

Emotion-Related Personality Traits and Peer Social Standing: Unique and Interactive Effects in Cyberbullying Behaviors

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Abstract

This study investigated the unique and interactive effects of emotion-related personality traits (i.e., callousness and uncaring traits) and peer social standing (i.e., social preference and perceived popularity) on cyberbullying behaviors in preadolescents. A total of 529 preadolescents (247 boys, 46.69%) were recruited from an Italian middle school ($M_{\text{age}} = 12$ years and 7 months; $SD = 1$ year and 2 months). The participants primarily consisted of Italian children (91.12%). A series of binary logistic regression analyses parted by gender were conducted to examine the main and interactive effects of self-reported emotion-related variables and peer-reported social standing in the prediction of self-reported cyberbullying behaviors, while controlling for cyber victimization and grade effects. In girls, an uncaring disposition was directly associated with cyberbullying behaviors, whereas in boys this association only emerged for those with low perceived popularity. Our results indicated that, in developing anti(cyber)bullying programs, school researchers and practitioners should jointly consider individual and contextual factors.

Introduction

BULLYING IS A SUBTYPE OF PROACTIVE, goal-directed aggression, defined as a “systematic abuse of power” in which an intentional aggressive behavior is repeated against a relatively powerless victim.^{1–4} This conceptualization of bullying has led to the acknowledgment that bullies are not socially unskilled or dysregulated, but skilful and strategic, being able to use harassment and manipulation in order to achieve a high status and prestige within their peer group.^{5,6} Several studies have suggested that increased bullying of others is driven by the self-reported goals of acquiring and maintaining a high status, and of being dominant and popular, especially among preadolescent and adolescent males.^{7–10}

Bullying includes several negative actions, such as physical, verbal, and indirect aggression (which constitute the traditional form of bullying) and, in recent years, cyberbullying using electronic means (e.g., mobile phones or the Internet).^{11–14} The literature on bullying has found that these behaviors do not completely overlap, and has begun to identify the unique characteristics of individuals who exclusively engage in cyberaggression.^{15–19}

A large amount of research has been carried out to examine the individual factors that contribute to making a child more prone to bullying others. It has been found that

proactively aggressive individuals, such as bullies, are more likely characterized by a lack of affective empathy and guilt.^{20–22} Specifically, some recent studies on callous–unemotional traits and bullying showed that the callousness dimension (capturing a lack of empathy, guilt, and remorse for misdeeds, as well as a callous use of others for one’s own gain) and the uncaring dimension (capturing a lack of concern about performance in important activities or about other people’s feelings) were more strongly related to this phenomenon, as well as to antisocial, aggressive, and delinquent behaviors.^{23–25} In line with research on traditional bullying, recent studies on cyber aggression have begun to examine the association with personality dimensions. Adolescents who engaged in either traditional or a combination of cyber and traditional aggression reported higher levels of manipulativeness, remorselessness, and proactive and reactive aggression.¹⁹ Moreover, Ciucci et al.²⁶ found callousness and uncaring dimensions to be positively related to cyberbullying. However, this field of research is still limited and in want of more investigation.

As emerged in Cook et al.’s²⁷ meta-analysis, the majority of extant literature on traditional bullying has emphasized individual-level predictors (i.e., gender, externalizing behaviors, internalizing behaviors, social competence, self-related cognitions, other-related cognitions, academic performance, and personality traits) rather than contextual

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factors (i.e., family environment, school climate, community factors, peer social standing, and influence). As for the role of peer social standing, studies have suggested that although bullies often have higher social prestige than victims, the same individuals are often not well liked and are rejected by many peers. Being perceived as powerful or popular and being disliked by many classmates do not necessarily contradict each other, as the first construct reflects the social visibility and impact of children in their peer group.^{10,28–30} Specifically, De Bruyn et al.³¹ found that bullying was positively associated with popularity, and this association was stronger for adolescents with lower levels of acceptance, and stronger for boys than for girls.

