Motivation and Perceived Control in Early Adolescent Friendships:

Relations with Self-, Friend-, and Peer-reported Adjustment

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Abstract

Motivation is assumed to influence behaviors via perceived agency over goal pursuits, but empirical research integrating motivation and action-control processes in social development is close to nonexistent. We applied this perspective to the study of early adolescent friendships by examining motivation for and perceived control (ability and effort) over establishing and maintaining friendships in association with adolescents' emotional adjustment, friend-reported friendship closeness, and peer-reported social adjustment. Participants were 648 early adolescents (12-14 years). As expected, intrinsic friendship motivation was associated with perceived ability and effort in the self as well as positive adjustment, whereas extrinsic motivation was associated with relying on others in friendship tasks and poor adjustment. Motivation was also directly related to adjustment and the observed associations differed by gender. The integrated motivation-action control model was supported in terms of adolescent emotional adjustment and friendship quality.

Keywords: motivation, friendship, peer-relationships, social competence

Motivation and Perceived Control in Early Adolescent Friendships:

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According to action control theory (Kuhl, 1982), behaviors and adjustment outcomes are influenced by motivation and perceived control over the goal pursuit process. In this view, motivation is assumed to elicit particular goals for behaviors and perceived control over the goal pursuit process is assumed to mediate motivational effects on behaviors and adjustment. This motivation-action control perspective has received considerable attention in the academic domain where children's motivational orientations predict their academic achievement (Kiefer & Ryan, 2008; Wentzel, 2002) with agency beliefs for ability and effort (i.e., perceived control) over school work mediating these associations (Walls & Little, 2005). However, motivation and goal pursuit processes are less examined in the study of *social* development traditionally focused on cognitive and behavioral skills rather than motives underlying social interaction. In this study, we applied the motivation-action control perspective to the social domain by examining adolescent motives for and perceived control over establishing and maintaining friendships.

During early adolescence, friendship establishment becomes a core activity for personal development (Buhrmester, 1996). Friendships provide an arena to practice social skills and may also offset adjustment difficulties (Asher, Parker, & Walker, 1996). Thus, understanding psychological processes contributing to friendships is important to understanding adjustment in early adolescence. The Self-Determination Theory, SDT (Deci & Ryan, 2000) emphasizes motivational orientations as causes of behaviors, whereas the theory of personal agency (Baltes, 1997; Little, 1998; Skinner, Chapman, & Baltes, 1988) highlights the role of perceived control over one's actions in goal pursuits. Collectively, these theories provide an integrated framework in which perceived control over goal pursuits is expected to mediate motivational effects on

behaviors and adjustment. We examined the utility of this action-control model in friendship establishment and maintenance, assumed to be affected by ability and motivation (Asher, et al., 1996; MacEvoy & Asher, 2012). For instance, difficulty in forming and maintaining friendships may stem from low genuine desires to establish friendships, which may also be related to low perceived control in friendship tasks. Examining friendship motivation and perceived control was expected to increase understanding of adolescent personal and social adjustment.

Self-Determination and Adolescent Friendships

According to SDT (Deci & Ryan, 2000), intrinsically motivated actions are 'owned' by the individual and are inherently satisfying. In contrast, actions performed for external reasons, such as gaining rewards or acting on external pressure, reflect external locus of control and predict adjustment difficulties (Deci & Ryan, 2000). These accounts suggest that motivational orientations vary in their implications for adjustment as well as in the degree to which they elicit perceived control over the goal pursuit process. Between the extreme intrinsic and extrinsic orientations in the SDT are: integrated motivation reflecting goals that are in congruence with one's values and needs, identified motivation reflecting readily adopted but not fully owned goals, and introjected motivation encompassing only nominally adopted and endorsed goals (Deci & Ryan, 2000). As consciously regulated orientations, integrated, identified, and introjected motivation styles are mostly positively related to adjustment and more strongly related to self-regulation and performance outcomes than intrinsic and extrinsic motivation (Koestner & Losier, 2002; Walls & Little, 2005). This study focuses on intrinsic and extrinsic motivation. Integrated motivation may not be evident until late adolescence or adulthood (Vallerand, Brière, Blanchard, & Provencher, 1997) and to the best of our knowledge, only one existing study suggests that 12-15 year-olds are capable of distinguishing between introjected

and identified motivation in the context of free time activities (Baldwin & Caldwell, 2003). We thus focus on intrinsic and extrinsic friendship motivation, with the additional goal of exploring whether youth differentiate between introjected and identified motivation in friendships.

