



We Are Safe but You Are Not: Exploring Comparative Optimism and Cyber Bullying

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Abstract

Individuals tend to believe that when comparing themselves to others they are less vulnerable to potential risks. This is referred to as comparative optimism, whereby individuals believe that they are immune from negative experiences that can happen to others. The current study examined comparative optimism judgements for the likelihood of experiencing cyber bullying. Comparative optimism was examined in three age groups: older adolescents ($n = 130$, 57% female, $M_{age} = 16.82$, $SD_{age} = .38$), emerging adults ($n = 355$, 92% female, $M_{age} = 19.26$, $SD_{age} = .27$), and adults ($n = 147$, 66% female, $M_{age} = 33.24$, $SD_{age} = 9.77$). All participants reported the likelihood that they, their friends, other students [forum users] younger than them, other students [forum users] their age, people older than them, and strangers would experience cyber bullying. Participants displayed an optimistic bias, reporting that they were less likely to experience cyber bullying than others. However, the relative risk of experiencing cyber bullying varied according to comparator group. Comparator groups that were socially close to the participants (e.g. friends) were generally rated as less likely to experience cyber bullying than socially distant comparator groups (e.g. strangers). Also, comparator groups that were younger than the participants were consistently judged to be most at risk of experiencing cyber bullying. Together, the findings have implications for the design of anti-cyber bullying interventions and campaigns to promote digital safety.

Keywords Cyber bullying · Comparative optimism · Relative risk

The rapid growth in digital technology usage has increased the likelihood that young people will be exposed to cyber bullying experiences (Livingstone and Smith 2014). Cyber bullying can be defined as an “(a) intentional aggressive behaviour that is, (b) carried out repeatedly, (c) occurs between a perpetrator and victim who are unequal in power, and (d) occurs through electronic technologies” (Kowalski et al. 2014, p. 1073). Prevalence rates for experiencing cyber bullying range from 1.5% in a sample of Spanish 12- to 18-year-olds (Ortega et al. 2008) to 72% in a sample of American 12- to 17-year-olds who reported experiencing at least one form of online bullying over the last year (Juvonen and Gross 2008). Experiences of cyber bullying are not limited to adolescents; however, with

evidence indicating cyber bullying experiences occur across the lifespan (Ševčíková and Šmahel 2009).

Despite the concerns voiced by educational practitioners, parents, and researchers about the pervasive nature of cyber bullying, many young people say that cyber bullying will not happen to them (Betts and Spenser 2017). The current study examined whether, across three age groups (late adolescents, emerging adults, and adulthood), individuals hold optimistic beliefs regarding the likelihood of experiencing cyber bullying.

Comparative optimism is the tendency for individuals to believe that they are less vulnerable to negative events and more likely to experience positive events than others (Chambers and Windschitl 2004). Specifically, adults report that they are more likely to have fulfilling social connections (Carver and Scheier 2014), be less likely to be involved in road traffic collisions (Castanier et al. 2012), and be less susceptible to alcohol related health risks (Wild et al. 2001) compared to others.

Focusing on using digital technology, individuals are overly optimistic about their experience of positive events and negative events when using the Internet (Campbell et al. 2007) and Facebook (Kim and Hancock 2015). Further, it is

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likely that young people who believe they will not experience cyber bullying (Betts and Spenser 2017) may be drawing on comparative optimism. However, this argument is yet to be empirically tested. Therefore, the current study examined whether individuals use comparative optimism as a mechanism when judging the relative risk of experiencing cyber bullying for themselves and others (referred to as the comparator group).

Comparative optimism is not stable across the lifespan with perceptions of vulnerability decreasing with age (Reyna and Farley 2006) and optimism judgements increasing until approximately 70 (Chopik et al. 2015), suggesting that some of the variance in the findings can be attributed to the age of the samples. For example, Gosselin et al. (2010) found that older drivers held more optimistic beliefs than young drivers about the likelihood of being involved in an accident. This variance in comparative optimism across the lifespan may also extend to cyber bullying. Experiences of cyber bullying are not limited to adolescents as cyber bullying occurs across the lifespan (Ševčíková and Šmahel 2009). Therefore, to explore the possible developmental trajectory of comparative optimism judgements for cyber bullying experiences, three age groups were recruited for the current study: older adolescents, emerging adults, and adults. A distinction was made between adults and emerging adults, given that emerging adulthood (aged 18 to 25 years old) is viewed as a distinct developmental period characterised by periods of change and social exploration (Arnett 2000).

