

Hedonic, Instrumental, and Normative Motives: Differentiating Patterns for Popular, Accepted, and Rejected Adolescents

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Abstract

This study examined to what extent motives for behavior differentiated between popular, accepted, and rejected adolescents. Based on goal-framing theory, three types of motives were distinguished: hedonic (aimed at short-term gratification), instrumental (aimed at improvement of one's situation), and normative (aimed at acting in accordance with what one thinks one is ought to do) motives, which were based on teachers' assessments. These motives were related to peer-reported popularity, acceptance, and rejection in a sample of adolescent boys ($n = 287$) and girls ($n = 303$; $\bar{X}_{\text{age}} = 13.51$; $SD = 0.54$). Results showed that popular adolescents were mainly characterized by instrumental and normative motives. Accepted adolescents were high in hedonic and normative motives, but low in instrumental motivation, whereas rejected adolescents showed the exact opposite pattern. These results indicate that being successful among peers is not only a matter of behavior but also of motives underlying behaviors.

Keywords

popularity, acceptance, rejection, sociometric status, motives, goals

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Within the peer context, adolescents can achieve different social positions, varying from being popular, accepted/liked to being rejected (Cillessen & Rose, 2005). Differences in social standing among peers have mostly been explained by adolescents' behaviors and characteristics, revealing distinct profiles. Popular adolescents have been characterized as aggressive in combination with being prosocial and having peer-valued characteristics, such as athletic abilities, physical attractiveness, and dressing fashionably (Cillessen & Mayeux, 2004; De Bruyn & Van den Boom, 2005; Dijkstra, Lindenberg, Verhulst, Ormel, & Veenstra, 2009; LaFontana & Cillessen, 2002). Reflecting an ambiguous position among peers, popular adolescents are also seen as stuck-up, snobbish, and arrogant (de Bruyn & Cillessen, 2006; Gorman, Kim, & Schimmelbusch, 2002; Parkhurst & Hopmeyer, 1998). Well-liked, accepted adolescents have mainly been characterized by their prosocial skills and behaviors without being aggressive, whereas rejected adolescents predominantly distinguish themselves with aggressive behaviors and the absence of prosocial behaviors (Cillessen & Mayeux, 2004; Coie, Coppotelli, & Dodge, 1982; Dijkstra, Lindenberg, & Veenstra, 2007; Gifford-Smith & Brownell, 2003; Lease, Kennedy, & Axelrod, 2002; Lease, Musgrove, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998). Together these studies have revealed distinct profiles for popular, accepted, and rejected adolescents. Yet, surprisingly little is known about the extent to which different positions in the peer group relate to distinct motives for behavior of adolescents. Some behaviors and particularly characteristics might be difficult to change, such as being good in sports or attractive, but the extent to which adolescents are prosocial or aggressive might be the result of underlying intentions and motives. Research of Hawley, Little, and Card (2008) and Hawley and Vaughn (2003) in this direction examined how coercive, aggressive behaviors and prosocial behaviors are strategies for resource control, suggesting intentions underlying the use of these strategies. Reflecting similar patterns as mentioned above, adolescents who combined coercive and prosocial strategies for resource control, labeled as bistrategics, were most popular. Adolescents, who were mainly characterized by prosocial resource control strategies, were most accepted among peers, whereas rejection was highest for adolescents using predominantly coercive, aggressive strategies. With regard to bullying, Sijtsema, Veenstra, Lindenberg, and Salmivalli (2009) showed that bullies were motivated to gain dominance by having status goals, which also was related to being popular, whereas rejected children were low in status goals. Together, these studies suggest that particular motives might underlie positions in the peer group.

We aim to add to these studies by examining how popularity, acceptance, and rejection in the peer group are related to distinct motives for behavior.

We approach motives from the point of view of goals. Research on goals has shown that motivational and cognitive processes are intertwined. Goals, and especially overarching goals (mind-sets), govern what one pays attention to, what kind of information one is particularly sensitive to, what alternatives one considers, and so on (see Kruglanski & Köpetz, 2009). In the developmental literature, the importance of goals for acceptance and rejection has been emphasized by various authors (cf. Crick & Dodge, 1994; Dijkstra et al., 2007; Heidgerken, Hughes, Cavell, & Willson, 2004; Ojanen, Grönroos, & Salmivalli, 2005; Renshaw & Asher, 1983). Prominent distinctions between motives in this sense pertain to assertiveness/friendliness (Renshaw & Asher, 1983) and agentiveness/communality (Ojanen, Aunola, & Salmivalli, 2007; Ojanen et al., 2005). These distinctions have proven to be very useful, yet they gloss over a distinction that has proven to be important in many contexts: whether people are motivated instrumentally (i.e., being planful, cunning, manipulative) or hedonically (i.e., focusing on feeling good, spontaneous, fun loving). For our study, we therefore followed goal-framing theory (Lindenberg, 2006, 2013; Lindenberg & Steg, 2007) that distinguishes three overarching goals: hedonic, instrumental, and normative goals. *Hedonic goals* aim at maintaining or improving the way one feels right now, that is, seeking direct gratification (here and now perspective). *Instrumental goals* aim at maintaining or improving one's resources, reflecting more strategic and calculative intentions to improve one's situation in the longer run (perspective of the future self). *Normative goals* indicate behaving appropriately, conforming to social norms and rules (perspective of the generalized other).