Most research on the SDT has been conducted in adults, but findings in children indicate that intrinsic motives for school work predict higher academic achievement and well-being while extrinsic academic motivation is negatively related to adjustment (Walls & Little, 2005). In this study, we examined motivational orientations described in the SDT in terms of adolescent motives for establishing and maintaining friendships. In early adolescence, friendships are actively pursued to satisfy growing desires for intimacy (Buhrmester, 1990). Thus, friendship motives are likely mostly intrinsic in nature, reflecting inherent desires for and enjoyment of friendships and positively related to adjustment (Deci & Ryan, 2000). Adolescent need for relatedness (Véronneau, Koestner, & Abela, 2005) and adult intrinsic need satisfaction in friendships (Demir & Özdemir, 2010) are positively related to well-being and friendship quality. Thus, also intrinsic friendship motivation is likely positively related to emotional adjustment and friendship quality. Adjustment in friendships may also reflect adjustment in the broader peer group. For instance, emotional adjustment and friendship quality are both positively related to peer acceptance (Newcomb, Bukowski, & Pattee, 1993). Thus, intrinsic friendship motivation reflecting such characteristics may also be positively related to acceptance by mainstream peers.

Extrinsic motives for establishing and maintaining friendships, such as forming these relationships because of perceived pressure from parents or teachers, may also motivate adolescent friendships. Concerns for social appearance are particularly pronounced in early adolescence where self-consciousness and social comparisons are elevated as compared to later adolescence (Rankin, Lane, Gibbons, & Gerrard, 2004). Since adolescent friendships are socially

and developmentally normative (Berndt, 1982; Bukowski, Hoza, & Boivin, 1993), they may elicit concerns for appearing socially normative in the eyes of others. Such motives, in turn, are extrinsic rather than intrinsic in nature. Controlled by external circumstances, extrinsic motivation is related to poor personal and social adjustment (Deci & Ryan, 2000) and may reflect adjustment difficulties also in adolescent friendships, which inherently involve intrinsic closeness, mutual trust, and reciprocity (Buhrmester, 1996). For instance, youth establishing and maintaining friendships for extrinsic reasons may experience little need satisfaction from friendship-related activities and thus fare worse emotionally and in friendships. Moreover, because low friendship quality and emotional difficulties are related to behavioral difficulties like aggression (Fanti, Brookmeyer, Henrich, & Kuperminc, 2009), extrinsic friendship motivation may also be negatively related to social adjustment in the broader peer group.

Associations of introjected and identified friendship motives with adjustment may depend on the extent to which these orientations are differentiated at this age as well as where they situate along the intrinsic to extrinsic motivation continuum in the friendship domain. For instance, identified motives are likely to reflect relatively more intrinsic reasons for friendship functioning than introjected motives and thus may have more positive effects on adolescent adjustment than the latter motivational style. As mentioned previously, our goal was to explore whether early adolescents differentiate between identified and introjected friendship motivation and how these constructs may be related to personal and social adjustment.

Personal Agency: Linking Motivation to Adjustment via Perceived Control

From an integrated motivation-action control perspective (Bandura, 2001; Kuhl, 1982; Skinner, et al., 1988), perceived control (i.e., personal agency) mediates motivational effects on action. Personal agency reflects "the sense of personal empowerment, which involves both

knowing and having what it takes to achieve one's goals" (Little, Hawley, Henrich, & Marshland, 2002, p. 390) and is positively associated with ambition and endurance in goal pursuits (see Little et al., 2002). The sense of personal agency is embodied in action-control beliefs encompassing judgments about the utility of various means to reach a certain goal (means-ends beliefs), beliefs about whether these means are personally available (agency beliefs), and perceptions of the degree to which one believes that goals can be attained (control expectancy beliefs; for a review, see Skinner, 1996). These beliefs can be assessed in terms of intra-self agency, or perceived ability and effort in the self to accomplish goals, as well as extra-self agency reflecting perceived ability to utilize others in goal pursuits (Little, 1998).

In SDT, intrinsic motives are thought to give rise to autonomous actions and extrinsic motives to externally driven actions (Deci & Ryan, 2000). Accordingly, intrinsic and identified motives for school work predict higher grades and well-being via perceived effort in the self, whereas introjected motivation reflecting only nominally adopted goals is negatively related to perceived effort in the self (Walls & Little, 2005). However, little is known about integrated motivation-action control processes in social development. In light of the self-determination and action-control theories, intrinsic friendship motives can be expected to foster well-being and positive adjustment via perceived control in the self (intra-self agency), whereas extrinsic friendship motives are likely related to poor emotional and social adjustment via reliance on peers, parents, or teachers (extra-self agency) in friendship tasks.

However, while extra-self agency is related to poor adjustment in academic achievement tasks, the role of this construct may be more complex in the social domain where goals may be sought after via multiple means (Dodge, Asher, & Parkhurst, 1989) and utilizing resources both within and outside the self may reflect optimal adjustment (Baltes, 1997). Because we examined

extra-self agency in terms of using the assistance of parents and teachers when establishing and maintaining friendships, this construct may partially reflect perceived social support, which is positively related to emotional and social adjustment (Rueger, Malecki, & Demaray, 2010; Wentzel, 1994). Moreover, extra-self agency in friendships may reflect positive adjustment especially for girls who are less likely than boys to attribute success to their own ability (Stipek & Gralinski, 1991) and more likely to value getting help and support from others (Eschenbeck, Kohlmann, & Lohaus, 2007; Stetsenko, Little, Gordeeva, Grasshof, & Oettingen, 2000). Boys, in turn, are generally more assertive in social interaction than girls (Rose & Rudolph, 2006). Thus, it may be that perceived ability in the self to accomplish friendship tasks (intra-self agency) reflects positive adjustment and extra-self agency negative adjustment particularly for boys.