The nature and composition of the comparator group(s) impacts on comparative optimism judgements. Specifically, vague and socially distant comparator groups are consistently identified as being more at risk when compared to the self, because when judging socially close comparators individuals rely on similar self-protection mechanisms to those used when they judge their own risk (Perloff and Fetzer 1986). Additionally, when judging socially close individuals, there is also the perception that friends' behaviours reflect back on to the individual (Pahl et al. 2009). Regarding online activity, Paradise and Sullivan (2012) argued that participants did not judge their friends to be at risk when using Facebook because they shared a common group membership and participants extended the optimistic bias to other networks to which they belonged.

The age of the comparator group is another important determining factor for comparative optimism judgements. Research has shown that adolescents (Scharrer and Leone 2008) and adults (Baek et al. 2014; Scharrer 2002) judge those younger than themselves to be at greater risk of negative events and, as such, more vulnerable. Scharrer and Leone (2008) argue that this finding is indicative of the belief that with age comes wisdom. Therefore, the current study included a range of comparator groups that varied by social distance and age.

Previous research has also reported gender differences in comparative optimism. However, the direction of these findings is mixed; some studies have reported that females are less optimistic than males (Puskar et al. 2010) whereas other studies have reported no gender differences (Joshi and Carter 2013). Therefore, we examined gender differences in reports of comparative optimism, although no direct predictions were made because of the lack of a consistent pattern in the previous research.

The study examined (a) the nature of comparative optimism for cyber bullying, (b) whether age differences exist in ratings of comparative optimism, (c) if comparative optimism beliefs varied according to comparator group, and (d) whether gender differences in comparative optimism existed. This study extended current literature on comparative optimism by examining this phenomenon within a cyber bullying framework across the late adolescent to adulthood lifespan.

The following hypotheses were tested:

H1: individuals will hold comparative optimistic beliefs for their relative risk of experiencing cyber bullying.

H2: there will be age differences in the nature of comparative optimism for cyber bullying in late adolescents (16- to 17-year-olds), young adults (18- to 24-year-olds), and adults.

H3: the strength of the comparative optimistic beliefs will vary according to the nature of the comparator group. It is expected that groups socially closer to the individual will be rated at a similar level to the self with optimistic judgements more similar to the self for friends. Further, it is expected that such effects will be reduced for strangers. It is also expected that groups younger than the rater will be judged to be at greatest risk while older groups will be judged to be at less risk.

H4: there will be gender differences in comparative optimism for cyber bullying.

Method

Participants

Late Adolescents One hundred and thirty (74 female, 50 male, 6 not reported) 16- to 17-year-olds (*mean* age = 16.82, *SD* = .38) were recruited from three colleges for 16- to 18-year-olds across the UK.

Emerging Adults Three hundred and fifty five (326 female, 29 male, 2 not disclosed) 18- to 24-year-olds (*mean* age = 19.26, *SD* = .27) were recruited from one university in the UK.

Adults One hundred and forty seven (97 female, 45 male, 5 not disclosed) 25- to 74-year-olds ($mean\ age = 33.24$, $SD = 9.77$) were recruited from advertisements placed on online forums.

Measure

Comparative Optimism for Cyber Bullying Risk Similar to previous research (Byrne et al. 2014), comparative optimism was assessed by giving participants the following instruction: “For each person or group of people below, please indicate how likely you think it is that they will be cyber-bullied” and then asked to report separately for: “you”, “your friends”, “other students [forum users] younger than you”, “other students [forum users] your age”, “people older than you”, and “strangers”. Responses were given on a seven-point Likert scale ranging from 1 (*very unlikely*) to 7 (*very likely*), with higher scores indicating a greater likelihood of experiencing cyber bullying. The scale demonstrated good internal consistency in each of the three samples (late adolescents $\alpha = .86$, emerging adults $\alpha = .86$, and adults $\alpha = .89$).