In summary, there is a timely debate as to whether bullying behavior is a result of group processes or individual differences, indicating that more research is needed in this area, especially in examining the unique and combined effects of factors at individual and peer group level. According to a social-ecological perspective,^{32,33} bullying is a complex social phenomenon that results from the interplay between intra- and interindividual variables: individual characteristics that are related to bullying are jointly influenced by a variety of ecological systems, including relationships with peers. Although there is wide consensus on this perspective, few studies have addressed these multivariate influences in traditional bullying,^{27,34} and, as far as we know, no study has investigated it in cyberbullying. We adopted current developmental approach to deviancy^{35,36} when we considered cyberbullying in the dynamic relationship between individuals and their contexts, as one of many adaptational processes between children and life experiences that maximize or minimize innate individual potential. The present study will address this issue by testing the independent and combined effects of individual (i.e., emotion-related personality traits) and social-level factors (i.e., social preference, perceived popularity) on cyberbullying behaviors in preadolescents, while controlling for cyber victimization. A key advance of the present study will be to conceptualize social-level factors in terms of both social preference (or likability, i.e., how well liked a child is among peers) and perceived popularity (i.e., an index of social reputation, impact, and visibility). In line with Cook et al.,²⁷ we believe that an in-depth comprehension of group effects on (cyber)bullying can only be addressed if these peer ecology predictors are distinguished and measured precisely. Moreover, we paid attention to potential gender effects: gender differences have been found in (cyber)bullying,^{29,37} emotion-related interpersonal style,^{38,39} and the relation between bullying behavior and children's peer influence processes.^{10,30,40}

Based on previous literature and considering that technological devices might appeal more to boys than girls,¹³ we could expect that cyberbullying is more prevalent among males and shows different correlates across the sexes.³⁷ In addition, based on research positing that bullying is a male means to establish dominance,^{9,10,31} we hypothesized that group influences could be more salient for males. Moreover, assuming that cyberbullying, as well as traditional bullying, is driven by status goals,³¹ we expected that an individual attitude (i.e., the presence of high levels of callousness or uncaring traits) to cyberbullying others would be maximized

when low levels of perceived popularity rather than social preference were experienced.

Method

Participants and procedures

A total of 529 preadolescents (247 boys, 46.69%) recruited from an Italian middle school located in Tuscany (central Italy) took part in the study. They were aged between 10 years and 6 months and 15 years and 0 months ($M = 12$ years and 7 months; $SD = 1$ year and 2 months), and were equally distributed in grade 6 ($n = 272$, 51.42%; $M = 11$ years and 8 months; $SD = 6$ months) and grade 8 ($n = 257$, 48.58%; $M = 13$ years and 8 months, $SD = 6$ months). Our sample was primarily made up of Italian children (91.12%). Nearly half of the fathers (48.39%) and more than half of the mothers (55.96%) had achieved a high school diploma or university degree. The sample matches representative data regarding foreign students (MIUR-Fondazione ISMU, 2013) and the educational level of Italian adults (OECD, 2013).^{41,42} The school board approved all the procedures, then parental written informed consent was obtained. Students' participation was voluntary, and no incentives were given. The questionnaires were administered in a counterbalanced order across the classes by trained assistants who ensured anonymity of the answers. The data presented in this study were obtained within a larger research program on bullying, emotion abilities, and social adjustment.

