.g. *"I h 8 u", "You f***ing clown-faced b*****d"* , *"you are cursed and will die a painful death"*	14 (25)	24 (13)
3. Name calling (including homophobia) e.g. *"I hate you, you f***ing bitch, and you're a slag", "lesbian", "u r gay"*	2 (3)	48 (26)
4. Death threats e.g. *"trust me ur gonna die bitch", "you will die in 2 days", "I know where you live, I'm going to kill you"*	7 (13)	18 (10)
5. Ending of platonic relationship(s) e.g. *"you are a slag, I'm never gonna speak to you again", "I'm glad you've gone on holiday, I never wanted to be friends with you"*	0 (0)	9 (5)
6. Sexual acts e.g. *"wat u up2, I want to f*** you"*	6 (11)	1 (0)
7. Demands/instructions e.g. *"get me 10 packets of polos, chuddy"*	1 (2)	2 (1)
8. Threats to damage existing relationships e.g. *"I'm going to tell him that you said…."*, *"I'm going to make your mates turn against you"*	1 (2)	7 (4)

9. Threats to home/family e.g. *"I will get you and your family too", "I will kill your mum and dad", "I am going to burgle your house tonight"*	4 (7)	9 (5)
10. Menacing chain messages e.g. *"Send this text message to ten of your friends, if you don't you will pay!", "If you don't pass this on you will die"*	0 (0)	18 (10)
11. Other e.g. *"I am going to infect your computer with a virus", "I will eat your soul, ha, ha, ha"*	3 (6)	13 (7)

Appendix 1: Table to accompany Figure 1

Receipt of Nasty or Threatening Text Messages and E-mail (as Percentages) by Year of Survey

Response Item	2002	2003	2004	2005	2006
Once only	7.6	6.9	9.1	9.5	8.6
Occasionally this term	2.8	3.4	4.1	3.9	4.5
Sometimes	1.5	1.1	1.4	1.9	1.3
Regularly, once a week	0.6	0.6	0.9	0.6	0.7
Frequently, several times a week	0.5	0.5	0.9	0.4	0.4
TOTAL	13	12.5	16.4	16.3	15.5

Appendix 2: Table to Accompany Figure 2

Sex Differences in Receipt of Nasty of Threatening Text Messages and E-mail (as Percentages) by Year of Survey

	2002		2003		2004		2005		2006	
Response Item	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Once only this term	7.2	8.0	5.8	8.0	7.7	10.5	7.0	11.9	5.9	11.3
Occasionally this term	2.3	3.3	2.3	4.4	3.3	4.9	2.3	5.5	2.5	6.6
Sometimes	1.3	1.8	1.1	1.2	1.0	1.7	1.0	2.8	1.1	1.5
Regularly, once a week	0.4	0.8	0.6	0.5	0.7	1.0	0.3	0.9	0.6	0.8
Frequently, several times a week	0.8	0.2	0.8	0.2	1.1	0.7	0.7	0.2	0.2	0.6
TOTAL	12.0	14.1	10.6	14.3	13.8	18.8	11.3	21.3	10.3	20.8