Likewise, in line with Gilligan's developmental theory of gender differences (1982), girls develop more intimate friendships involving more sharing than boys and experience more need satisfaction in intimate relationships (C. U. Frey & Röthlisberger, 1996; Véronneau, et al., 2005). Thus, girls may display higher levels of intrinsic friendship motivation than boys and this motivational style may also be more relevant for adjustment in girls than boys (see also Veronneau et al., 2005). Assessing rather than controlling for gender differences in this study was expected to provide the most detailed information on the data.

Present Study

Inspired by increasing research on motivation in social development and integrated motivation-action control perspectives in the academic domain (Walls & Little, 2005), this study examined friendship motivation and perceived control over friendship-related actions in relation to adolescent emotional adjustment (positive and negative affect), friend-reported friendship closeness, and social adjustment in the broader peer group (peer-reported overt and relational

aggression, peer acceptance, rejection, and perceived popularity). In light of existing research (Deci & Ryan, 2000; Demir & Özdemir, 2010; Véronneau, et al., 2005), motivation and perceived control were expected to evidence the strongest and clearest associations with emotional adjustment and friendship closeness. Intrinsic friendship motivation was expected to be positively related to positive affect and friendship closeness via intra-self agency, and extrinsic motivation to negative affect and lower friendship closeness via extra-self agency.

Additionally, we explored whether friendship motivation and personal agency are meaningfully related to adolescent social adjustment among peers in an encompassing manner. Because early adolescent friendships are developmentally critical and socially normative (Bukowski, et al., 1993), adjustment in this domain may also be related to adjustment among peers more broadly. Peer acceptance reflects positive adjustment in terms of sociable behaviors and emotional well-being (Brendgen, Markiewicz, Doyle, & Bukowski, 2001; Newcomb, et al., 1993) and may thus be positively related to intrinsic friendship motivation, emotional adjustment (Veronneau et al., 2005), and the number and quality of friendships (Newcomb et al., 1993). Peer rejection and overt and relational aggression, in turn, are generally associated with poorer emotional and social adjustment (Card, Stucky, Sawalani, & Little, 2008; Newcomb, et al., 1993). Because extrinsic motivation is generally related to emotional and behavioral adjustment difficulties (see Deci & Ryan, 2000), it may also be related to peer rejection and aggression.

As a measure of influential position in the peer group, perceived popularity reflects a combination of prosocial and aggressive characteristics (Mayeux, Sandstrom, & Cillessen, 2008) and was included to this study to explore its relations with the motivation and agency constructs. On one hand, perceived popularity may be negatively related to intrinsic and positively to extrinsic friendship motivation as popular youth may be more concerned about social appearance

than establishing and maintaining close relationships with individual peers (Adler & Adler, 1995). On the other, because perceived popularity is positively related to prosocial behaviors as well as peer acceptance (Dijkstra, Cillessen, Lindenberg, & Veenstra, 2010), it may also be positively related to intrinsic friendship motivation. We sought to explore these associations.

On the whole, intra-self agency was expected to be positively and extra-self agency negatively related to adjustment. However, since extra-self agency in friendship tasks may partially reflect perceived social support, alternative associations involving this construct were also evaluated. We also examined identified and introjected friendship motivation. Since these constructs are still rarely examined in youth, we explored whether early adolescents differentiate between them in the friendship context and evaluated their utility in the proposed motivation-action control model. Gender differences in all examined associations were evaluated.

Method

Participants

Data were collected in grades 7 and 8 of middle school (12-14 years) in a medium-sized urban, residential community in the Northeast U.S. The sample was representative of this ethnically and socieconomically diverse district (64% European Americans, 17% African Americans, 6% Hispanic, and 13% Other). Active parent and child consent were obtained prior to the data collection; the overall participation rate was 80%. To assess friendship closeness as reported by adolescents' genuine best friends, we utilized a sub-sample of 648 early adolescents (345 girls) in the present study These 648 participants had at least one reciprocated friend, which enabled us to examine friend-reported friendship quality considered essential for the present study. The data were collected at school during school hours in three 45min sessions separated by 2-4 days. Approximately 8% of the data were missing and were imputed using the

Expectation Maximization, EM, algorithm in SAS Proc MI (SAS Institute).

Measures

      Friendship motivation and perceived control. The Multi-dimensional Control Agency

Means-ends (MultiCAM; Little & Wanner, 1997) instrument was used to measure friendship

motivation and perceived control (personal agency) using a five point rating scale (1 = *I*

completely agree, 5 = *I completely disagree*). The measures have been shown to produce reliable

and valid data (Walls & Little, 2005). To assess the connectedness of adolescent motives for and

perceived control over friendship functioning, items in both the motivational and agency

constructs were measured with respect to the frames: "For making new friends", "For getting a

friend to do something together with you", and "For keeping a good friend." Example items for

each scale are provided below; the complete list of items is available from the authors.