Measures

Cyberbullying behaviors. A 10-item self-report questionnaire was used to assess children's involvement in cyberbullying.^{43,44} Students were asked whether they had cyberbullied others with regard to any of the following types of behavior during the previous 2 or 3 months: (a) nasty text messages, (b) phone pictures/photos/video of violent scenes, (c) phone pictures/photos/video of intimate scenes, (d) silent/prank phone calls, (e) nasty or rude e-mails, (f) insults on Web sites, (g) insults in instant messaging, (h) insults in chatrooms, (i) insults on blogs, (j) unpleasant pictures/photos on Web sites. Before handing out the questionnaire, the definition of cyberbullying was explained by trained assistants and widely discussed with the students in order to share the same definition of the construct.⁴⁴ The students used a 5-point Likert-type scale: never, only once or twice, two or three times a month, about once a week, and several times a week. A similar section investigated involvement in cyber victimization. For each measure, a mean score was calculated. Menesini et al.⁴⁴ provided evidence for a mono-factorial structure in both measures. The Cronbach's alphas in the present study were 0.73 for the cyberbullying scale and 0.81 for the cyber victimization scale. One item—(d)—was removed in both measures in order to improve the reliability of the scale. The correlations between cyberbullying and cyber victimization were $\rho = 0.44$ ($p < 0.001$) in girls and $\rho = 0.40$ ($p < 0.001$) in boys.

Emotion-related personality traits. Individual differences in children's emotional traits were assessed using two dimensions of the Inventory of Callous-Unemotional Traits (ICU⁴⁵; Italian version by Ciucci et al.²⁶). The students were

asked to indicate how much they agreed with every item, using a 4-point Likert-type scale, from 0 = “not at all true” to 3 = “definitely true.” The callousness dimension (9 items; e.g., “the feelings of others are unimportant to me”) captured a lack of empathy and remorse for misdeeds. The uncaring dimension (8 items; e.g., “I try not to hurt others’ feelings”—reverse coded) captured an uncaring attitude toward task performances and others’ feelings. The Cronbach’s alphas in the present study were 0.61 for callousness and 0.70 for uncaring.

Peer social standing. Social preference and perceived popularity were inspected through the use of four sociometric questions.⁴⁶ The children were asked to name up to six classroom peers who were liked most (“Which children in your class do you like the most?”), liked least (“Which children in your class do you like the least?”), most popular (“Which children in your class are the most popular?”), and least popular (“Which children in your class are the least popular?”). The four raw scores were standardized within the classes to a mean of 0 and standard deviation of 1. A continuous measure of social preference was computed by subtracting the standardized number of “liked least” nominations received from the standardized number of “liked most” nominations. This new measure was again standardized to a mean of 0 and standard deviation of 1 within the classes. A continuous measure of perceived popularity was similarly created using the “most popular” and “least popular” nominations.

Data analysis

First, we inspected skewness and kurtosis for all study variables. Then we explored gender and grade differences on cyberbullying, in order to verify whether they could affect subsequent analyses. The main analyses involved a series of binary logistic regression analyses parted by gender to examine the main and interactive effects of trait-emotional variables (i.e., callousness and uncaring) and peer social standing (i.e., social preference and perceived popularity) in the prediction of cyberbullying behaviors, while controlling for possible grade effects. Continuous predictors were standardized. Grade, cyber victimization, social preference, and perceived popularity were entered in step 1 (in so doing, we paid particular attention to accounting for the part of cyberbullying variance explained by cyber victimization). Callousness and uncaring were entered in step 2. Two two-way interactions for social preference with callousness and uncaring were entered in step 3. Step 3 was then repeated by replacing social preference with perceived popularity in the

interaction terms. When the results indicated significant interactions, the form of the interaction was explored using the post hoc probing procedures recommended by Holmbeck.⁴⁷

Results

Descriptive statistics are reported in Table 1. Skewness and kurtosis values for cyberbullying and cyber victimization proved to be out of range [−1; +1], indicating that these measures were not normally distributed.

Gender and grade differences for cyberbullying were tested using the non-parametric Mann–Whitney *U* test due to its non-normal distribution. The males presented higher scores on the cyberbullying scale than girls (mean rank in boys: 278.27; mean rank in girls: 253.38; $U=38103.500$, $p<0.01$), and students enrolled in grade 8 presented higher scores on the cyberbullying scale than grade 6 (mean rank in grade 6: 243.19; mean rank in grade 8: 288.08, $U=40884.500$, $p<0.001$). Considering this evidence, and according to the gender differences on emotional correlates of bullying behaviors,^{38,39} we decided to perform the main analyses parted by gender. Moreover, we accounted for the possible grade effects by inserting grade within regression models.

