The Relation between Popularity and Aggressive, Destructive, and Norm-Breaking Behaviors: Moderating Effects of Athletic Abilities, Physical Attractiveness, and Prosociality

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Please cite as: Dijkstra, J. K., Lindenberg, S., Verhulst, F. C., Ormel, J., & Veenstra, R. (2007). The relation between popularity and aggressive, destructive, and normbreaking behaviors: Moderating effects of athletic abilities, physical attractiveness, and prosociality. *Journal of Research on Adolescence*.

The definitive version is available at www.blackwellsynergy.com.

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This research is part of the TRacking Adolescents' Individual Lives Survey (TRAILS). Participating centers of TRAILS include various Departments of the University of Groningen, the Erasmus Medical Center of Rotterdam, the Radboud University of Nijmegen, University of Utrecht, and the Trimbos Institute the Netherlands. TRAILS is financially supported by grants from the Netherlands Organization for Scientific Research (GB-MW 940-38-011, GB-MAGW 480-01-006, GB-MAGW 457-03-018, NWO 175.010.2003.005, ZonMw 100-001-001, ZonMw 60-60600-98-018), the Ministry of Justice (WODC), and by the participating centers.

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Abstract

The aim of this study was to examine the relations between popularity and different types of aggressive, destructive, and norm-breaking behaviors in a large cross-sectional sample of adolescents (N = 3312 / M age =14.02). We were interested in the extent to which the relations of these behaviors with popularity were moderated by positive features (i.e., athletic abilities, physical attractiveness, and prosociality). From a goal-framing perspective, it was argued that positive features evoke positive affect, which in turn enhances the positive impact of aggressive, destructive, and norm-breaking behaviors on popularity. The results supported our notion that these latter behaviors are especially related to popularity in adolescents who also exhibit positive features.

Key words: popularity, aggression, prosociality, adolescence

The Relation between Popularity and Aggressive, Destructive, and Norm-Breaking behaviors: Moderating Effects of Athletic Abilities, Physical Attractiveness, and Prosociality

At the onset of adolescence, a shift occurs in the factors that account for popularity among peers (Bukowski, Sippola, & Newcomb, 2000). Adolescents involved in antisocial behaviors become more attractive, while the attractiveness of adolescents characterized by behaviors such as good school performance, declines (Allen, Weissberg, & Hawkins, 1989). From a developmental perspective, it has been argued that adolescents face a discrepancy between their biological maturation and social opportunities to be fully acknowledged as adult, which can evoke deviancy, such as norm-breaking behavior through substance use and destructive behavior such as vandalism, as a means to achieve status. Adolescents who are involved in these behaviors might become role models to their peers and be considered popular because of their way of dealing with the 'maturity-gap' (Moffitt, 1993). In addition, it has been argued that physically and relationally aggressive behaviors help maintain a higher status position (Cillessen & Mayeux, 2004). These explanations of the contribution of these aggressive, destructive, and norm-breaking behaviors to popularity go a long way. However, these behaviors also have relationally negative features, such as putting people down or being callous or aggressive. Why would these negative features not offset the positive effects of being "cool" and appearing more adult? We investigated the possibility that positive features take the negative edge off aggressive, destructive, and norm-breaking behaviors. We tested the hypothesis that aggressive, destructive, and norm-breaking behaviors are more closely related to popularity if the adolescent also has positive features, such as physical

attractiveness, athletic abilities, and prosociality. There are good theoretical reasons to propose that positive features have this effect.

A goal-framing approach (Lindenberg, 2001; 2006) would suggest that goals are often triggered by prominent aspects in the immediate environment and that, once triggered, these goals govern what else people pay attention to and how they process the information. For popularity, it is not necessary that people be liked (cf. Parkhurst & Hopmeyer, 1998), but it is necessary that others want to be associated with them. In terms of goals, this means that others have an approach goal towards them. Attractive features of people in the environment create positive affect and are likely to increase the accessibility of approach rather than avoidance goals (Custers & Aarts, 2005). Thereby, they also increase the likelihood that aggressive, destructive, and norm-breaking behaviors of the person with attractive features will be interpreted in a positive way and that the dispositional attributions will be congruent with approach goals (Trafimow, Bromgard, Finlay, & Ketelaar, 2005). In short, attractive features are expected to make ambiguous aspects of potentially unattractive features look attractive.