      A total of 12 items in conjunction with 3 frames (36 items altogether) were used to assess

friendship motivation. The items were adapted from the Reasons Survey (Ryan & Connell,

1989), the Achievement Goals Questionnaire (Elliot & Sheldon, 1997), and partly developed by

our research team with respect to the original work by Deci and Ryan (2000). An example

item/frame combination from the intrinsic scale reads: [Frame] "Why do you make new

friends?" [item] "Is it because you like to do it?" Two items with respect to three frames were

used to assess intrinsic motivation (a total of 6 items; α = .73), and six items with respect to three

frames were used to assess extrinsic motivation (at total of 18 items; α = .92). Example items

from the extrinsic scale read: "Is it because you want to make your parents happy?"; "Is it

because you want to get praise from your teachers?"

      Items used to measure identified and introjected motivation were highly correlated across

the two constructs (r = .90) so they were combined into an single construct (12 items with

respect to the three frames; a total of 36 items; α = .75) measuring identified/introjected motivation. The items used to measure motivation were parceled into combined units of indicators used to represent the latent constructs. This procedure provides optimally reliable indicators of latent constructs and also has several other advantages (Little, Cunningham, Shahar, & Widaman, 2002).

Perceived control was measured in terms of agentic beliefs about perceived control in the self (18 items) and outside of the self (12 items) when establishing and maintaining friendships. Following the coding guide of the instrument (Little & Wanner, 1997), individual items were aggregated into parcels to represent two factors: (a) Intra-self agency reflecting the attributes of the individual (ability, effort, sociability; α = .95) and (b) Extra-self agency reflecting perceived reliance on others (parents, teachers; α = .88). An example item/frame combination from Intra-self agency construct reads: [Frame] "When making new friends?" [item] "Can you work hard enough at it?" An Example item/frame combination from extra-self agency construct reads: [Frame] "When making new friends?" [item] "Can you get your parents to help you?"

Positive and Negative Affect. The Inventory of Felt Emotion and Energy in Life (I FEEL; Lee, Dill & Little, 2010), developed on the basis of the Positive and Negative Affect Schedule, PANAS (Watson, Clark, & Tellegen, 1988), was used to measure positive and negative affect (1 = *I completely agree*, 5 = *I completely disagree*). In response to the frame "In the past couple of weeks, I have felt…", the participants rated six items (α = .91) measuring positive affect (e.g., "cheerful", "glad", "happy") and six items (α = .91) measuring negative affect (e.g., "sad", "down"," unhappy"). Following the coding guide, these items were parceled into three indicators of positive affect and three indicators of negative affect**.**

Friendship closeness. Friendship closeness was assessed with a friendship intimacy

scale from the friendship inventory by Brendgen and colleagues (2000), consisting of ratings of friendship characteristics on a Likert scale (*never, seldom, often, always*). The six items (e.g., "Do you share secrets with each other?"; $\alpha = .80$) were parceled into three manifest indicators of friendship closeness. Adolescents were asked to nominate up to three best friends in school and to evaluate the characteristics of their relationship with each of them. These nominations were used to assess friend-reported friendship closeness. Specifically, friendship closeness for the focal child was based on reports of closeness in that friendship *by the child's friend*. When more than one nomination of the focal child was reciprocated (74.4% of the participants), perceptions about the focal child were averaged across the nominators to obtain an overall score of friendship closeness for the focal child.

Aggression. Participants nominated up to 10 peers at school in the same grade level who fit the description of overt and relational aggression (Little, Jones, Henrich, & Hawley, 2003). Overt aggression was measured with two parcels reflecting the mean of items assessing instrumental and reactive overt aggression ($\alpha = .87$). Relational aggression was measured with two parcels reflecting the mean of instrumental and reactive relational aggression ($\alpha = .95$). The variables were standardized by grade level to control for differing numbers of nominations.

Social status. Participants were asked to nominate up to 10 peers at school in the same grade level for each item. Peer acceptance was measured with items "Who do you like the most?" and "Who do you like to go out with?" ($\alpha = .89$). Peer rejection items were: "Who do you like the least?" and "Who do you not like to hang out with?" ($\alpha = .82$). Finally, items for perceived popularity were: "Who do the others like the most?" and "Who is the most popular?" ($\alpha = .94$). Measuring each construct with two items enabled us to form latent variables for these constructs to control for measurement error. To control for the varying number of nominators in

each grade, each item was first standardized by grade level (Brendgen et al., 2000).

Results

Measurement Model

Structural equation modeling was conducted with Lisrel 8.8 (Jöreskog & Sörbom, 1993).
The scale for the latent variables was set so that a set of factor loadings for each construct was
constrained to average 1.0 and the set of indicator intercepts was constrained to average 0 (Little,
Slegers, & Card, 2006), which yielded directly interpretable latent construct means. Given that
the Chi-square fit statistics is highly affected by the sample size, model fit was evaluated with
the Root-Mean-Square Error of Approximation (RMSEA) the Non-Normed Fit Index (NNFI) and
the Comparative Fit Index (CFI).