Due to their non-normal distribution, cyberbullying and cyber victimization were dummy coded—students involved (1) or not involved (0) in the phenomena. Based on previous literature,⁴⁴ and in view of the current debate as to whether the repetition of aggressive acts is as important as in traditional bullying,⁴⁸ we considered children who declared to have acted *only once or twice* in at least one of the items making up the scale as involved in cyberbullying behaviors. We did the same for cyber victimization. As for cyberbullying, the new dichotomized variable indicated that 54 out of 247 boys (21.86%) and 38 out of 282 girls (13.48%) belonged to the involved group. Considering cyber victimization, 54 out of 247 boys (21.86%) and 76 out of 282 girls (26.95%) constituted the involved group. The girls’ results are reported in Table 2. The coefficient *B* of logistic regression can be interpreted as the change in the logarithm of the likelihood ratio due to the change of one unit in the independent variable score, or, if the independent variable is dummy, it can be seen as the change in the logarithm of the likelihood ratio when it passes from one category to another. An easier interpretation can be made by percentage variation: $\Delta\% = 100 \times [\exp(B) - 1]$. For example, if $\exp(B)$ is 0.5, $\Delta\%$ would be $100 \times [0.5 - 1] = -50\%$, and it would imply that when the independent variable increases by one point, the likelihood of being in the reference category would decrease by 50%.

TABLE 1. DESCRIPTIVE STATISTICS OF THE STUDY VARIABLES

	M (SD)	Skewness	Kurtosis	Possible range	Observed range
1. Cyberbullying	1.05 (0.16)	6.12	52.47	1.00–5.00	1.00–3.00
2. Cyber victimization	1.09 (0.22)	5.86	50.34	1.00–5.00	1.00–3.78
3. Callousness	0.53 (0.40)	0.98	0.63	0.00–3.00	0.00–2.11
4. Uncaring	0.75 (0.47)	0.78	0.99	0.00–3.00	0.00–3.00
5. Social preference	0.00 (1.00)	−0.77	0.95	—	−3.57–2.16
6. Perceived popularity	0.00 (1.00)	−0.23	1.44	—	−3.69–3.41

TABLE 2. BINARY LOGISTIC REGRESSIONS ON CYBERBULLYING BEHAVIORS FOR GIRLS

		B	exp(B)
<i>Step 1</i>			
Step $\chi^2=54.66^{***}$; $df=4$; Nagelkerke $\Delta R^2=0.32$	Grade	0.86*	2.36
Model $\chi^2=54.66^{***}$; $df=4$; Nagelkerke $R^2=0.32$	Cyber victimization	2.36***	10.59
	Callousness	-0.22	0.80
	Uncaring	0.57*	1.77
<i>Step 2</i>			
Step $\chi^2=3.62$; $df=2$; Nagelkerke $\Delta R^2=0.02$	Grade	0.88*	2.42
Model $\chi^2=58.28^{***}$; $df=6$; Nagelkerke $R^2=0.34$	Cyber victimization	2.31***	10.08
	Callousness	-0.22	0.81
	Uncaring	0.61**	1.84
	Social preference	0.01	1.01
	Perceived popularity	0.36	1.44
<i>Step 3a</i>			
Step $\chi^2=2.75$; $df=2$; Nagelkerke $\Delta R^2=0.02$	Callousness \times Social preference	-0.29	0.75
Model $\chi^2=61.03^{***}$; $df=8$; Nagelkerke $R^2=0.36$	Uncaring \times Social preference	-0.11	0.89
<i>Step 3b</i>			
Step $\chi^2=1.12$; $df=2$; Nagelkerke $\Delta R^2=0.01$	Callousness \times Perceived popularity	-0.27	0.77
Model $\chi^2=59.39^{***}$; $df=8$; Nagelkerke $R^2=0.35$	Uncaring \times Perceived popularity	0.06	1.06

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Peer social standing did not seem to be relevant for female cyberbullying. However, an uncaring attitude toward others was positively related to cyberbullying behaviors. As the lack of care increased, the risk of being in the presence of the cyberbullying behaviors category increased ($B=0.61$, $\exp(B)=1.84$, $p < 0.01$). No two-way interactions emerged.