The kind of attractive features relevant in this context, it can be argued from an evolutionary point of view, are features that represent health and reproductive success, such as physical attractiveness and athletic ability (Berry, 2000). Physical attractiveness and athletic abilities have also been identified as important correlates of popularity among adolescents (Adler & Adler, 1995; Lease, Kennedy, & Axelrod, 2002; Rodkin, Farmer, Pearl, & Van Acker, 2000). It is likely that both features also contribute to closing the maturity gap by causing a person to be more sexually attractive to other adolescents and, importantly, also to adults (Graziano, Jensen-Campbell, Shebilske, & Lundgren 1993).

Another likely positive feature is prosociality. Even though it does not necessarily contribute to closing the maturity gap, and thus may not directly contribute to popularity, it probably increases the likelihood of positive affect and, as a consequence, positive attributions, thus helping to make aggressive, destructive, and norm-breaking behaviors contribute to popularity.

We formulated two concrete and testable hypotheses. First, we hypothesized that adolescents who were low in positive features would not be popular, even if they were high in aggressive, destructive, and norm-breaking behaviors. Second, we predicted that a higher score on a positive feature would be associated with a stronger relation of aggressive, destructive, and norm-breaking behaviors with popularity. We tested these expectations in a large cross-sectional sample of adolescent boys and girls.

Method

Sample

In the present study, we used a subsample (one that contained peer nominations) from a larger cohort study, TRAILS (TRacking Adolescents' Individual Lives Survey). TRAILS is a prospective cohort study of Dutch preadolescents who will be measured biennially until they are at least 25 years old. TRAILS is designed to chart and explain the development of mental health and social development from preadolescence into adulthood. The TRAILS target sample involved pre-adolescents living in five municipalities in the north of the Netherlands, including both urban and rural areas (De Winter et al., 2005). Of all the children approached for enrollment in the study (selected by the municipalities and attending schools that were willing to participate; N = 3145 children from 122 schools; response of schools 90.4 percent), a total of 2230 children participated in the first assessment wave of TRAILS. Of the 2230 baseline participants, 96.4% (N =2149, 51.0% girls) participated in the

second assessment wave (T2). Mean age at T2 was 13.56, *SD* = 0.53.

During T2, questionnaires were filled out by the adolescents, their parents, and their teachers. In addition to the regular questionnaires, which were filled out by TRAILS participants only, the T2 assessment wave also included peer nominations, which were collected from both TRAILS participants and their classmates. This subsample of peer nominations was used in the present study.

Peer nominations were assessed in classes with at least three regular TRAILS participants. Schools provided the names of classmates of TRAILS participants. All eligible students then received an information letter for themselves and their parents, in which they were asked to participate. If students or their parents wished to refrain from participation, they were requested to send a reply card within ten days. In total, 98 students, of whom 3 regular TRAILS participants, refused to participate. Approximately two weeks after the information letter had been sent, a TRAILS staff member visited the selected school classes to assess the peer nominations. The assessment of the peer nominations lasted about 15 minutes and took place during regular lessons. Peer nominations were assessed in a total of 172 classes in 34 schools in the first grade (72 school classes) and second grade (100 school classes) of secondary education. The school classes were almost equally divided among levels of education: low education (60 school classes), middle education (53 school classes), and high education (59 school classes). In total, 3,312 students (1,675 boys, 1,637 girls), including 1,007 regular TRAILS participants, filled out the questionnaire and nominated their classmates (mean age = 14.02, *SD* = 0.73). Each classroom contained on average 18.39 participating pupils (*SD* = 5.99; range from 7 to 30). The subsample consisted of 87.3% Caucasian, 0.5% Turkish, 0.6% Moroccan, 1.7% Surinamese, 1.2% Antillian/Aruban, 2.5% Indonesian, and 4.1% other ethnic origin. For 2% of the participating students, information

about their ethnic origin was unavailable.