Procedure

Late Adolescents Consent was initially given by the principals at the colleges. In line with recommendations from the British Psychological Society (2014), parents were informed about the study and asked to notify the college if they did not want their son/daughter to participate. Finally, before participating in the research, the adolescents were asked to give their consent either in writing or by selecting compulsory check boxes depending on whether they completed a paper-based or electronic questionnaire respectively. The questionnaire was distributed during a lesson either in an electronic format or a paper format according to the colleges’ preference.

Emerging Adults Participants were recruited through an online recruitment system at the participating university. Once participants had signed up for the study, they were asked to give their consent and then complete an electronic version of the questionnaire. The participants received course credit to compensate them for their time.

Adults The adult sample was recruited through nine general online forums and permission to advertise the study was gained from the moderators. Participants were asked to give their consent and then complete an electronic version of the questionnaire.

Ethical approval for the research was granted by the College of Business, Law, and Social Sciences research ethics committee (2014/28). All participants were informed that their results would be anonymous and kept confidential.

Results

Table 1 contains the descriptive statistics for comparative optimism ratings across all of the samples split according to gender. Table 2 contains the descriptive statistics for comparative optimism ratings for each sample split according to gender. To test H1, H2, H3, and H4 and to examine comparative optimism for cyber bullying across gender, sample, and comparator groups, a $2 \times 3 \times 6$ (gender \times sample \times comparator group) mixed ANOVA was performed. Gender and sample were independent measures and the comparator group was repeated measures (with violations of sphericity dealt with using the Greenhouse-Geisser correction).

There were several statistically significant findings as listed in Table 3. Of particular note and in support of H4, females reported that all groups were at greater risk of experiencing cyber bullying compared to males. The results also indicate that participants thought that they were less at risk of experiencing cyber bullying compared to the other comparator groups providing support for H1. In support of H3, the variation in participants’ relative risk judgement varied according to social distance and age. Pairwise comparisons revealed significant differences between all of the comparator groups ($p < .001$) with the exception being between friends and older people.

There was a significant three-way interaction between comparator group, gender, and sample. To explore the three-way interaction the profile ratings with 95% confidence intervals for each comparator group for males and females across all three samples were examined (Fig. 1).

A complex pattern of results emerges across the three samples. As shown in Fig. 1 by the separation between the lines, especially for the late adolescents and emerging adults, it is evident that males and females judged each comparator group to be at a different level of risk of experiencing cyber bullying. Across all samples, as shown in Fig. 1, there were notable peaks in the relative risk of younger students [forum users] and strangers experiencing cyber bullying. For ease of interpretation, the comparator group and gender differences will be explored for each sample.

For the late adolescents, as denoted by the lack of significant overlap between the confidence intervals (Baguley 2012) in Fig. 1, females rated the self, friends, younger students, and students the same age to be at greater risk than males. The overlap between the confidence intervals in Fig. 1 for the late adolescents between older students and strangers suggests that there were no gender differences for these comparator groups.

The emerging adult sample has a profile of means that is generally similar to the late adolescents. Further, the difference between the ratings for the males and females is less pronounced in the emerging adults (as denoted by the overlap in confidence intervals in Fig. 1). Emerging adult males and females appear to be more consistent in the ratings awarded.

Table 1 Descriptive statistics for comparative optimism for cyber bullying risk across all samples according to gender

	Total					
	Male		Female		Total	
	M	SD	M	SD	M	SD
You	2.14	1.47	2.67	1.58	2.57	1.57
Your friends	2.79	1.55	2.87	1.53	2.79	1.53
Other students [forum users] younger than you	4.96	1.64	5.06	1.26	4.96	1.36
Other students [forum users] your age	3.28	1.48	3.74	1.46	3.65	1.47
People older than you	2.94	1.51	2.94	1.51	2.91	1.53
Strangers	4.21	1.35	4.63	1.27	4.54	1.29

However, as denoted by the lack of overlap in the confidence intervals in Fig. 1, there is a clear difference for the ratings of the self and strangers with females rating both of these comparator groups higher than males.

The profile of means for males and females from the adult group is near identical as denoted by the significant overlap between all of the confidence intervals (Baguley 2012). The self and friends were judged to be at near identical levels of risk suggesting that the limited social distance between friends and the self is particularly strong for the adult group.