In boys (see Table 3), no main effects of either social relationships or traits-emotional variables emerged. Nevertheless, there was a significant two-way interaction between uncaring and perceived popularity ($B = -0.47$, $\exp(B)=0.63$, $p < 0.05$; see Fig. 1). Uncaring was positively related to the presence of cyberbullying behaviors in boys with low

levels of perceived popularity ($B=0.84$, $\exp(B)=2.32$, $p < 0.01$), but not in those with a high level of perceived popularity ($B = -0.09$, $\exp(B)=0.91$, $p=0.729$).

Discussion

The present study was developed in order to explore the impact of peer social standing (i.e., social preference and perceived popularity) on the association between trait-emotional variables (i.e., a callous and uncaring disposition toward others) and the timely phenomenon of cyberbullying. In other words, we were interested in investigating whether the peer social context could directly and/or indirectly influence

TABLE 3. BINARY LOGISTIC REGRESSIONS ON CYBERBULLYING BEHAVIORS FOR BOYS

		B	exp(B)
<i>Step 1</i>			
Step $\chi^2=51.36^{***}$; $df=4$; Nagelkerke $\Delta R^2=0.29$	Grade	1.28***	3.60
Model $\chi^2=51.36^{***}$; $df=4$; Nagelkerke $R^2=0.29$	Cyber victimization	1.56***	4.75
	Callousness	0.27	1.30
	Uncaring	0.31	1.37
<i>Step 2</i>			
Step $\chi^2=3.11^*$; $df=2$; Nagelkerke $\Delta R^2=0.02$	Grade	1.30***	3.66
Model $\chi^2=54.47^{***}$; $df=6$; Nagelkerke $R^2=0.31$	Cyber victimization	1.54***	4.66
	Callousness	0.26	1.30
	Uncaring	0.35	1.41
	Social preference	-0.01	0.99
	Perceived popularity	0.32	1.38
<i>Step 3a</i>			
Step $\chi^2=0.62$; $df=2$; Nagelkerke $\Delta R^2=0.00$	Callousness \times Social preference	0.10	1.11
Model $\chi^2=55.09^{***}$; $df=8$; Nagelkerke $R^2=0.31$	Uncaring \times Social preference	-0.17	0.85
<i>Step 3b</i>			
Step $\chi^2=6.00^*$; $df=2$; Nagelkerke $\Delta R^2=0.03$	Callousness \times Perceived popularity	0.29	1.34
Model $\chi^2=60.47^{***}$; $df=8$; Nagelkerke $R^2=0.34$	Uncaring \times Perceived popularity	-0.47*	0.63

* $p < 0.05$; *** $p < 0.001$.

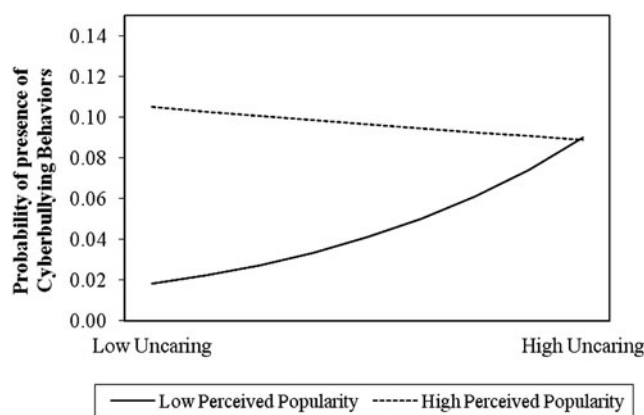


FIG. 1. The two-way interaction between uncaring and perceived popularity in boys. Uncaring interacted with perceived popularity in predicting the presence of cyberbullying behaviors for boys with low perceived popularity, but not for boys with high perceived popularity.