Measures

All measures in the present study were based on peer nominations from this subsample. Respondents could nominate an unlimited number of same-gender and cross-gender classmates on all questions.

Popularity. Popularity was based on the number of nominations adolescents received from their classmates on the question "Who do others want to belong with?". The concept of popularity covers aspects of influence, dominance, having social power, attractiveness, and resource control (cf. LaFontana & Cillessen, 2002; Lease et al., 2002; Parkhurst & Hopmeyer, 1998). In most studies of popularity among adolescents, respondents are asked to nominate the most (and least) popular peers; this can cover many aspects. Our measure was based on what adolescents presumably mean by saying that a person is popular, namely, that people want to be connected with the popular person, to be associated with that person, to 'bask in reflected glory' (Cialdini & Richardson, 1980). Moreover, we explicitly disentangled personal preferences for being associated with a person from reputation-based preferences by asking respondents to nominate people with whom *others* want to be connected. We believe that this yielded a reputation-based measure for what could be called 'associational popularity'. To facilitate reading, however, we refer to our measure simply as 'popularity' below.

Characteristics. Assessment of aggressive, destructive, and norm-breaking behaviors as well as of positive characteristics was based on the number of nominations respondents received from classmates on the following questions: "Who drinks alcohol and/or takes (soft)drugs on a regular basis?" (Norm-Breaking Behavior), "Who breaks the rules often (e.g., steals things, demolishes a bus shelter)?" (Destructive Behavior), "Who quarrels and/or

initiates fights often?" (Physical Aggression), "Which classmates bully you?" (Bullying), "Who spreads gossip/rumors about others?" (Relational Aggression), "Who is good in sports?" (Athletic Abilities), "Who is good looking?" (Physical attractiveness), and "Which classmates give you practical support (e.g., with homework)?"(Prosociality). After the total number of peer nominations had been added, scores were calculated relative to the total number of participating classmates to take differences in the number of respondents per class into account. This yielded scores from 0 to 1.

Results

Descriptives

Table 1 presents the means for both sexes. As shown in Table 1, boys had higher scores for norm-breaking behavior, destructive behavior, physical aggression, bullying, and athletic abilities, whereas girls scored higher on relational aggression, physical attractiveness, and prosociality. No gender difference was found for popularity.

It is apparent from Table 2 that for both boys and girls popularity was positively correlated with norm-breaking behavior, destructive behavior, physical aggression, bullying, and relational aggression. No gender differences were found, except for relational aggression, which was somewhat more strongly related to the popularity of girls than that of boys. Furthermore, popularity was positively related to athletic abilities, physical attractiveness, and prosociality. However, physical attractiveness correlated most strongly with popularity for girls, while the relation between athletic abilities and popularity was stronger for boys.

Tests of the hypotheses

First, we tested our hypothesis that adolescents who are low in positive features would not be popular even if they were high in (combined) aggressive, destructive, and

norm-breaking behavior. We assessed four groups based on the mean scores for these behaviors and for positive characteristics (i.e., athletic abilities, physical attractiveness, and prosociality), using a median-split (see Table 3). We then compared the groups based on their scores on popularity. The results clearly showed that popularity was lowest for adolescents who were low in both negative characteristics (combined aggressive, destructive, and norm-breaking behavior) and positive characteristics, whereas adolescents who were characterized by negative and positive characteristics scored highest on popularity. No differences emerged for separate comparisons of boys and girls.

