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Cyberbullying by mobile phone among adolescents: The role of gender and peer group status

Abstract: This article presents the results of a study in Flanders (Belgium) ($N = 264$) on the relationship between adolescents' peer group status, their gender and their involvement in different types of mobile phone cyberbullying. By means of a (within-classroom) free nominations procedure, likeability and perceived popularity scores were calculated for each respondent. Based on these scores, four groups were identified: popular controversial, popular liked, average and rejected adolescents. Even after controlling for age, gender, the frequency of voice calling and the frequency of text messaging, popular controversial adolescents were significantly more likely to make or send threatening/insulting voice calls or text messages. They also gossiped significantly more frequently by means of voice calls or text messages. No relationship was found between peer group status and making hurtful pictures or videos. A significant interaction effect with gender was found for mobile phone gossiping: Popular controversial girls were more involved in gossiping than popular controversial boys.

Keywords: mobile phone, cyberbullying, adolescents, perceived popularity, peer group status

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1 Introduction

Lacking the material rewards of the adult status system, the adolescent status system dispenses its own 'rewards and punishments' to its members. One of these rewards is popularity, which can be described as "membership of the leading crowd" (Coleman, 1961, p. 43). Although popularity is an attribute that you cannot give yourself but which is given to you by your environment, there is a behavioral basis for popularity (Asher and McDonald, 2009; Hawley, 1999).

Behaviors that are believed to contribute to one's peer group status can be categorized as behaviors enhancing social prominence (or visibility) or social dominance (power and influence) in the peer group (Closson, 2009; LaFontana and Cillessen, 2002; Lease, Musgrove and Axelrod, 2002). With respect to social prominence, for example, popular adolescents are considered to be leaders, athletic, physically attractive and fashionable/snobby (Allen, Porter, McFarland, Marsh, and McElhaney, 2005; Closson, 2009; Coie, Dodge, and Coppotelli, 1982; de Bruyn and van den Boom, 2005; LaFontana and Cillessen, 2002; Parkhurst and Hopmeyer, 1998). With respect to social dominance, two subtypes of popular adolescents are discerned. While some popular adolescents are associated with prosocial behaviors, others are (also) associated with antisocial, coercive behaviors towards their peers, such as bullying (Ahn, Garandeau, and Rodkin, 2010; Andreou, 2006; Caravita, Pöyhönen, Rajala, and Salmivalli, 2011). This latter group of popular 'tough boys' and 'mean girls' is the social peer group that Coie, Dodge, and Coppotelli (1982) call "controversial" popular adolescents: although generally perceived as popular, they score high on being liked as well as on being disliked when their peers are asked to nominate classmates in one of these categories. From an ethological point of view, popular controversial adolescents are believed to strategically use both prosocial and coercive behaviors in order to maintain (or achieve) social dominance in the peer group (Hawley, 1999, 2003; Pellegrini, 2002). Therefore, bullying can be considered a strategy of popular controversial adolescents to maintain their high status position in the peer group.

While the relationship between traditional bullying and controversial popularity has been well established (e.g., Andreou, 2006; Hoff, Reese-Weber, Schneider, and Stagg, 2009), little is known about the relationship between cyberbullying and adolescents' peer group status. Given the large overlap between traditional bullying and cyberbullying (e.g., Vandebosch and van Cleemput, 2009), however, it is likely that we might find a similar relationship between controversial popularity and cyberbullying (H1).

1.1 Different modes of mobile phone cyberbullying and the moderating role of gender

Cyberbullying can be defined 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" (Smith et al., 2008, p. 376, italic in original). In the literature, two "modes of attack" are distinguished (Stassen Berger, 2007, p. 95): direct forms of cyberbullying in

which the victim is directly involved (such as insulting a victim in a text message or phone call, sending obscene pictures or making (unwanted) pictures or videos of the victim), and indirect or ‘relational’ forms of cyberbullying, in which the victim is not immediately involved in the bullying, but the bullied person can become aware of what is going on by the notifications of others (‘behind the back’). Indirect cyberbullying consists, for example, of spreading entrusted information or false rumors to others or gossiping about a victim.

In this study we conceive of three forms of mobile phone bullying. The first concerns an indirect form, namely (1) gossiping about someone via voice calls or text messages. The second and third forms concern direct forms of bullying: (2) the use of voice calls or text messages to insult, threaten, intentionally hurt or bully someone, and (3) the making a picture or video of someone with the intent to ridicule or hurt that person. We chose to separate making hurtful voice calls/text messages from making hurtful pictures/videos in our analyses as the latter practice draws on a different set of affordances (namely the phone’s capacity to produce, and distribute, multimedia materials), and may relate differently to characteristics of the perpetrator.