this new form of aggression. In so doing, we paid particular attention to taking into account the role played by victimization. It is not uncommon to be simultaneously involved in bullying and victimization, as largely proven by the literature³⁴ and our data. Moreover, we investigated social relationships via peer nominations, and this was particularly important for showing that our results were not solely due to shared method variance across self-report measures. Importantly, we chose to investigate this relation within middle school students ranging from end of childhood to incoming adolescence. The research indicates that status enhancement is an age-related goal because it becomes a priority in early adolescence,⁴⁹ above all during the transition from primary to secondary school because of the importance of “fitting in” in the new peer context.^{34,50,51} An increase in bullying behavior during this period could be helpful to obtain or maintain a dominant position in the peer group.^{46,52}

First, in line with our hypotheses, cyberbullying was more prevalent among males³⁷ and showed gender-specific associations with the study variables. Specifically, in girls, an uncaring disposition was associated with involvement in cyberbullying behaviors over and above grade, involvement in cyber victimization, callousness, and the two peer social standing variables. This evidence is in line with studies on traditional bullying and callous-unemotional traits,^{22,53} and it is consistent with the developmental model on the female pathway to antisocial behavior in adolescence. According to this model, biological and psychosocial changes associated with puberty (e.g., hormonal changes, less parental monitoring, greater contact with deviant peers) would foster in girls the association between individual vulnerabilities (i.e., uncaring disposition toward others) and antisocial behavior (i.e., cyberbullying) during incoming adolescence.⁵⁴ Moreover, this effect was not influenced by interaction terms with social preference or perceived popularity. In other words, peer social context did not seem to be relevant for involvement in female cyberbullying behavior. Rather, an emotion-related trait would directly predict this form of maladaptive behavior.

Second, in line with our hypothesis, we found an interaction effect between uncaring disposition and perceived

popularity in predicting male cyberbullying behaviors. Boys with a higher level of uncaring attitude were more likely to be involved in cyberbullying behaviors when they also showed a lower level of social visibility and prestige within the peer group. Specifically, an individual risk factor such as uncaring disposition was maximized within disadvantaged social circumstances in line with the ecological model outlined by Sameroff.³⁶ In other words, peer social standing seems to be the element that “triggers” the association between individual emotion-related personality traits and cyberbullying. Why is this process in action for boys but not for girls? A possible explanation for this difference is that when children are approaching adolescence, striving for social status seems more important for males rather than girls.¹⁰ This could be due to the different process of peer socialization. Girls are more likely to be involved in dyadic relationships (e.g., romantic relationships or close friendships); boys are more prone to establish visibility and influence within the broader peer group.⁵⁵

We are aware that this study is affected by several limitations. First, as outlined above, the cross-sectional nature of our study did not allow the investigation of causal relationships, and only future longitudinal research will be able to confirm our results. Moreover, our results came from a sample of middle school students in Italy, and generalization to other countries and cultures has to be tested. Further, the Cronbach’s alpha value for the callousness scale appeared quite low and potentially could have misled results. However, it exceeded the threshold of sufficiency (0.60) and proved to be consistent with past research on callous-unemotional traits.^{56–58} Nevertheless, the present study provided a relevant step forward in the debate about the role of individual and social-level factors in cyberbullying. Our study shows that the interplay between group processes and individual differences is mediated by gender, highlighting that the nature of male cyberbullying appears to be context dependent, while female cyberbullying would mainly seem related to trait-like characteristics. These results suggest that anti(cyber)bullying programs and interventions focused on peer context will be more effective on boys dealing with the transition from childhood to adolescence, while interventions dealing with individual differences such as emotion-related personality traits (e.g., callous-unemotional traits) are more appropriate for girls. To conclude, school researchers and practitioners should jointly consider dealing with both levels of factors for male and female cyberbullying. We agree with Cook et al.²⁷ in stressing that the most effective programs have to intervene at the levels of the individual, peer ecology, and the broader contexts in which the children are involved.

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No competing financial interests exist.

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