Second, we tested the hypothesis that a higher score on a positive feature was associated with a stronger relation of aggressive, destructive, and norm-breaking behaviors with popularity. To this end, we initially conducted analyses on each moderation variable separately while controlling for the other two moderating variables (see models 2a, 2b, and 2c in Table 4). Significant interaction effects of these separate models were then tested in a simultaneous model (model 3). Although we had no a priori hypotheses regarding the role of gender in these moderating effects, three-way interactions with gender were also included in the analyses. To facilitate interpretation of interaction effects using simple slope analyses, all variables were z-standardized (Aiken & West, 1991). The regression coefficients and the accompanying standard errors of the parsimonious model are presented in Table 4.

The moderating effects of athletic ability and prosociality on the relation between norm-breaking behavior and popularity were as expected, but differed in strength for boys and girls (see Figure 1). The slope of norm-breaking behavior on popularity was steeper for highly athletic boys, $b = .20$, $t(3311) = 9.42$, $p < .001$, than for boys low in athletic abilities, $b = .12$, $t(3311) = 3.89$, $p < .001$. For girls, the effect of athletic abilities on the relation between norm-breaking behavior and popularity was in the same direction but weaker; $b = .13$,

$t(3311) = 3.96, p < .001$ for highly athletic girls and $b = .05$, $t(3311) = 1.71, p = .09$ for girls low in athletic abilities. Similarly, norm-breaking behavior appeared to be more closely related to popularity for highly prosocial boys, $b = .20$, $t(3311) = 5.35, p < .001$, than for boys low in prosociality, $b = .10$, $t(3311) = 4.04, p < .001$ (see Figure 2). Girls' norm-breaking behavior was unrelated to popularity for highly prosocial girls ($b = .04$, $t(3311) = 1.21$, $p = .23$), but was related for girls who were low in prosociality ($b = .10$, $t(3311) = 2.20$, $p = .03$).

Contrary to our expectations, destructive behavior was not associated with popularity and thus in this case, for both sexes, positive features made little difference. There was a small association for physical attractiveness; and for prosocial boys, the relations were even in the opposite direction (the popularity of highly prosocial boys was negatively related to an increasing level of destructive behavior, $b = -.12$, $t(3311) = -3.75, p < .001$, whereas the popularity of boys low in prosociality was slightly positively related to destructive behavior, $b = .05$, $t(3311) = 2.08, p = .04$).

As expected, prosociality moderated the relation of bullying with popularity. Bullying was particularly related to popularity in combination with a high level of prosociality, $b = .23$, $t(3311) = 7.63, p < .001$, rather than with a low level of prosociality, $b = .07$, $t(3311) = 3.60, p < .001$. A similar effect was found for relational aggression, which was more strongly associated with popularity for highly athletic adolescents, $b = .24$, $t(3311) = 7.46, p < .001$, than for adolescents low in athletic abilities, $b = .13$, $t(3311) = 5.81$ $p < .001$. The association of relational aggression with popularity was also enhanced by the presence of physical attractiveness (see Figure 3). The association of relational aggression with popularity was strongest for physically attractive boys, $b = .56$, $t(3311) = 8.59$ $p < .001$, followed by physically attractive girls, $b = .28$, $t(3311) = 13.48$ $p < .001$; less attractive boys and girls

profited less from an increasing level of relational aggression (i.e., $b = .17$, $t(3311) = 4.38$ $p <$. 001 for boys and $b = .09$, $t(3311) = 2.92$ $p <$. 01 for girls).

Discussion

Aggressive, destructive, and norm-breaking behaviors may contribute to popularity by helping to close the maturity gap (Moffitt, 1993), and by helping to defend a popular position (Cillessen & Mayeux, 2004). Yet, these behaviors also have negative relational aspects, such as putting people down, callousness, and aggressiveness. One would expect these negative aspects to turn people off, but empirical evidence shows otherwise. Why is this so? At least a partial answer to this question may come from goal-framing effects (Lindenberg, 2006). Positive features, such as physical attractiveness, athletic ability, and prosociality, activate approach goals and thus positive dispositional attributions (Trafimow, Bromgard, Finlay, & Ketelaar, 2005). In this study, we investigated this possibility and found that popular adolescents almost invariably have positive features in addition to aggressive, destructive, and norm-breaking behaviors, and that the positive features enhance the effects of these behaviors on popularity. For the formation of theory about popularity, the lesson from the present findings is that context matters for evaluations. Positive features create a context within which negative features are interpreted in a more positive light.