An unconstrained confirmatory factor analysis(CFA) model including the three
motivation constructs, the two agency constructs, and the adjustment variables, fit the data well,
$\chi^2_{(1076, N=648)} = 1352.83$, RMSEA= $.025_{(Confidence\ Interval\ =\ .020\ to .030)}$, CFI = .99, NNFI = .99. To
evaluate whether constructs were measured equivalently for boys and girls, we evaluated a
model in which the factor loadings and intercepts were constrained equal across genders. This
model also fit the data well $\chi^2_{(1122, N=648)} = 1499.5051$, RMSEA = $.028_{(.024|.033)}$, CFI = .98, NNFI
=.98, and comparably to the unconstrained model (i.e., the CFI and NNFI estimates changed
only .01 and the RMSEA of the constrained model fit in the confidence interval of the
unconstrained model; Cheung & Rensvold, 2002). It was thus concluded that the latent
constructs were similarly measured for boys and girls.

An omnibus test indicated gender differences in the latent means, so we performed nested
model comparisons to compare the means of each construct between boys and girls. As can be
seen in Table 1, boys scored higher in extrinsic motivation, identified motivation, overt

aggression, and marginally higher in rejection than girls; in contrast, girls scored higher in intrinsic motivation, peer acceptance, friendship closeness, and relational aggression, and marginally higher in negative affect than boys. The correlation matrices among the constructs by gender are available from the authors upon request.

Directional Relations Among the Constructs

A multiple group comparison indicated differences in the latent variances across the genders ($\Delta\chi^2_{(14, N=648)} = 50.5425$, $p < .001$) and therefore, the latent regression analyses were conducted in a standardized metric. A series of models were specified to examine expected direct and indirect associations among the variables. Several gender differences were observed in these associations and thus the models were fit separately for boys and girls. The final multiple-group model in which the relations were estimated separately for boys and girls fit the data well (NNFI = .98, CFI = .98, RMSEA = $.024_{(.019|.030)}$) and did not differ significantly from the baseline model in which all latent associations were freely estimated, $\Delta\chi^2_{(49, N=648)} = 25.49$, $p > .50$. The constructs within each level of assessment (i.e., motivation, personal agency, and adjustment) were allowed to correlate. The final model is depicted in Figures 1 (boys) and 2 (girls).

As expected, intrinsic motivation was associated with intra-self agency and extrinsic motivation with extra-self agency for both genders. Furthermore, intrinsic motivation was positively associated with extra-self agency and extrinsic motivation with intra-self agency, while controlling for the larger expected associations of these constructs with the agency constructs. For boys, extrinsic motivation was directly positively related to both aggression variables and intrinsic motivation was directly positively related to perceived popularity and peer acceptance (see Figure 1). In addition, intra-self agency was associated with positive affect for boys. Examination of the indirect associations indicated that intrinsic motivation was related to

positive affect via intra-self agency, $\beta = .38$, $z = 9.44$, but this indirect path for extrinsic

motivation was nonsignificant, $\beta = .06$, $z = 1.54$. For girls, intrinsic and identified/introjected

motivation were positively associated with several positive indices of adjustment (see Figure 2).

Moreover, extra-self agency was related to friendship closeness and negative affect for girls.

Examination of the indirect paths indicated that intrinsic, $\beta = -.04$, $z = -2.19$, and extrinsic, $\beta = -$

$.07$, $z = -2.47$, motivation were both associated with lower negative affect via extra-self agency.

However, only extrinsic motivation was related to lower friendship closeness via extra-self

agency, $\beta = -.06$, $z = -2.13$.[1]

Gender differences in the above paths were further evaluated via nested-model

comparisons, which revealed differences in 13 of the 18 paths (expressed as z-scores for the

difference in the following). The path from intrinsic motivation to intra-self agency was stronger

for girls than for boys, $z = -1.96$, $p = .05$. Furthermore, identified/introjected motivation was

related to higher levels of intra-self agency, $z = -2.06$, $p = .04$, and intrinsic motivation directly

with positive affect, $z = -5.88$, $p < .01$, friendship closeness, $z = -2.18$, $p = .03$, overt aggression,

$z = -2.74$, $p < .01$, and peer rejection, $z = -3.07$, $p < .01$, for girls only. Intrinsic motivation was

directly positively related to perceived popularity only for boys, $z = -2.11$, $p = .03$.

Identified/introjected motivation, in turn, was directly related to peer acceptance, $z = -3.52$, $p <$

$.01$, and perceived popularity, $z = -3.90$, $p < .01$, only for girls. Extrinsic motivation was directly

related to negative affect, $z = -3.22$, $p < .01$, and relational aggression, $z = -2.93$, $p < .01$, only for

girls, but to overt aggression only for boys, $z = -2.93$, $p < .01$. Finally, intra-self agency was

related to positive affect, $z = -5.08$, $p < .01$, for boys, whereas extra-self agency was negatively

related to friendship closeness, $z = -4.79$, $p < .01$, and negative affect, $z = -1.98$, $p = .05$, for girls.