These motives are not mutually exclusive but are likely to be chronically activated or inhibited to various degrees. Because of the simultaneous activation and because hedonic and instrumental motives are both related to self-interest versus interests of the other, they are likely to correlate more strongly with each other than with the normative goal (see Tamir, Mitchell, & Gross, 2008). Yet, they are different in the major focus (feelings vs. resources) and in the time perspective (short term vs. longer term). At any given time, one of the three goals is the most dominant (i.e., the most strongly activated) goal. For example, somebody may be strongly normatively motivated but also motivated to have a good time if this remains within the limits of what is allowed. The fact that these overarching goals are chronically activated to various degrees allows the simultaneous influence of trait and state effects. The overarching goal that is most strongly chronically activated exerts its influence across situations and thus functions in a trait-like manner. It is also possible that an overarching goal is chronically strongly inhibited, in which case the trait-like feature is that

lack of situational activation. The overarching goal that is least strongly chronically activated without being inhibited is most likely to be situationally influenced. Thus, one gets motivational profiles that consist of strongly and less strongly chronically activated overarching goals (which we here call “motives”). For example, although the instrumental motivation may be dominant across situations, a subdominant normative motivation may co-occur only in some situations and not in others. For another person, the inhibition of hedonic motivations is so strong that it will also occur across situations. This makes for the possibility that specific motivational profiles are not just characterized by the dominant type of motivation, but also by a more or less dominant inhibition, and more or less openness to situational influences. Because of this multiplicity of motives and their differing strengths, it is useful to focus on their combination, reflecting their trait and state-like aspects. We expect that these motivational profiles translate into different positions in the peer group.

What characterizes popular adolescents is that they are attractive for affiliation, excitement, daringness, and showing coercive, aggressive behaviors (LaFontana & Cillessen, 2002). This highly instrumental behavior also concerns the defense of the popular position (Caravita & Cillessen, 2012; Cillessen & Mayeux, 2004). However, depending on the situation, adolescents can also be hedonically motivated in their opposition to adult norms, with involvement in risk behavior (Mayeux, Sandstrom, & Cillessen, 2008; Tucker et al., 2011) and a low priority of academic achievement (de Bruyn & Cillessen, 2006; Troop-Gordon, Visconti, & Kuntz, 2011). Their normative motivations are likely to differ situationally, being antisocial with regard to adult norms and in defense of their position on the one hand and periodically prosocial to peers on the other hand (De Bruyn & Van den Boom, 2005; Dijkstra et al., 2009; Lease, Musgrove, & Axelrod, 2002). We thus expect popular adolescents to be mainly characterized as instrumentally motivated, to a lesser extent hedonically motivated, and occasionally normatively motivated.

In contrast to popular adolescents, we expect accepted adolescents to be liked because they are motivated to be friendly and helpful (i.e., normatively motivated) and fun to be with (i.e., hedonically motivated; cf. Dijkstra et al., 2007; Gifford-Smith & Brownell, 2003). We also expect that their likeability is in large part due to their not being calculating, manipulative or coercive, that is, not instrumentally motivated. Finally, the motivational profile of rejected adolescents is likely to differ from that of their being highly instrumentally motivated without the redeeming features of hedonic or normative motivation. They are thus likely to be neither motivated to be prosocial nor perceived as fun to be with (cf. Gifford-Smith & Brownell, 2003).

Method

Sample

To test our hypotheses, we relied on data from of TRacking Adolescents' Individual Lives Survey (TRAILS); a prospective cohort study of Dutch preadolescents who will be measured biennially until they are at least 25 years old to chart and explain the development of mental health and social development from preadolescence into adulthood. We used a subsample of adolescents in the present study for whom peer nominations and teacher assessments for motivations were available. The TRAILS target sample were preadolescents 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; $N = 3,145$ children from 122 schools; response of schools 90.4%), a total of 2,230 children participated in the first assessment wave of TRAILS. Of the 2,230 baseline participants, 96.4% ($n = 2,149$, 51% girls) participated in the second assessment wave (T2). Mean age at T2 was 13.60, $SD = 0.53$ (Huisman et al., 2008).

During the second wave of data collection, adolescents, their parents, and their teachers completed questionnaires, which, on this occasion, also included peer nominations. These were collected from both TRAILS participants and their classmates. Peer nominations were assessed in classes with at least three regular TRAILS participants. In total, 98 students, of whom 3 were regular TRAILS participants, refused to participate. The assessment of the peer nominations lasted about 15 minutes and took place during regular lessons. 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 (for a more detailed description, see Dijkstra et al., 2009).

In the current study, we used information from the peer nominations in combination with teacher reports, which were assessed for TRAILS respondents only. This resulted in a target sample of 590 participants (287 boys and 303 girls) with a mean age of 13.51 ($SD = 0.54$). Respondents with complete information did not differ in popularity, $t(3310) = -1.28, p = .20$; acceptance, $t(3310) = 1.28, p = .20$; and rejection, $t(3310) = -1.37, p = .17$, from respondents with only peer reports. They did also not differ on hedonic, $t(1314) = 0.09, p = .93$; instrumental, $t(1314) = -0.43, p = .67$; and normative motives, $t(1314) = 1.44, p = .15$, from respondents with only teacher reports.

Measures

Peer measures. Popularity, peer acceptance, and peer rejection were based on the number of nominations received from their classmates on the question “who do other want to be associated with” (popularity), “who do you like” (peer acceptance), and “who do you dislike” (peer rejection). Respondents could nominate an unlimited number of same-gender and cross-gender classmates on all questions. For each measure, the total number of peer nominations was added and subsequently calculated relative to the total number of participating classmates to take differences in the number of respondents per class into account. This yielded proportion scores from 0 to 1.

We used a somewhat different measure for popularity as in previous research. In most studies of popularity among adolescents, respondents are asked to nominate the most (and least) popular peers; this can cover many aspects, such as influence, dominance, power, attractiveness, and resource control (de Bruyn & Cillessen, 2006; LaFontana & Cillessen, 2002; Lease, Musgrove, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998). 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, and to “bask in reflected glory” (Cialdini & Richardson, 1980; Dijkstra et al., 2010a). 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. This yields a reputation-based measure of affiliative popularity, referred to as “popularity” (see also Dijkstra et al., 2009; Dijkstra et al., 2010b).