Limitations and Strengths

One limitation of our study is that the data were cross-sectional. As a consequence, it was not possible to draw firm conclusions about causality. This implies that statements about the effects of certain features on popularity might also be reversed. Although physical attractiveness and athletic abilities are difficult to influence, and thus likely to be conducive to rather than the result of popularity, the associations of aggressive, destructive, and norm-breaking behaviors with popularity may also be reciprocal. Popular adolescents might be

licensed by their peers to engage in deviant behaviors owing to their positive characteristics. In other words, their popularity might evoke aggressive, destructive, and norm-breaking behaviors.

Despite these caveats, the results of our study clearly demonstrate that the relations of aggressive, destructive, and norm-breaking behaviors with popularity are enhanced by positive features. A strong point of our study is the inclusion of both negative and positive features, and the interaction between them in a large sample with proportional numbers of boys and girls. We examined both non-aggressive deviant behaviors (destructive and norm-breaking behaviors) and aggressive types of behavior (physical aggression, bullying, and relational aggression) simultaneously, whereas research so far has primarily been focused on aggressive types of behaviors. Further research might profitably address the question whether the non-aggressive types of behavior become more important and more normative during adolescence, as would be expected from a developmental perspective. The focus on interaction effects enabled us to more fully understand under what conditions aggressive, destructive, and norm-breaking behaviors are related to popularity. Investigation of this relation extends our knowledge about the increasing attractiveness of deviant adolescents and why they might become role models for their peers (Adler & Adler, 1995; Moffitt, 1993). Most importantly, our findings underline the importance of considering the context effects of positive features for the interpretation of aggressive, destructive, and norm-breaking behaviors.

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Table 1

Percentage Scores for Boys and Girls Separately on all Variables (N=3312)

Variables	Mean (SD)		Differences (t-test)[a]
	Boys (*N* = 1675)	Girls (*N* = 1637)	
Popularity	0.10 (0.13)	0.10 (0.12)	$t(3308) = 0.32, p = .75$
Norm-Breaking Behavior	0.08 (0.15)	0.06 (0.12)	$t(3167) = 4.55, p < .01$
Destructive Behavior	0.05 (0.11)	0.01 (0.04)	$t(2122) = 14.07, p < .01$
Physical Aggression	0.12 (0.18)	0.03 (0.07)	$t(2232) = 18.82, p < .01$
Bullying	0.03 (0.07)	0.01 (0.03)	$t(2454) = 12.75, p < .01$
Relational Aggression	0.08 (0.10)	0.17 (0.15)	$t(2782) = -19.71, p < .01$
Athletic Abilities	0.39 (0.28)	0.21 (0.21)	$t(3091) = 20.26, p < .01$
Physical Attractiveness	0.11 (0.13)	0.26 (0.22)	$t(2686) = -23.41, p < .01$
Prosociality	0.18 (0.11)	0.21 (0.11)	$t(3309) = -10.12, p < .01$

[a] = Degrees of freedom deviant from $N_{girls} + N_{boys} - 2$ reflect test statistics adjusted for unequal variances.