Although not always consistent, the results of both (cyber-)bullying and popularity research suggest a tendency for boys to involve more in overt, direct forms of aggression and for girls to involve more in indirect, relational forms of aggression (Andreou, 2006; Crick and Grotpeker, 1995; Griffin and Gross, 2004; Stassen Berger, 2007; Vandebosch and van Cleemput, 2009). This gender difference may be explained by referring to the differing social goals of boys and girls.¹ While boys’ social goals appear to revolve more around instrumentality and physical dominance, girls’ social goals appear to revolve more around relational issues (Jarvinen and Nicholls, 1996); consequently, a boy’s position in the peer group may be damaged the most when he is physically dominated, while a girl’s position is damaged the most when she is excluded or when strain is placed on her interpersonal relationships (Espelage and Swearer, 2010). If we apply this theory to mobile phone cyberbullying, we expect to find that girls with a popular controversial peer group status will engage significantly more frequently in indirect (relational) mobile phone bullying (H2), and that boys with a popular controversial peer group status will engage significantly more frequently in direct mobile phone bullying (H3).

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¹ It should be noted, however, that empirical results on the social goal orientations of boys and girls have sometimes been found to be in conflict with this assumption (e.g., Steinberg and Silverberg, 1986), thereby cautioning for a too essentialist view on this gender difference.

2 Method

2.1 Sample, procedure and measures

Data were gathered by administering written questionnaires among 264 adolescents in the classrooms of 11 high schools (9th to 12th grade) in Flanders (Belgium). Our sample consisted of 45 % males and 55 % females with an average age of 16.1 years ($SD = 1.3$). All respondents had their own mobile phone. Using a free nominations procedure, likeability and perceived popularity were assessed by asking students to nominate three classmates that they liked most and liked least, and that they perceived as most and least popular. These scores were standardized within each class group. By subtracting the 'least'-scores from the 'most'-scores, we calculated a standardized social preference (SP) and perceived popularity (PP) score for each adolescent (see Coie et al., 1982; Parkhurst and Hopmeyer, 1998 for a detailed procedure). Next, based on the social preference and perceived popularity scores, each adolescent was assigned to one of the following groups: popular controversials ($N = 15$, $PP > .5$ & $SP < 0$), popular likeables ($N = 54$, $PP > .5$ & $SP > 0$), rejects ($N = 41$, $PP < -.5$ & $SP < -.5$) and averages ($N = 154$, all others). These four groups did not differ in terms of their average age ($F(3,261) = .18$, $p = .15$) or gender ($\chi^2(3) = .74$, $p = .87$).

Mobile phone cyberbullying was measured by asking how frequently in the past two months the respondent had insulted, threatened, intentionally hurt or bullied someone in a voice call (item 1) or in a text message (item 2), how frequently in the past two months the respondent had gossiped about someone in a voice call (item 3) or in a text message (item 4), and how frequently they had shot a picture or video of someone with the intent to ridicule or hurt that person (item 5). Answers ranged from never (1) to (almost) daily (4). For further analysis we calculated mean scores for the items measuring direct bullying (items 1, 2; $\alpha = .60$) and the items measuring indirect or relational bullying (items 3, 4; $\alpha = .63$).

Three ANCOVA's (general linear models) were carried out with gender and peer group status as fixed factors and direct bullying, indirect bullying and picture/video bullying as dependent variables. Age, the frequency of text messaging and the frequency of voice calling were included as control variables.

3 Results

3.1 Descriptions

On average, the adolescents in our sample reported sending 34.67 text messages per day ($SD = 53.50$) and making 3.36 calls per week ($SD = 5.50$). No gender difference could be found with respect to the frequency of texting ($t(264.47) = -.36, p = .72$) or calling ($t(263) = .275, p = .78$). Also, no difference was found between the different types of adolescents and the number of weekly calls they made ($F(3, 261) = .38, p = .77$). We did find a difference in the texting behavior of different types of adolescents, however ($F(3, 261) = 5.39, p < .01$): liked popular teens reported sending significantly more text messages per day ($M = 55.84, SD = 75.99$) than average ($M = 29.57, SD = 45.99$) or rejected ($M = 18.88, SD = 13.33$) adolescents. Controversial popular adolescents ($M = 53.38, SD = 55.64$), however, did not differ from liked popular adolescents, nor from averages and rejected peers.