Motives for behavior. Teachers answered 15 statements about students’ motives for behavior on a 5-point scale ranging from 0 (*never*) to 4 (*usually*). Items included statements such as “only does something when it is pleasant” (hedonic motives), “is calculative in his/her behavior” (instrumental), and “wants to make himself/herself useful for others” (normative motives; see description of all items in Table 1). Principal component analyses using varimax rotation revealed that all items loaded positively on the three distinct motives, that is, hedonic motives, instrumental motives, and normative motives with a total explained variance of 63.2%. For each motive, scores on the five items were summed and divided by the number of items, resulting in three internally consistent scales; hedonic motives ($\alpha = .86$), instrumental motives ($\alpha = .84$), and normative motives ($\alpha = .80$).

Table 1. Individual Items Measuring Hedonic, Instrumental, and Normative Motives.

 This student . . .

Hedonic ($\alpha = .86$)

- thinks in the short term
- only exerts on something when it is fun
- only does things for sociability
- only does something when it is pleasant
- only shows effort when it pays off

Instrumental ($\alpha = .84$)

- manipulates others to get what he/she wants
- focuses on obtaining personal gain
- is calculative in his/her behavior
- tries to achieve his/her goal at all costs
- is only nice when it suits him/her

Normative ($\alpha = .80$)

- helps others with a task to make them happy
 - is willing to give money for charity
 - wants to make himself/herself useful for others
 - bears others in mind in his/her behavior
 - behaves appropriate in view of teachers and parents
-

Note. Answer categories ran on a 5-point scale from 0 (*never*) to 4 (*usually*).

Results

Descriptive Statistics and Correlations

We first examined whether boys and girls differed in peer measures and motives in behaviors by means of *t* tests (Table 2). No gender differences were found for popularity, acceptance, or rejection. Boys scored higher on hedonic motives, whereas girls scored higher on normative motives. Instrumental motives did not differ by gender.

Correlational analyses showed that popularity correlated weakly with peer acceptance for boys and moderately for girls (Table 3). Acceptance was negatively correlated with rejection. For both boys and girls, hedonic motives correlated positively with instrumental motives, and negatively with normative motives, whereas instrumental and normative motives were negatively associated. When looking at the associations of motives with popularity, acceptance, and rejection, it appeared that popularity was associated with hedonic and instrumental motives, but it was unrelated to normative motives (both for boys

Table 2. Mean Differences Between Boys and Girls on Study Variables.

	\bar{X} (SD)		t tests
	Boys (n = 287)	Girls (n = 303)	
Peer measures			
Popularity	0.11 (0.13)	0.11 (0.13)	$t(588) = 0.78, p = .44$
Acceptance	0.55 (0.21)	0.54 (0.21)	$t(588) = 0.13, p = .90$
Rejection	0.13 (0.16)	0.11 (0.14)	$t(588) = 1.42, p = .16$
Motives			
Hedonic	1.72 (0.74)	1.49 (0.72)	$t(588) = 3.89, p < .001$
Instrumental	1.25 (0.69)	1.16 (0.73)	$t(588) = 1.58, p = .11$
Normative	2.22 (0.61)	2.46 (0.62)	$t(588) = -4.75, p < .001$

Note. Peer measures are proportion scores from peer nominations, running from 0 to 1; motives are scale scores from teacher reports, running from 0 to 4.

Table 3. Correlations Between Main Variables.

	1	2	3	4	5	6
1. Popularity	—	.24*	-.04	.18*	.19*	-.02
2. Acceptance	.11	—	-.64*	.10	-.10	.13*
3. Rejection	.03	-.70*	—	.01	.21*	-.14*
4. Hedonic	.19*	.06	.03	—	.62*	-.30*
5. Instrumental	.22*	-.01	.17*	.62*	—	-.32*
6. Normative	-.02	.10	-.18*	-.37*	-.39*	—

Note. Correlations above diagonal for girls (n = 303); below diagonal for boys (n = 287).
* $p < .05$.

and girls). Whereas acceptance was positively related to normative motives both for boys and girls, it was marginally significantly related to hedonic motives (positively) and instrumental motives (negatively) for girls only. For boys and girls, rejection was positively related to instrumental motives, negatively related to normative motives, and unrelated to hedonic motives.

Structural Equation Modeling Predicting Popularity, Acceptance, and Rejection From Motives

To test our hypotheses, we examined to what extent hedonic, instrumental, and normative motives together predicted popularity, acceptance, and

rejection, respectively, by means of structural equation modeling. Before testing the hypothesized structural relationships, measurement models were computed to confirm the factorial structure of the proposed constructs. Goodness-of-fit was assessed by examining the comparative fit index (CFI), root mean square of approximation (RMSEA), and standardized root mean square residual (SRMR) but we also note the χ^2 . The latter almost always yields a significant value (i.e., discrepancy between model and data) in complex models with large n , however. Using the modification indices function in Mplus 7.2 (Muthén & Muthén, 2010), models were adjusted to obtain a better fit to the data. These modifications concerned two correlated residual variances (between the items “manipulates others to get what he/she wants” and “focuses on obtaining personal gain” as well as “bears others in mind in his/her behavior” and “behaves appropriate in view of teachers and parents”). Including these modifications resulted in an acceptable fit for all three measurement models: popularity, $\chi^2(108) = 315.31$, CFI = .96, RMSEA = .057, SRMR = .044; acceptance, $\chi^2(108) = 323.86$, CFI = .96, RMSEA = .058, SRMR = .046; rejection, $\chi^2(108) = 323.37$, CFI = .96, RMSEA = .058, SRMR = .045. A measurement model containing all peer status types yielded a borderline acceptable model-data fit: $\chi^2(137) = 743.05$, CFI = .88, RMSEA = .087, SRMR = .070. Separate sets of analyses were conducted for the three status types (see Figures 1-3) initially, followed by a model containing all status types simultaneously. For each status type, a model was fitted in which the direct paths from motives to status type were assessed. Independent variables were allowed to correlate with each other. We controlled for gender in all analyses and note the amount of variance explained by gender alone.