Discussion

The current study examined comparative optimism judgements for the likelihood of experiencing cyber bullying in three age groups. There was a consistent tendency for participants to display an optimistic bias and regard themselves as less likely than others to experience cyber bullying. However, variation did occur in judgements according to the composition of the comparator group. Male late adolescents and emerging adults also held stronger optimistic beliefs than females.

Across the three samples, the strength of the optimistic judgements varied according to comparator group. As with other studies, those more socially close to the respondents were judged to be less at risk and this was particularly the case for the adult sample. This pattern of results reflects the perceptual bias associated with making judgements about friends (Paradise and Sullivan 2012). The participants also appeared to use the ‘with age comes wisdom’ heuristic (Scharer and Leone 2008), as the comparator group judged to be at greatest risk was those younger than the participants. While this finding may reflect the profile of cyber bullying prevalence which peaks at the age of 14 (Ortega et al. 2012), it is important to note that studies have reported that cyber bullying occurs across the lifespan (Ševčíková and Šmahel 2009).

The gender differences identified in the current study may be indicative of a general optimism bias held by males (Puskar et al. 2010). However, this finding may also reflect (a) that females are more likely to experience cyber bullying than males (Dehue et al. 2008) and (b) the proportion of females in the current sample. The current findings suggest that comparative optimism is the mechanism underpinning Betts and Spenser’s (2017) finding that young people believe that they are not at risk of cyber bullying. Participants may be holding self-serving biases about the risk of cyber bullying to maintain

Table 2 Descriptive statistics for comparative optimism for cyber bullying risk according to sample and gender

	Late adolescents						Emerging adults						Adults					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
You	1.88	1.28	2.78	1.50	2.42	1.48	2.04	1.26	2.75	1.61	2.69	1.60	2.51	1.72	2.35	1.49	2.40	1.56
Your friends	2.39	1.66	3.04	1.41	2.78	1.54	2.46	1.42	2.91	1.56	2.88	1.55	2.53	1.53	2.58	1.47	2.56	1.47
Other students [forum users] younger than you	3.88	1.68	5.03	1.14	4.57	1.48	4.82	1.31	4.96	1.32	4.95	1.32	5.14	1.54	5.39	1.11	5.31	1.26
Other students [forum users] your age	2.98	1.33	3.67	1.49	3.40	1.46	3.39	1.34	3.83	1.46	3.79	1.45	3.53	1.70	3.52	1.43	3.52	1.51
People older than you	2.50	1.46	2.53	1.33	2.52	1.38	2.57	1.29	2.96	1.51	3.21	1.67	2.78	1.64	2.94	1.51	2.91	1.53
Strangers	4.23	1.12	4.53	1.09	4.41	1.11	4.18	1.25	4.77	1.29	4.73	1.29	4.21	1.66	4.20	1.24	4.20	1.37

Table 3 ANOVA summary table for differences in comparative optimism for cyber bullying according to gender, sample, and comparator group

Source	SS	df	MS	F	p	η^2
Gender	11.04	1.00	11.04	9.29	.002	.015
Sample	3.79	2.00	1.90	1.60	.204	.005
Comparator group	1677.08	3.95	424.20	309.97	.001	.340
Gender x sample	5.85	2.00	2.93	2.46	.086	.008
Comparator group x sample	57.10	7.97	7.22	5.28	.001	.017
Comparator group x gender	8.16	3.95	2.06	1.51	.198	.002
Comparator group x sample x gender	22.41	7.91	2.83	2.07	.036	.007
Error	715.38	602.00	1.19			
Error (comparator group)	3257.059	2380.04	1.36			