The most prevalent type of mobile phone bullying was gossiping through SMS, which was reported by 40 per cent of the respondents, followed by gossiping via voice calls (19.8%) and threatening, insulting or bullying someone via SMS (11%). Except for gossiping, all other forms of mobile phone bullying occurred once or twice a month at the most. With respect to gossiping via SMS, 31.6% of adolescents reported doing this once or twice a month, 8% on a weekly basis and 0.8% daily. Likewise, 15.6% of the respondents gossiped via voice calls once or twice a month, 3.8% on a weekly basis and 0.8% daily. When comparing the percentage of adolescents who reported never having bullied over the past two months to those who reported bullying once or more during this period, our data show that significant differences can be found both between boys and girls and between controversial popular and other adolescents (see Table 1).

Gender		Direct bullying voice call	Direct bullying SMS	Gossiping voice call	Gossiping SMS	Picture/video
Male	N (%)	8 (6.7 %)	17 (14.2 %)	14 (11.7 %)	36 (30.0 %)	5 (4.1 %)
Female	N (%)	2 (1.4 %)	12 (8.3 %)	38 (26.6 %)	69 (48.3 %)	0 (0.0 %)
	$\chi^2 (1) =$	4.95*	2.28	9.14**	9.06**	6.12**
Peer group status						
Controversial popular	N (%)	2 (13.3 %)	7 (46.7 %)	8 (53.3 %)	8 (53.3 %)	1 (6.7 %)
Liked popular	N (%)	2 (3.7 %)	6 (11.1 %)	7 (13.2 %)	25 (46.3 %)	1 (1.9 %)
Average	N (%)	6 (3.9 %)	14 (9.1 %)	35 (22.7 %)	63 (41.2 %)	1 (.6 %)
Rejected	N (%)	0 (0.0 %)	2 (4.9 %)	2 (4.9 %)	9 (22.0 %)	2 (4.9 %)
	$\chi^2 (3) =$	5.31	21.66***	18.67***	7.66*	5.09
Total	N (%)	10 (3.8 %)	29 (11.0 %)	52 (19.8 %)	105 (39.9 %)	5 (1.9 %)

Table 1: Percentage of adolescents involved in different types of mobile phone cyberbullying at least once during the past two months.

* $p < .05$, ** $p < .01$, *** $p < .001$

3.2 Test of Hypotheses

Three ANCOVA's were carried out to examine the effects of peer group status and gender on direct bullying, gossiping and the making of hurtful pictures/videos. With respect to our control variables, neither age nor the frequency of voice calling predicted mobile phone cyberbullying (see Table 2). Text messaging, however, positively predicted both direct mobile phone bullying ($\beta = .001$, $t = 2.29$, $p < .05$) and gossiping ($\beta = .001$, $t = 2.08$, $p < .05$). A main effect for gender was found for each type of bullying: boys reported they engaged in direct bullying and in making hurtful pictures/videos significantly more frequently than girls, while girls reported gossiping significantly more frequently (see Tables 2 and 3).

Our first hypothesis stated that adolescents with a controversial popular peer group status would be more likely to engage in mobile phone cyberbullying than their peers. A main effect of peer group status was found both for direct bullying and gossiping: controversial popular adolescents engaged in these practices significantly more frequently than their peers over the past two months. No effect was found for making hurtful pictures or videos, however (H1 partially supported).

Our second and third hypotheses argued that we would find interaction effects between gender and peer group status. We found no support for such an effect for direct bullying (H3 not supported). Controversial popular girls, on the other hand, were significantly more likely to have engaged in gossiping than their male counterparts (H2 supported).

Between subjects-ANOVA	df	Direct bullying F	Gossiping F	Video/ photograph F
Corrected model	10	3.56***	5.88***	1.85
Intercept	1	49.61***	26.07***	109.48***
Gender	1	6.76**	13.36***	11.29**
Age	1	1.34	2.57	1.53
Frequency voice calls	1	.16	.71	.81
Frequency text messaging	1	5.26*	4.32*	.02
Peer group status	3	6.56***	7.27***	1.94
Gender*peer group status	3	.96	3.70*	1.94
R^2		.13 (adjusted: .09)	.19 (adjusted: .16)	.07 (adjusted: .03)

Table 2: Test of between-subject effects (ANCOVA).