In the model predicting popularity, higher levels of instrumental and normative motives were both related to higher popularity among peers, and there was no inhibition of hedonic motives (Figure 1). Acceptance was positively related to normative and hedonic motives, and negatively associated with instrumental motives (Figure 2). For rejection we found the expected profile opposite to the acceptance profile; a positive relation with instrumental motives, but negative associations with hedonic and normative motives (Figure 3). All significant links also emerged when we examined all status outcomes simultaneously, model fit: $\chi^2(150) = 407.16$, CFI = .951, RMSEA = .054 (.048-.060), SRMR = .044 (details available on request). We also examined the amount of variance explained with gender removed from the models. Gender was not a significant predictor of rejection or acceptance, thus the amount of variance explained in both status types remained the same as when gender was included as covariate. In contrast, popularity was predicted by

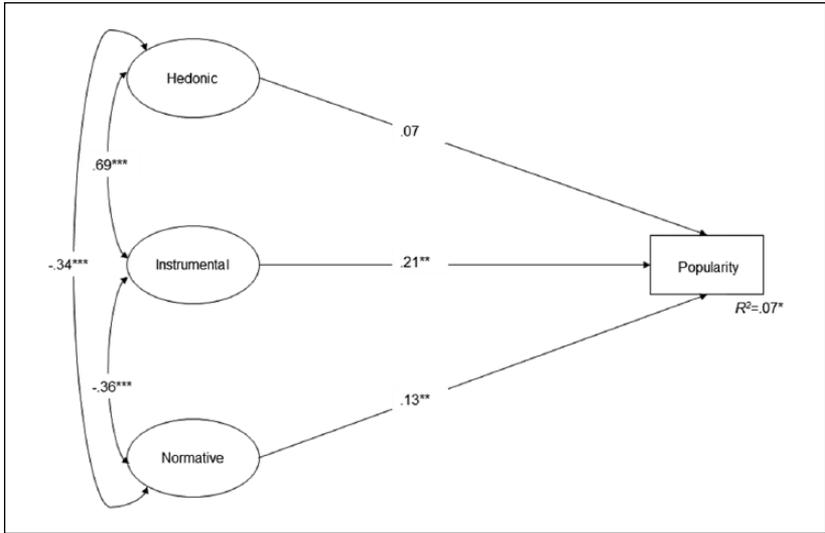


Figure 1. Hedonic, instrumental, and normative motives predicting popularity ($n = 590$).

Note. Model fit: $\chi^2(124) = 360.21$, CFI = .951, RMSEA = .057 (.050-.064), SRMR = .044.

CFI = comparative fit index; RMSEA = root mean square of approximation; SRMR = standardized root mean square residual.

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

gender: $b = -.10, p < .05$, and removing this covariate lowered the amount of variance explained in the outcome by 1% (note that R^2 was still significant at $p < .05$). In sum, our analyses showed that the different motivational profiles clearly differentiated in the expected direction between popularity, acceptance, and rejection.

Supplementary Analyses

Because teachers might derive perceptions of motives from observed behavior, we additionally looked at the extent to which the link between motives and the different positions in the peer group were explained by behaviors. To this end, we included self-reported risk behaviors, aggression, and prosocial behavior (see description of measures in the appendix), which relate to hedonic, instrumental, and normative motives, respectively (see Appendix Figures A1-A3). Although the different motives were related to these behaviors, the strength of these effects and the link of the behaviors

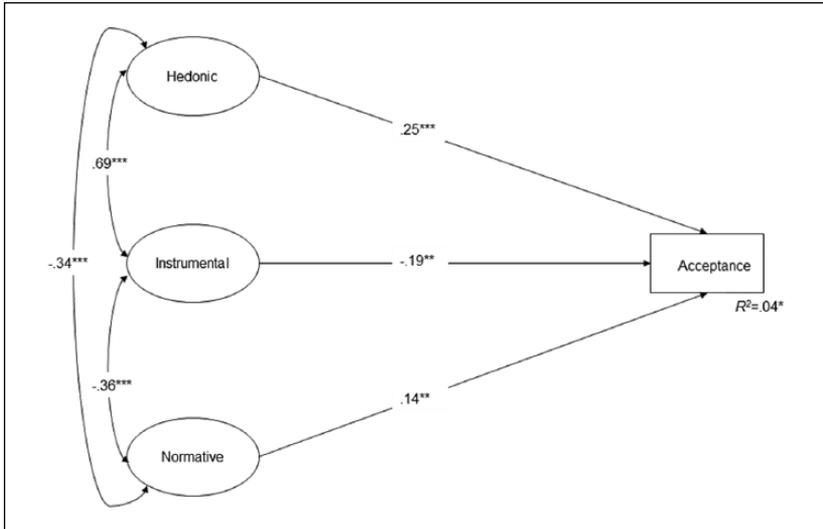


Figure 2. Hedonic, instrumental, and normative motives predicting acceptance ($n = 590$).

Note. Model fit: $\chi^2(124) = 369.11$, CFI = .949, RMSEA = .058, SRMR = .046. CFI = comparative fit index; RMSEA = root mean square of approximation; SRMR = standardized root mean square residual.

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

to the peer position suggest that the motivational profiles did not simply reflect behaviors. All direct links between motives and peer position remained more or less the same with and without considering behavior. Together, these findings indicate that our motivational profiles do not merely measure behaviors.