To evaluate other interpretations of the data, we also examined whether motivation mediated

associations among personal agency and adjustment. Such associations were not observed.

Discussion

According to action-control theory, behaviors and adjustment outcomes are influenced by both motivation and perceived control over the goal pursuit process and the latter is thought to mediate motivational effects on action (Bandura, 2001; Kuhl, 1982; Little, Snyder, & Wehmeyer, 2006). Accordingly, children's motivational orientations for school work are related to achievement and well-being at school via perceived control over school work (Walls & Little, 2005). However, little is known about integrated motivation and action control processes in the social domain. We applied this theoretical framework to the study of adolescent friendships by examining early adolescent motives for and perceived control over establishing and maintaining friendships in relation to emotional adjustment, friend-reported friendship closeness, and various indices of peer-reported social adjustment. Motivation and perceived control over friendship tasks were meaningfully associated with adjustment. However, the integrated motivation-action control model was supported only in terms of adolescent emotional adjustment and friendship closeness, and most observed associations among the variables differed by gender.

Motivation in Adolescent Friendship Establishment

Consistent with the developmental progression of friendships (Buhrmester, 1990), adolescents reported higher levels of intrinsic than extrinsic motives for establishing and maintaining friendships. This finding supports the idea of friendships as socially and emotionally important relationships in early adolescence. It also suggests that they are sought mostly for inherent enjoyment of them at this stage of development (see also Buhrmester, 1990. However, in line with findings on the pronounced role of self-consciousness and social comparison in early adolescence (Rankin, et al., 2004), extrinsic appearance related friendship motives were also

meaningfully associated with perceived control over friendship tasks and adolescent adjustment. This reinforces the idea of friendships as socially normative in early adolescence (Berndt, 1982; Bukowski, et al., 1993) and suggests that these relationships may be pursued not only for intrinsic motives, but also for appearing normative in the eyes of authority figures like parents and teachers.

In line with other established gender differences in adolescent friendships, our findings suggest that motives for establishing and maintaining friendships also differ by gender. In agreement with the pronounced role of social relational orientation and inherent need satisfaction of relatedness in girls over boys (Rose & Rudolph, 2006; Véronneau, et al., 2005), girls reported higher intrinsic friendship motivation than boys. Moreover, while girls may be generally more susceptible than boys to social approval concerns, boys reported higher levels of extrinsic appearance related friendship motives than girls. Given that girls perceive more social support from peers than parents while the reverse is true for boys (C. U. Frey & Röthlisberger, 1996), it may be that adolescent boys are more likely than girls to establish and maintain friendships for pleasing authority figures like parents and teachers. Alternatively, it also appears plausible that friendships are intrinsic in nature for adolescent girls to the extent to which they rarely establish these relationships for reasons other than inherent enjoyment of them. That is, adolescent boys may not display particularly high extrinsic friendship motivation, but girls may display very low levels of extrinsic friendship motivation (as reflected in the mean estimates reported in Table 1).

Integrated and introjected friendship motivation were not distinct constructs in the present sample. While early adolescents have been found to differentiate between these motivational orientations in free time activities (Baldwin & Caldwell, 2003), it may be that the difference between integrated and introjected motives in the friendship context is less clear and

too challenging for early adolescents. Overall, these motivational styles are less related in later adolescence; $r = .28$ (Pelletier, Fortier, Vallerand, & Brière, 2001), and unrelated in adults; $r = .04$ (Losier, Perreault, Koestner, & Vallerand, 2001), suggesting that differentiation between them may be related to the development of cognitive ability mostly beyond early adolescence.

Motivation and Perceived Control: Toward an Integrated Perspective

As expected, the more adolescents established friendships for inherent enjoyment, the more they felt that they could accomplish this task by means that are internal to the self. Similarly for girls, identified/introjected motivation was positively associated with intra-self agency. Also in accord with our hypotheses, the more adolescents pursued friendships for external reasons, the more they relied on others in this activity. These observations support the idea of intrinsic motivation as internalized and extrinsic motivation as externalized regulation (Deci & Ryan, 2000). They also extend empirical work in the area by associating motivational orientations with action-control constructs in the context of adolescent friendships. However, the findings also indicated that intrinsic friendship motivation was weakly positively associated with extra-self agency as was extrinsic motivation with intra-self agency, after controlling for the stronger expected associations among these constructs. These subordinate relations may reflect the general effect of being motivated to action. That is, as opposed to amotivation (Deci & Ryan, 2000), motivation for action regardless of its source may engage one in action-control regulation that involves all of the various types of agency.