Table 2

Correlations between Variables by Gender (N=3312)

	Popularity	Norm-Breaking Behavior	Destructive Behavior	Physical Aggression	Bullying	Relational Aggression	Athletic Abilities	Physical Attractiveness	Prosociality
Popularity	-	.26*	.18*	.28*	.25*	*.41**	*.29**	*.54**	.17*
Norm-Breaking Behavior	.30*	-	.43*	.27*	.17*	*.24**	*.03*	*.22**	*.05*+
Destructive Behavior	.24*	.53*	-	*.33**	*.23**	*.20**	.05+	*.12**	-.10*
Physical Aggression	.28*	.28*	*.48**	-	.45*	.38*	*.00*	*.06**	-.11*
Bullying	.30*	.18*	*.34**	.49*	-	*.39**	*.00*	.07*	-.09*
Relational Aggression	*.36**	*.17**	*.30**	.38*	*.44**	-	.06*	*.18**	.02
Athletic Abilities	*.39**	*.11**	.06*	*.09**	*.11**	.09*	-	.43*	.23*
Physical Attractiveness	*.37**	*.12**	*.04*	*-.02*	.03	*.06**	.45*	-	.34*
Prosociality	.16*	*-.01*	-.08*	-.10*	-.12*	-.01	.25*	.32*	-

Note. * = $p < .05$; Boys' correlations are printed below the diagonal; girls' correlations above the diagonal; *Italics:* significant gender difference.

Table 3

Comparison of Combined Negative and Positive Characteristics on Popularity (N=3312)

	Low Negative - Low Positive (37.1%)	High Negative - Low Positive (17.5%)	Low Negative - High Positive (27.9%)	High Negative - High Positive (17.4%)	Differences between groups
Popularity	-0.50[a]	0.00[b]	0.07[b]	0.95[c]	F (3, 3308) = 372.42, p <. 001

Note. Means in the same row that do not share superscripts differ at p <.05 in the Bonferroni test

Table 4

Prediction of Popularity of Boys and Girls among Adolescents (N = 3312)

	Step 1		Step 2a *Athletic Abilities*		Step 2b *Physical Attractiveness*		Step 2c *Prosociality*		Step 3 *Simultaneous*	
	b	se	*b*	se	*b*	se	*b*	se	*b*	se
Gender (1=boys)	.21***	.04	.23***	.04	.23***	.04	.22***	.04	.23***	.04
Norm-Breaking Behavior	.13***	.02	.06*	.03	.07*	.03	.08**	.03	.07*	.03
Destructive Behavior	-.01	.02	-.01	.02	-.02	.02	-.01	.05	-.01	.05
Physical Aggression	.19***	.04	.21***	.04	.22***	.04	.22***	.04	.21***	.04
Bullying	.10***	.02	.10**	.02	.10**	.02	.16***	.02	.15***	.02
Relational Aggression	.21***	.02	.25***	.02	.16***	.02	.21***	.02	.19***	.02
Gender x Physical Aggression	-.13**	.05	-.16**	.05	-.16***	.05	-.15**	.05	-.16**	.05
Gender x Relational Aggression	.10**	.04	.03	.04	.24***	.04	.11**	.04	.18***	.04
Athletic Abilities	.11**	.03	.06*	.03	.11***	.03	.11***	.03	.08**	.03
Physical Attractiveness	.37***	.02	.38***	.02	.33***	.02	.37***	.02	.35***	.02
Gender x Athletic Abilities	.11**	.03	.18***	.03	.11**	.03	.08**	.03	.12**	.04
Norm-Breaking x AA x Gender			.09**	.03					.08*	.03
Norm-Breaking x PA x Gender					.08*	.03				
Norm-Breaking x Pros. x Gender							.12***	.03	.08*	.03
Destructive Behavior. x PA					-.04*	.02				
Destructive Behavior x Pros. x Gender							-.12*	.05	-.13*	.05
Bullying x Pros.							.07***	.02	.08*	.05
Relational Aggression x AA			.11***	.02					.06*	.02
Relational Aggression x PA x Gender					.15**	.04			.10*	.03
Relational Aggression x Pros.							.07***	.02		
Adjusted R^2	.390		.403		.409		.404		.420	