Discussion

In this study we examined the extent to which different motives translate into distinct positions of adolescents in their peer group. On the basis of the three major motives distinguished by goal-framing theory (hedonic, instrumental, and normative motivation) (Lindenberg, 2006, 2008; Lindenberg & Steg, 2007), we predicted different motivational profiles for popular, accepted, and rejected adolescents. The motivational profile was approached as a combination of trait and state-like features. That is, a particular motive would dominate across situations, but it is also a trait-like feature to which degree a

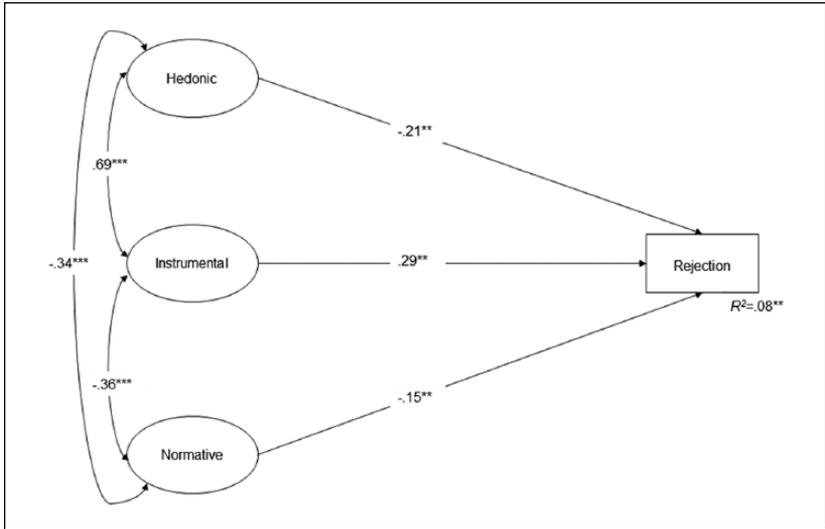


Figure 3. Hedonic, instrumental, and normative motives predicting rejection ($n = 590$).

Note. Model fit: $\chi^2(124) = 368.20$, CFI = .950, RMSEA = .058 (.051-.065), SRMR = .045.

CFI = comparative fit index; RMSEA = root mean square of approximation; SRMR = standardized root mean square residual.

** $p < .01$. *** $p < .001$.

particular motivation is inhibited and to which degree situations can influence the motivation. With a strongly dominant motive and with a strong inhibition of other motives, the situation will not have much influence. The possibility of situational influences is however also part of a particular motivational profile. These ideas resulted in specific predictions of how different positions in the peer group were linked to distinct motivational profiles with hedonic, instrumental, and normative motives simultaneously. For popular adolescents, we predicted a dominant instrumental motivation with situational hedonic and normative motivations. For accepted adolescents we predicted a dominant normative motivation, and strong inhibition of an instrumental motivation, and a situational hedonic motivation. For rejected adolescents, we expected a dominant instrumental motivation with strong inhibition of normative and hedonic motivations.

Our results suggest that indeed these motivational profiles were differently related to popularity, acceptance, and rejection in the peer group, showing distinct patterns for each type of position in the peer group.

Whereas accepted and rejected adolescents showed opposite patterns, popular adolescents had a more balanced motivational profile: being instrumental (and having a tendency to be hedonic) without being normatively inhibited. We predicted them to be antinormative with regard to adult norms and occasionally prosocial to peers, resulting in a low overall normative motivation. Contrary to rejected peers, popular adolescents seem to get away with the negative aspects of instrumental motives, seemingly because they have redeeming motivations (see also Dijkstra et al., 2009; Poorthuis, Thomaes, Denissen, Van Aken, & De Castro, 2012; Vaillancourt & Hymel, 2006). Accepted adolescents were particularly characterized by being normatively motivated and not instrumentally motivated. What we had not expected, though, is that their hedonic motivation is even stronger than the normative one. This would indicate that the strong inhibition of a calculative and manipulative motivation rendered their hedonic motivation (fun seeking) even more socially attractive than, for instance, their helpfulness.

This brings us to a limitation of this study. The cross-sectional nature of our data does not allow testing for causal relationships. Implicitly, we assumed that motives underlie behavior, which in turn translate into popularity, acceptance, or rejection. It could be argued however that some types of motives might also be reinforced *after* the achievement of a certain social standing among peers. This might hold particularly for gaining popularity, evoking instrumental, calculative behavior in order to maintain this position and fighting off competitors, the so-called Machiavellians (Hawley, 2003). This could also apply to accepted adolescents, who might become more sensitive and responsive to normative expectations in order to maintain their position in the group.

Although the motives we examined in our study differentiated between popularity, acceptance and rejection, it should be taken into account that the explained variance of our models was relatively low, suggesting that there are important other factors than motives that impact on adolescents' social standing in the peer group.

Furthermore, we only assessed positions and motives in a class context, which might differ from other contexts, such as home or peer settings outside of school. In theory, the dominant motive and the inhibited motives should be stable across situations, but we could not test this with the data at hand.

One specific aspect of our study is that we used teachers' assessments as the basis for the imputation of motivational profiles (which contain strongly and weakly activated goals). In general, motives are difficult to measure.

Research often relies on self-reported importance evaluations (e.g., how important is it to you that others respect and admire you?) as bases for the imputation of motivations. If one deals with strongly chronically activated (or inhibited) goals, this method is fairly adequate and it is also used for assessing values as chronically activated goals (Steg, Perlaviciute, Van der Werff, & Lurvink, 2014). However, for assessing goals that are not so strongly chronically activated and therefore are more likely to change in accordance with the situation, this method is not very useful. There is some evidence that self-reports about such weaker goals are likely to be subject to situational priming effects (Moreno-Murcia, Sicilia, Cervello, Huéscar, & Dumitru, 2011; Rasinski, Visser, Zagatsky, & Rickett, 2005). For such goals, it is helpful to use reports by somebody who has experience with motive assessment and who can observe a person repeatedly in a variety of situations. Teachers are in a position to do just that. They have frequent opportunities to observe their students and to form judgments about their major and minor motives in different situations. Teachers' assessments of motives have been successfully used on other research (see, for example, Hawley & Geldhof, 2012), albeit for young children rather than adolescents.

This method is, of course, also not without its problems. Students may purposefully try to make a particular impression, hiding their "true" motives. For example, a highly instrumental person may purposefully try to appear normatively motivated in order to gain some advantage. However, by and large, this will not fool teachers (or fellow students) all the time if they have the opportunity for longer term observation (Back, Schmukle, & Egloff, 2010). Another problem could be the fact that teachers' assessments often differ from those of parents (see Veenstra et al., 2008). However, teachers also have a better opportunity to compare children than parents. In short, whereas the assessment of motives is always a difficult matter, teachers' assessments seem to be our best bet for the combined assessment of major and minor overarching goals of adolescents.