For the most part, intrinsic friendship motivation was positively and extrinsic motivation negatively associated with adolescent adjustment. However, these and other observed associations differed by gender. Overall, friendship motivation and perceived control were more often associated with social adjustment for girls than boys. Intrinsic friendship motivation was

especially predominant in its effects on adjustment for girls, being related to emotional well-being, friendship closeness, and several peer-reported adjustment indices. These observations are consistent with the relative importance of peer affiliation for girls over boys (Ojanen, Grönroos, & Salmivalli, 2005) and underline the importance of genuine relatedness with peers in personal and social adjustment of early adolescent girls. Intrinsic motives, however, were positively related to adjustment for boys in terms of peer acceptance and perceived popularity among peers. This pattern of associations supports the positive effects of intrinsic motivation on adjustment (Deci & Ryan, 2000) and extends this perspective to adolescent friendships and social adjustment among peers.

Extrinsic friendship motivation was related to peer-identified relational aggression for both genders. Unlike overt aspects of aggression, relational aggression is positively related to social self-efficacy and social intelligence (Andreou, 2006; Puckett, Aikins, & Cillessen, 2008), suggesting that although aggressive, youth scoring high on this construct are socially perceptive. This interpretation could partially explain why relational aggression was related to establishing and making friendships for the sake of social appearance-related concerns, particularly as relational aggression is related to perceived rejection and a tendency to attribute hostility in peer interaction (Crick & Grotpeter, 1995). Because relationally aggressive youth may have little trust in peers, experience little genuine closeness with them, and yet have elevated social cognitive skills, they may establish friendships for appearances rather than intrinsic reasons. For boys, overt aggression was also positively related to extrinsic friendship motivation, possibly because overt aggression is gender normative for boys but not girls. Clearly, the present exploratory analyses should be replicated and further evaluated in future research.

Perceived control in the self or intra-self agency was related to positive affect only for

boys. This finding suggests that autonomous action control may contribute to well-being especially for boys who are generally more assertive and self-reliant in social interaction than girls (Rose & Rudolph, 2006). Moreover, this effect was driven by the indirect effect of intrinsic motivation, thus supporting the idea that intrinsic motivation gives rise to internal locus of control (see Deci & Ryan, 2000). Extra-self agency, in turn, was related to social adjustment only for girls. Given that girls are generally more relationally oriented than boys (Rose & Rudolph, 2006), it may be that perceived ability to seek assistance from others in social tasks like friendships activities is more indicative of adjustment for girls than boys. Accordingly, this construct was associated with low levels of negative affect for girls, suggesting that it may partially reflect perceived social support and thus buffer against internalizing difficulties (see e.g., Rueger et al., 2010). Extra-self agency, however, was also associated with lower friendship quality for girls, suggesting that while girls who report high degrees of seeking help from others in friendship tasks also report little negative affect, their friends experience little closeness in these friendships. The latter is consistent with the action control theory (e.g., Little, 1998) and suggests that less autonomous engagement in establishing and maintaining friendships may be associated with lower friendship quality, especially for girls to whom intimacy and affiliation with peers are more important than for boys (Ojanen, et al., 2005; Véronneau, et al., 2005).

The observed indirect effects provide more detailed insights on these data patterns. While extra-self agency in social tasks like establishing and maintaining friendships may be mostly positively associated with adjustment for girls (both intrinsic and extrinsic friendship motives were associated with lower negative affect via this construct for them), it is noteworthy that only extrinsic friendship motivation was associated with poor adjustment (low friendship closeness) via this construct. Therefore, together with the indirect effect of intrinsic motivation on positive

affect for boys, these associations support the integrated motivation action-control perspective and suggest that an integrated assessment of these psychological processes can provide more detailed insights on the establishment and maintenance of adolescent friendships and associated personal and social adjustment.

While mean level gender differences were observed in friendship motivation, boys and girls reported equal levels of intra- and extra-self agency. Thus, gender differences in perceived control over friendship activities may be related to the functions rather than the levels of specific sources of control. Our findings suggest that adolescent boys and girls report equal levels of perceived ability in the self versus seeking assistance from others in friendship tasks, but the former may be especially relevant adjustment indicator for boys and the latter for girls (potentially due to general gender differences in social interaction; see Rose & Rudolph, 2006).

Conclusions, Limitations, and Future Directions

In line with increasing interest on social goals and motivation in adolescent peer interaction (Kiefer & Ryan, 2008; Ojanen, et al., 2005), we observed meaningful associations among early adolescents' motives for establishing and maintaining friendships and their emotional and social adjustment with friends and in the overall peer group. The present findings extend existing research in the SDT framework (Deci & Ryan, 2000) to adolescent friendships and provide an initial attempt to apply an integrated motivation-action control model to the study of social development.

The integrated motivation-action control model was only partially supported by our findings. By and large, the present findings suggest that motivational orientations for establishing and maintaining friendships reflect adolescent adjustment at different levels of the peer ecology (individual, friendship, and the peer group level), but perceived control in this context was

associated only with adolescent emotional adjustment and friendship quality. Conceivably, motivational orientations measured here reflect relatively global dispositions for peer interaction and may thus reflect personal and social adjustment more broadly than perceived control over friendship activities, which may be more closely tied to emotional adjustment and adjustment in the specific task domain (friendship closeness in the present study).