SS sums of square, MS mean squares

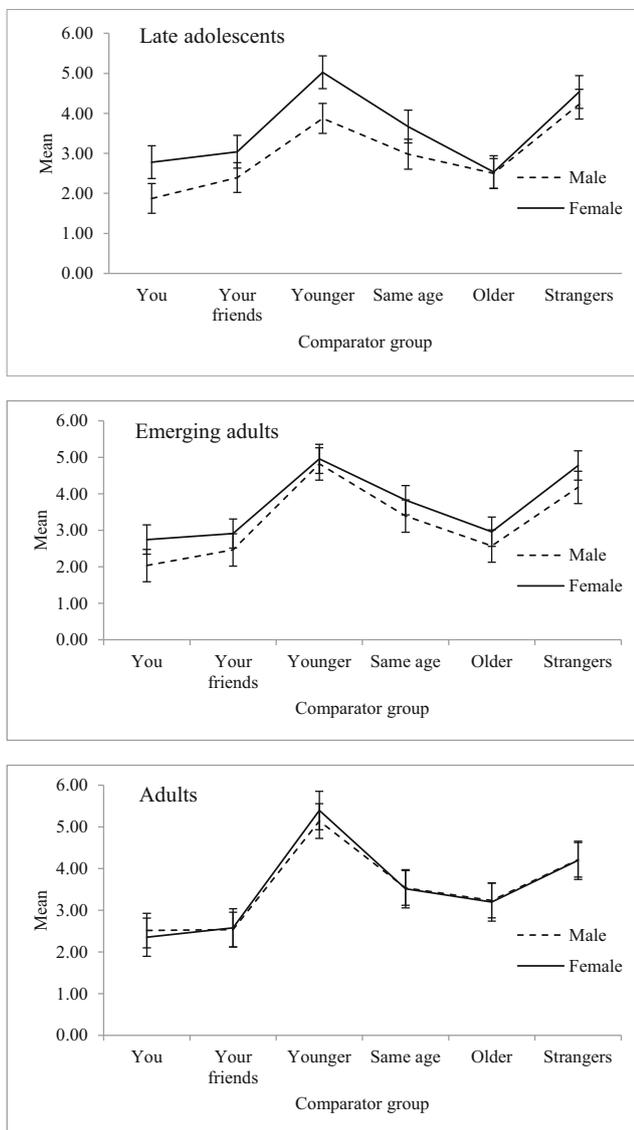


Fig. 1 The profile of means (with 95% confidence intervals) for each sample

their self-esteem (Metzger et al. 2015), although future research should directly explore this line of enquiry.

The current findings have implications for interventions designed to tackle cyber bullying and campaigns that promote digital safety as optimistic bias has been found to influence the success of similar campaigns (Weinstein and Klein 1995). Our findings suggest that individuals perceive themselves to be at reduced risk. Therefore, individuals may be less likely to engage with interventions or digital safety campaigns as they believe they are not the intended audience. Consequently, similar to health promotion campaigns adopting an appropriate gain or loss frame may go some way to overcome tendency for individuals to think they are not the intended audience (Garcia-Retamero and Cokely 2011). In the context of cyber bullying, a gain frame would highlight the benefits of engaging with e-safety while a loss frame would highlight the costs of not staying safe online.

As with other studies examining comparative optimism judgements, the current study can be criticised as being limited by the rarity of the event examined (Harris and Hahn 2011) and minority under-sampling where a disproportionate percentage of the sample will not experience the event (Shepperd et al. 2013). To overcome these limitations, Shepperd et al. (2013) advocate recruiting multiple samples of an appropriate size for the topic of consideration. The size and composition of the samples in the current research goes some way to address these issues because the prevalence rates of experiencing cyber bullying as a target converge between 20% and 40% (Dehue et al. 2008). The participants were also not given a definition of cyber bullying; thus, it is possible that some participants imagine a more general description of online aggression. Therefore, future research should address this issue by clarifying the nature of cyber bullying for participants.

Importantly, the current findings extend previous research by overcoming the limitation of using exclusively student samples where stronger optimistic biases are found compared to non-student samples (Paul et al. 2000). Specifically, our

adult sample was not recruited via an educational establishment. The inclusion of an adult sample also addresses the issue that some of the variation in previous research can be attributed the age of the sample as perceived vulnerability may reduce with age (Reyna and Farley 2006). Further, although the age range of the adult sample is wide, the adult sample does not extend to include those older adults who are reported to have reduced optimism levels (Chopik et al. 2015).

In conclusion, the current research has demonstrated the presence of an optimistic bias for the relative risk of experiencing cyber bullying and offers an exploration for why individuals believe they will not experience cyber bullying (Betts and Spenser 2017). The research also highlights variations according to comparator groups, age, and gender.

Compliance with Ethical Standards

Ethical approval for the research was granted by the College of Business, Law, and Social Sciences research ethics committee (2014/28) at Nottingham Trent University. All participants were informed that their results would be anonymous and kept confidential.

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