Despite the limitations, the strong point of the study stands: The patterns we found do not only shed light on how adolescents are motivated regarding behaving in the peer group, but also show the validity and usefulness of distinguishing motivational profiles based on hedonic, instrumental, and normative motives for understanding peer relations. We showed that the position in the peer group is not only a matter of behavior and characteristics but also of profiles of motives, which helps us better understand why some adolescents successfully get along with their peers, whereas other do not.

Appendix

Self-Reported Risk Behavior, Aggression, and Prosocial Behavior

Risk behavior, aggression, and prosocial behavior were all assessed by questions from the Youth Self-Report (YSR) with answer categories running from never (0), sometimes (1), to often (2) (Achenbach, 1991). Risk behavior was measured by 17 questions about smoking, drinking alcohol, using drugs, and truancy. Internal consistency was good with an alpha of .78. Aggression was measured by 13 questions about the extent to which respondents were, for instance, mean to others, lied or cheated, or bullied others. The internal consistency of the scale was acceptable ($\alpha = .65$). Prosocial behavior was measured by seven items, asking respondents to indicate to what extent they for instance liked helping others and tried to be honest to others ($\alpha = .63$). Answers were summed and divided by the number of questions.

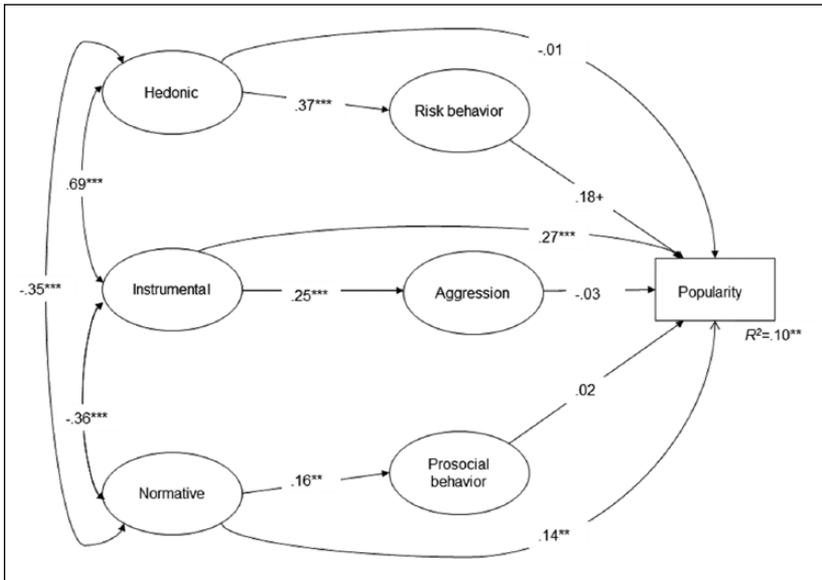


Figure A1. Behaviors mediating associations of hedonic, instrumental, and normative motives with popularity ($n = 590$).

Note. Model fit: $\chi^2(1410) = 3,050.25$, CFI = .82, RMSEA = .044 (.042-.047), SRMR = .061. CFI = comparative fit index; RMSEA = root mean square of approximation; SRMR = standardized root mean square residual.

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

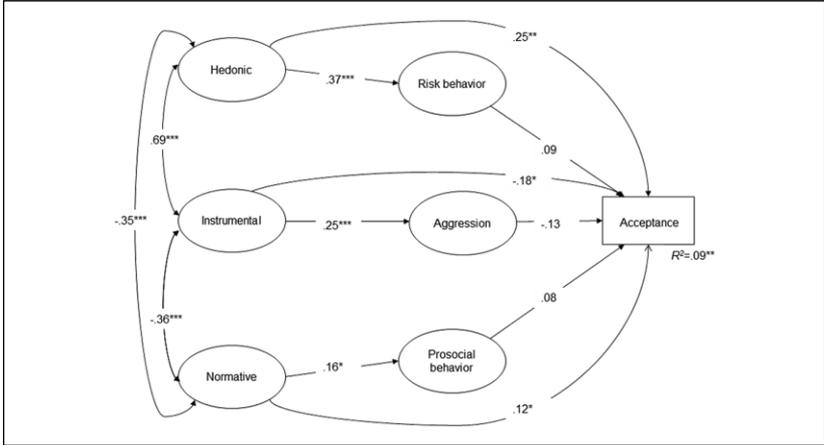


Figure A2. Behaviors mediating associations of hedonic, instrumental, and normative motives with acceptance ($n = 590$).

Note. Model fit: $\chi^2(1410) = 3,042.12$, CFI = .82, RMSEA = .044 (.042-.046), SRMR = .061.

CFI = comparative fit index; RMSEA = root mean square of approximation; SRMR = standardized root mean square residual.

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

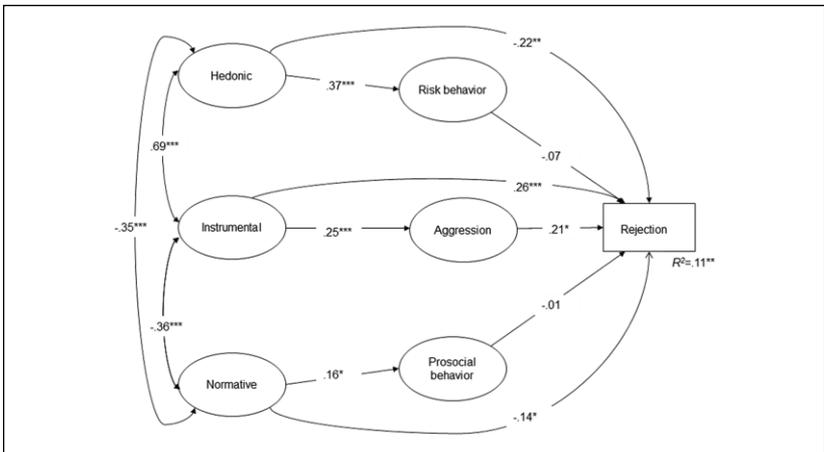


Figure A3. Behaviors mediating associations of hedonic, instrumental, and normative motives with rejection ($n = 590$).