* $p < .05$, ** $p < .01$, *** $p < .001$

M (SE)	Direct bullying			Gossiping			Video/photograph		
	Boys	Girls	Total (status)	Boys	Girls	Total (status)	Boys	Girls	Total (status)
Controversial popular	1.44 (.09)	1.22 (.08)	1.33 ^a (.06)	1.40 (.18)	2.32 (.17)	1.86 ^a (.13)	1.15 (.05)	1.00 (.05)	1.08 (.04)
Liked popular	1.13 (.05)	1.02 (.04)	1.08 ^b (.03)	1.37 (.10)	1.38 (.09)	1.38 ^b (.07)	1.04 (.03)	1.00 (.03)	1.02 (.02)
Average	1.11 (.03)	1.04 (.03)	1.07 ^b (.03)	1.26 (.06)	1.47 (.05)	1.36 ^b (.04)	1.02 (.02)	1.00 (.02)	1.01 (.01)
Rejected	1.04 (.05)	1.03 (.05)	1.03 ^b (.04)	1.13 (.11)	1.22 (.11)	1.18 ^c (.08)	1.10 (.03)	1.00 (.03)	1.05 (.02)
Total (gender)	1.18 ^a (.03)	1.08 ^b (.03)		1.29 ^a (.06)	1.60 ^b (.06)		1.08 ^a (.02)	1.00 ^b (.02)	

Table 3: Means, standard errors and pairwise differences ANCOVA.

Note. Differences in horizontal (resp. vertical) superscripts indicate significant pairwise differences when the control variables appearing in the model are evaluated at the following values: age = 16.06, freq. text messaging = 34.58, freq. voice calls = 3.32.

4 Conclusion and discussion

Despite the extant literature on the relation between controversial popularity and ‘offline’ forms of bullying behavior, in cyberbullying research the role of adolescents’ peer group status has largely been neglected. This study contributes to the literature by revealing that controversial popular adolescents’ bullying behavior does not only include ‘offline’ bullying but also mobile phone cyberbullying. Hence, like traditional bullying, mobile phone cyberbullying can be identified as a coercive strategy that controversial popular adolescents engage in to increase their dominant position.

Our hypothesis that controversial popular girls engage in gossiping more frequently was supported, thereby confirming the greater tendency among girls to cause their victims reputational damage by engaging in relational bullying. The current study did not, however, ask about cyberbullying on the internet nor about other forms of relational bullying such as ostracizing or ‘outing’ personal information about the victim (e.g., distributing sexting imagery). Our findings give reason to assume that similar results may be found for these types of bullying.

Although controversial popular boys were somewhat more likely than controversial girls to engage in activities such as threatening or insulting someone by means of a voice call or SMS, the difference was not large enough to indicate a significant interaction effect between gender and peer group status. This may suggest that controversial popular girls are as attracted to this form of direct mobile phone bullying (which still does not involve physical aggression) as controversial popular boys.

The lack of an effect may also be the result of the limitations of our study. First, our sample was relatively small. Second, we assessed likeability and perceived popularity within distinct class groups, while popularity typically occurs at the level of the peer ‘crowd’ (Cillessen and Rose, 2005). Hence, the specificity of the likeability and perceived popularity scores that we obtained may be lacking. Third, although precautionary steps were taken to ensure respondents of the confidential treatment of their answers, the results obtained from this study may still have been affected by a social desirability-bias: aware of the fact that cyberbullying is frowned upon, respondents may have adjusted their answers. Hence, the findings reported in this study may underreport the actual cyberbullying incidence. Finally, questions may be raised with regard to how we operationalized mobile phone cyberbullying in our study. First of all we used few items to measure mobile phone cyberbullying. Second, although we introduced this section in the questionnaire with a heading indicating that the following questions concerned cyberbullying, it is possible that some respondents in our

study did not interpret the questions as ‘bullying’ but rather as ‘teasing’ or ‘normal’ gossiping. Therefore, it may be more accurate to speak of coercive strategies through mobile phone use rather than of cyberbullying. Third, as mentioned above, we differentiated between making hurtful pictures/videos from making hurtful voice calls/text messages, but this distinction may have been unclear to the respondents when filling out the questionnaire. Despite this and other limitations, our study is among the first to present findings suggesting that adolescents use their mobile phones strategically in order to increase their dominance and thereby enhance their status in the peer group.

Several avenues for future research remain, such as, why controversial popular adolescents resort to these kinds of strategies. Previous research has shown that controversial popular pupils perform poorly in school (Coie et al., 1982). Hence, their attempts to achieve high status positions in the peer group may be compensatory reactions to school failure (Coleman, 1961; Davies, 1999; Roe, 1995; Stinchcombe, 1964). Future research into this (and other) underlying factor (s) is likely to offer a better insight into why adolescents engage in (cyber-)bullying, which might result in the development of new policies and strategies to battle this problematic behavior.