Note. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$

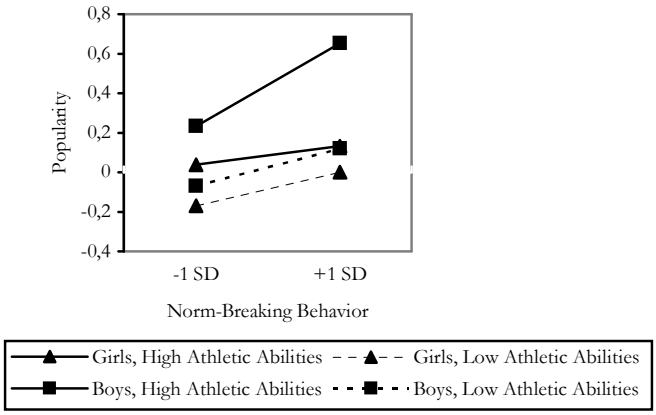
Figure Captions

Figure 1 Three-way interaction effects between norm-breaking behavior, athletic abilities, and gender for the prediction of popularity.

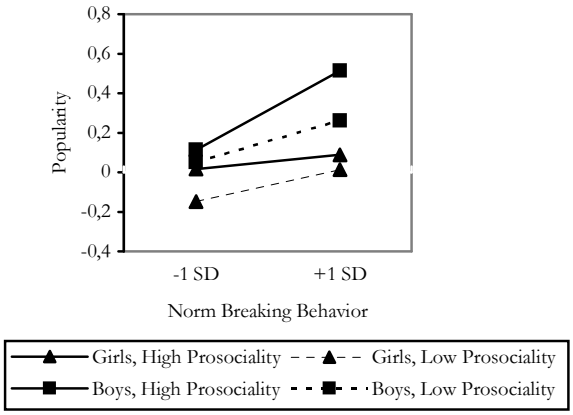
Figure 2 Three-way interaction effects between norm-breaking behavior, prosociality, and gender for the prediction of popularity.

Figure 3 Three-way interaction effects between relational aggression, physical attractiveness, and gender for the prediction of popularity.

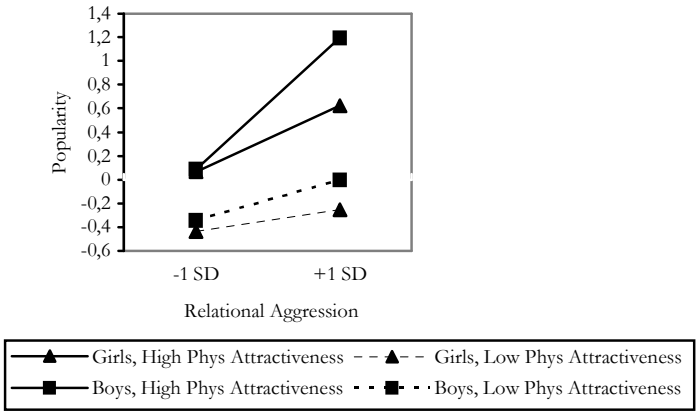
(Fig 1)


0,8
0,6
0,4
0,2
0
-0,2
-0,4
Popularity
-1 SD
+1 SD
Norm-Breaking Behavior
Girls, High Athletic Abilities
Girls, Low Athletic Abilities
Boys, High Athletic Abilities
Boys, Low Athletic Abilities

(Fig 2)


0,8
0,6
0,4
0,2
0
-0,2
-0,4
Popularity
-1 SD
+1 SD
Norm Breaking Behavior
Girls, High Prosociality
Girls, Low Prosociality
Boys, High Prosociality
Boys, Low Prosociality

(Fig 3)


1,4
1,2
1
0,8
0,6
0,4
0,2
0
-0,2
-0,4
-0,6
Popularity
-1 SD
+1 SD
Relational Aggression
Girls, High Phys Attractiveness
Girls, Low Phys Attractiveness
Boys, High Phys Attractiveness
Boys, Low Phys Attractiveness