Note. Model fit: $\chi^2(1410) = 3,044.77$, CFI = .82, RMSEA = .044 (.042-.046), SRMR = .061.

CFI = comparative fit index; RMSEA = root mean square of approximation; SRMR = standardized root mean square residual.

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

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References

- Achenbach, T. M. (1991). *Manual for the YSR and 1991 profile*. Burlington: Department of Psychiatry, University of Vermont.
- Back, M. D., Schmukle, S. C., & Egloff, B. (2010). Why are narcissists so charming at first sight? Decoding the narcissism-popularity link at zero acquaintance. *Journal of Personality and Social Psychology, 98*, 132-145. doi:10.1037/a0016338
- Caravita, S. C. S., & Cillessen, A. H. N. (2012). Agentic or communal? Associations between interpersonal goals, popularity, and bullying in middle childhood and early adolescence. *Social Development, 21*, 376-395. doi:10.1111/j.1467-9507.2011.00632.x

- Cialdini, R. B., & Richardson, K. D. (1980). Two indirect tactics of impression management: Basking and blasting. *Journal of Personality and Social Psychology, 39*, 406-416.
- Cillessen, A. H. N., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*, 147-163. doi:10.1111/j.1467-8624.2004.00660.x
- Cillessen, A. H. N., & Rose, A. J. (2005). Understanding popularity in the peer system. *Current Directions in Psychological Science, 14*, 102-105. doi:10.1111/j.0963-7214.2005.00343.x
- Coie, J. D., Coppotelli, H., & Dodge, K. A. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18*, 557-570. doi:10.1037/0012-1649.18.4.557
- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*, 74-101. doi:10.1037/0033-2909.115.1.74
- de Bruyn, E. H., & Cillessen, A. H. N. (2006). Heterogeneity of girls' consensual popularity: Academic and interpersonal behavioral profiles. *Journal of Youth and Adolescence, 35*, 435-445. doi:10.1007/s10964-005-9023-4
- De Bruyn, E. H., & Van den Boom, D. C. (2005). Interpersonal behavior, peer popularity, and self-esteem in early adolescence. *Social Development, 14*, 555-573. doi:10.1111/j.1467-9507.2005.00317.x
- De Winter, A., Oldehinkel, A. J., Veenstra, R., Brunnekreef, J. A., Verhulst, F. C., & Ormel, J. (2005). Evaluation of non-response bias in mental health determinants and outcomes in a large sample of pre-adolescents. *European Journal of Epidemiology, 20*, 173-181. doi:10.1007/s10654-004-4948-6
- Dijkstra, J. K., Cillessen, A. H. N., Lindenberg, S., & Veenstra, R. (2010a). Basking in reflected glory and its limits: Why adolescents hang out with popular peers. The TRAILS study. *Journal of Research on Adolescence, 20*, 942-958. doi:10.1111/j.1532-7795.2010.00671.x
- Dijkstra, J. K., Cillessen, A. H. N., Lindenberg, S., & Veenstra, R. (2010b). Same-gender and cross-gender likeability: Associations with popularity and status enhancement. *Journal of Early Adolescents, 30*, 773-802. doi:10.1177/0272431609350926
- Dijkstra, J. K., Lindenberg, S., & Veenstra, R. (2007). Same-gender and cross-gender peer acceptance and peer rejection and their relation with bullying and helping among preadolescents: Comparing predictions from gender-homophily and goal-framing approaches. *Developmental Psychology, 43*, 1377-1389. doi:10.1037/0012-1649.43.6.1377
- Dijkstra, J. K., Lindenberg, S., Verhulst, F. C., Ormel, J., & Veenstra, R. (2009). The relation between popularity and antisocial behaviors: Moderating effects of athletic abilities, physical attractiveness, and prosociality. *Journal of Research on Adolescence, 19*, 401-413. doi:10.1111/j.1532-7795.2009.00594.x
- Gifford-Smith, M. E., & Brownell, C. A. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology, 41*, 235-284. doi:10.1016/S0022-4405(03)00048-7