Bionotes

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References

- Ahn, H., Garandeau, C. F., & Rodkin, P. C. 2010. Effects of classroom embeddedness and density on the social status of aggressive and victimized children. *The Journal of Early Adolescence* 30, 76–101.
- Allen, J. P., Porter, M. R., McFarland, F. C., Marsh, P., & McElhaney, K. B. 2005. The two faces of adolescents’ success with peers: Adolescent popularity, social adaptation, and deviant behavior. *Child Development* 76(3), 747–760.
- Andreou, E. 2006. Social preference, perceived popularity and social intelligence relations to overt and relational aggression. *School Psychology International* 27(3), 339–351.

- Asher, S. R., & McDonald, K. L. 2009. The behavioral basis of acceptance, rejection and perceived popularity. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 232–248). New York: The Guilford Press.
- Caravita, S. C. S., Pöyhönen, V., Rajala, I., & Salmivalli, C. 2011. The architecture of high status among Finnish youth. *British Journal of Developmental Psychology* 29, 668–697.
- Cillessen, A. H. N. & Rose, A. J. 2005. Understanding popularity in the peer system. *Current Directions in Psychological Science* 14(2), 102–105.
- Closson, L. M. 2009. Aggressive and prosocial behaviors within early adolescent friendship cliques: What's status got to do with it? *Merrill-Palmer-Quarterly* 55(4), 406–435.
- Coie, J. D. Dodge, K. A., & Coppotelli, H. 1982. Dimensions and types of social status: A cross-age perspective. *Developmental Psychology* 18, 557–569.
- Coleman J. 1961. *The adolescent society*. New York: Free Press.
- Crick, N. R. & Grotpeter, J. K. 1995. Relational aggression, gender, and social-psychological adjustment. *Child Development* 66(3), 710–722.
- Davies, S. 1999. Subcultural explanations and interpretations of school deviance. *Aggression and Violent Behavior* 4(2), 191–202.
- de Bruyn, E. H. & van den Boom, D. C. 2005. Interpersonal behavior, peer popularity, and self-esteem in early adolescence. *Social Development* 14(4), 555–573.
- Espelage, D. L. & Swearer, S. M. 2010. A social-ecological model for bullying prevention and intervention: Understanding the impact of adults in the social ecology of youngsters. In S. R. Jimerson, S. M. Swearer, & D. L. Espelage (Eds.), *Handbook of bullying in schools: An international perspective* (pp. 61–72). New York: Routledge.
- Griffin, R. S., & Gross, A. M. 2004. Childhood bullying: Current empirical findings and future directions for research. *Aggression and violent behaviour* 9(4), 379–400.
- Howley P. H. 1999. The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review* 19, 97–132.
- Howley, P. H. 2003. Prosocial and coercive configurations of resource control in early adolescence: A case for the well-adapted Machiavellian. *Merrill-Palmer Quarterly* 49(3), 279–309.
- Hoff, K. E., Reese-Weber, M., Schneider, W. J., & Stagg, J. W. 2009. The association between high status positions and aggressive behavior in early adolescence. *Journal of School Psychology* 47, 395–426.
- Jarvinen, D. W. & Nicholls, J. G. 1996. Adolescents' social goals, beliefs about the causes of social success, and satisfaction in peer relations. *Developmental Psychology* 32(3), 435–441.
- LaFontana, K. M. & Cillessen, A. H. N. 2002. Children's perceptions of popular and unpopular peers: A multimethod assessment. *Developmental Psychology* 38(5), 635–647.
- Lease, A. M., Musgrove, K. T., & Axelrod, J. L. 2002. Dimensions of social status in preadolescent peer groups: Likability, perceived popularity, and social dominance. *Social Development* 11(4), 508–533.
- Parkhurst, J. T. & Hopmeyer, A. 1998. Sociometric popularity and peer-perceived popularity: Two distinct dimensions of peer status. *Journal of Early Adolescence* 18, 125–144.
- Pellegrini, A. D. 2002. Affiliative and aggressive dimensions of dominance and possible functions during early adolescence. *Aggression and Violent Behavior* 7, 21–31.
- Roe, K. 1995. Adolescents' use of socially disvalued media: Towards a theory of media delinquency. *Journal of Youth and Adolescence* 24(5), 617–631.

- Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippet, N. 2008. Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry* 2008 49(4), 376–385.
- Stassen Berger, K. 2007. Update on bullying at school: Science forgotten? *Developmental review* 27(1), 90–126.
- Steinberg, L. & Silverberg, S. B. 1986. The vicissitudes of autonomy in early adolescence. *Child Development* 57(4), 841–851.
- Stinchcombe, A. 1964. *Rebellion in a high school*. Chicago: Quadrangle Books.
- Vandebosch, H. & van Cleemput, K. 2009. Cyberbullying among youngsters: Profiles of bullies and victims. *New Media & Society* 11(8), 1349–1371.