- Gorman, A. H., Kim, J., & Schimmelbusch, H. (2002). The attributes adolescents associate with peer popularity and teacher preference. *Journal of School Psychology, 40*, 143-165. doi:10.1016/S0022-4405(02)00092-4
- Hawley, P. H. (2003). Strategies of control, aggression, and morality in preschoolers: An evolutionary perspective. *Journal of Experimental Child Psychology, 85*(3), 213-235.
- Hawley, P. H., & Geldhof, G. J. (2012). Preschoolers' social dominance, moral cognition, and moral behavior: An evolutionary perspective. *Journal of Experimental Child Psychology, 112*, 18-35. doi:10.1016/j.jecp.2011.10.004
- Hawley, P. H., Little, T. D., & Card, N. A. (2008). The myth of the alpha male: A new look at dominance-related beliefs and behaviors among adolescent males and females. *International Journal of Behavioral Development, 32*, 76-88. doi:10.1177/0165025407084054
- Hawley, P. H., & Vaughn, B. E. (2003). Aggression and adaptive functioning: The bright side to bad behavior. *Merrill-Palmer Quarterly, 49*, 239-242. doi:10.1353/mpq.2003.0012
- Heidgerken, A. D., Hughes, J. N., Cavell, T. A., & Willson, V. L. (2004). Direct and indirect effects of parenting and children's goals on child aggression. *Journal of Clinical Child & Adolescent Psychology, 33*, 684-693. doi:10.1207/s15374424jccp3304_4
- Huisman, M., Oldehinkel, A. J., de Winter, A., Minderaa, R. B., De Bildt, A., Huizink, A. C., . . . Ormel, J. (2008). Cohort profile: The Dutch TRacking Adolescents Individual Lives Survey; TRAILS. *International Journal of Epidemiology, 37*, 1227-1235. doi:10.1093/ije/dym273
- Kruglanski, A. W., & Köpetz, C. (2009). What is so special (and non-special) about goals? A view from the cognitive perspective. In G. B. Moskowitz & H. Grant (Eds.), *The psychology of goals* (pp. 27-55). New York, NY: Guilford.
- LaFontana, K. A., & Cillessen, A. H. N. (2002). Children's perceptions of popular and unpopular peers: A multimethod assessment. *Developmental Psychology, 38*, 635-647. doi:10.1037//0012-1649.38.5.635
- Lease, A. M., Kennedy, C. A., & Axelrod, J. L. (2002). Children's social constructions of popularity. *Social Development, 11*, 87-109. doi:10.1111/1467-9507.00188
- Lease, A. M., Musgrove, K. T., & Axelrod, J. L. (2002). Dimensions of social status in preadolescent peer groups: Likeability, perceived popularity, and social dominance. *Social Development, 11*, 508-533. doi:10.1111/1467-9507.00213
- Lindenberg, S. (2006). Prosocial behavior, solidarity, and framing processes. In D. Fetchenhauer, A. Flache, A. P. Buunk, & S. Lindenberg (Eds.), *Solidarity and prosocial behavior: An integration of sociological and psychological perspectives* (pp. 23-44). New York, NY: Springer.
- Lindenberg, S. (2008). Social rationality, semi-modularity and goal-framing: What is it all about? *Analyse & Kritik, 30*, 669-687.
- Lindenberg, S. (2013). Social rationality, self-regulation and well-being: The regulatory significance of needs, goals, and the self. In R. Wittek, T. A. B. Snijders, & V. Nee (Eds.), *Handbook of rational choice social research* (pp. 72-112). Stanford, CA: Stanford University Press.

- Lindenberg, S., & Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behavior. *Journal of Social Issues, 63*, 117-137. doi:10.1111/j.1540-4560.2007.00499.x
- Mayeux, L., Sandstrom, M. J., & Cillessen, A. H. N. (2008). Is being popular a risky proposition? *Journal of Research on Adolescence, 18*, 49-74. doi:10.1111/j.1532-7795.2008.00550.x
- Moreno-Murcia, J. A., Sicilia, A., Cervello, E., Huéscar, E., & Dumitru, D. C. (2011). The relationship between goal orientations, motivational climate and self-reported discipline in physical education. *Journal of Sports Science & Medicine, 10*, 119-129.
- Muthén, L. K., & Muthén, B. O. (2010). *Mplus User's Guide*. Seventh Edition. Los Angeles, CA: Muthén & Muthén.
- Ojanen, T., Aunola, K., & Salmivalli, C. (2007). Situation-specificity of children's social goals: Changing goals according to changing situations? *International Journal of Behavioral Development, 31*, 232-241. doi:10.1177/0165025407074636
- Ojanen, T., Grönroos, M., & Salmivalli, C. (2005). An interpersonal circumplex model of children's social goals: Links with peer-reported behavior and sociometric status. *Developmental Psychology, 41*, 699-710. doi:10.1037/0012-1649.41.5.699
- 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. doi:10.1177/0272431698018002001
- Poorthuis, A. M. G., Thomaes, S., Denissen, J. J. A., Van Aken, M. A. G., & De Castro, B. O. (2012). Prosocial tendencies predict friendship quality, but not for popular children. *Journal of Experimental Child Psychology, 112*, 378-388. doi:10.1016/j.jecp.2012.04.002
- Rasinski, K. A., Visser, P. S., Zagatsky, M., & Rickett, E. M. (2005). Using implicit goal priming to improve the quality of self-report data. *Journal of Experimental Social Psychology, 41*, 321-327. doi:10.1016/j.jesp.2004.07.001
- Renshaw, P., & Asher, S. (1983). Children's goals and strategies for social interaction. *Merrill-Palmer Quarterly, 29*, 353-374.
- Sijtsema, J. J., Veenstra, R., Lindenberg, S. M., & Salmivalli, C. (2009). Empirical test of bullies' status goals: Assessing direct goals, aggression, and prestige. *Aggressive Behavior, 35*, 57-67. doi:10.1002/ab.20282
- Steg, L., Perlaviciute, G., Van der Werff, E., & Lurvink, J. (2014). The significance of hedonic values for environmentally-relevant attitudes, preferences and actions. *Environment & Behavior, 46*, 163-192. doi:10.1177/0013916512454730
- Tamir, M., Mitchell, C., & Gross, J. J. (2008). Hedonic and instrumental motives in anger regulation. *Psychological Science, 19*, 324-328. doi:10.1111/j.1467-9280.2008.02088.x
- Troop-Gordon, W., Visconti, K. J., & Kuntz, K. J. (2011). Perceived popularity during early adolescence: Links to declining school adjustment among aggressive youth. *Journal of Early Adolescence, 31*, 125-151. doi:10.1177/0272431610384488
- Tucker, J. S., Green, H. D., Zhou, A. J., Miles, J. N. V., Shih, R. A., & D'Amico, E. J. (2011). Substance use among middle school students: Associations with

- self-rated and peer-nominated popularity. *Journal of Adolescence*, 34, 513-519. doi:10.1016/j.adolescence.2010.05.016
- Vaillancourt, T., & Hymel, S. (2006). Aggression and social status: The moderating roles of sex and peer-valued characteristics. *Aggressive Behavior*, 32, 396-406. doi:10.1002/ab.20138
- Veenstra, R., Lindenberg, S., Oldehinkel, A. J., De Winter, A. F., Verhulst, F. C., & Ormel, J. (2008). Prosocial and antisocial behavior in preadolescence: Teachers' and parents' perceptions of the behavior of girls and boys. *International Journal of Behavioral Development*, 32, 243-251. doi:10.1177/0165025408089274

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