Perceived control over goal pursuits may also be differentially associated with adjustment in the academic versus social domain. Academic tasks are both well defined and continuously challenging by the nature of the curriculum demands and thus action-control processes are constantly called upon in such tasks. Social tasks, in turn, are not as well-defined and may not be explicitly challenging. Assessment of these processes in a context that engenders regular challenge (e.g., friendship tasks including specific challenges) might reveal stronger effects of personal agency on adjustment. Overall, the importance of situation-specific over global assessment of social cognitive and behavioral processes has been acknowledged to gain more detailed insights on social development (Dodge, McClaskey, & Feldman, 1985). Therefore, future research might benefit from assessing motivation and perceived control in specific challenging situations, such as adolescent friendship conflicts, which might also reveal more meaningful associations among personal agency and adolescent adjustment.

Perceived control, or competence, in the self may also predict motivation and task persistence rather than vice versa (Bandura, 1997). The direction of these effects may ultimately depend on the conceptualization of motivation. Specifically, motives or reasons for (*why*) specific tasks likely predict perceived control over goal pursuits, whereas perceived competence may predict motivation when the latter is assessed in terms of goals (*what*) for a given activity. In the present study, we assessed friendship motivation in terms of one's reasons for establishing

and maintaining friendships, reflecting individual differences in motives that may underlie specific goals for adolescent friendships. Future research would benefit from a simultaneous assessment of particular motives for specific goals and the assessment of such goals as previously acknowledged in the study of performance goals (Urdan & Mestas, 2006), which is likely to provide more detailed insights on both the direction of the effects among these constructs and the content of specific motives in social interaction.

Our present assessment was limited to cross-sectional data and thus precludes conclusions about the direction of the effects among the examined constructs, which can be evaluated only in longitudinal data. These associations may also be reciprocal rather than uni-directional; while intrinsic motives may predict increasing levels of autonomous action control, the latter may also further increase intrinsic motivation for a given activity over time. Longitudinal research indicating reciprocal associations among adolescent social cognition and peer group adjustment (Caldwell, Rudolph, Troop-Gordon, & Kim, 2004) further suggests that both friendship motivation and perceived control over these activities may also be affected by adolescent social adjustment over time. Clearly, longitudinal research is needed to evaluate such data patterns in more depth.

Despite the limitations, the present findings support the increasing line of research on motivational factors underlying adolescent peer interaction and provide preliminary insights on the integrated motivation-action control processes in this framework. We applied constructs from SDT and the action-control theory to the context of adolescent friendship and the findings suggests that early adolescents' friendships and their personal and social adjustment are meaningfully associated with their motivational dispositions for establishing and maintaining friendships. From a practical viewpoint, motivational processes may be used in promoting

healthy peer interactions. While altering the motivational base of behavior may seem

challenging, recent intervention research including adolescent social goals suggests that motives

for peer interaction at school may indeed be altered with indicative interventions and such

changes at the psychological level are accompanied by desired changes in behavior (K. S. Frey,

Nolen, Van Schoiack Edstrom, & Hirschstein, 2005).

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Footnote

[1]To evaluate whether friendship motivation was meaningfully associated with adjustment when controlling for friendship quality, the adjustment variables were regressed on the motivation variables while controlling for friend-reported friendship closeness. The findings indicated several significant effects of motivation on adjustment. Among others, intrinsic motivation was positively associated with positive affect and peer acceptance for boys, $\beta = .43$, $p < .001$; $\beta = .25$, $p < .001$, as well as for girls, $\beta = .39$, $p < .001$; $\beta = .16$, $p < .05$. Extrinsic motivation, in turn, was positively associated with negative affect for boys, $\beta = .20$, $p < .001$, and with both overt; $\beta = .16$, $p < .05$, and relational, $\beta = .39$, $p < .001$, aggression for girls.

Table 1

Latent Means (M) and Variances (VAR) of the Constructs for Boys and Girls, Along with Effect Sizes (d) of Gender Differences

| | Boys (*n* = 303) | | | Girls (*n* = 345) | | | | |
	M	VAR		M	VAR	*d*	$\Delta\chi^2_{(df=1)}$	*p*
Intrinsic Motivation	2.88	0.27		3.16	0.29	-0.98	5.41	0.00
Identified/Introjected Motiv.	2.65	0.27		2.53	0.28	0.43	2.49	0.01
Extrinsic Motivation	1.51	0.24		1.32	0.11	1.10	5.28	0.00
Intra-Self Agency	2.29	0.29		2.82	0.30	-1.83	0.79	0.43
Extra-Self Agency	1.65	0.29		1.63	0.29	0.09	0.58	0.56
Positive Affect	2.94	0.38		3.04	0.51	-0.22	1.80	0.07
Negative Affect	1.55	0.33		1.65	0.41	-0.25	1.89	0.06
Closeness	3.03	0.13		3.44	0.10	-3.52	11.44	0.00
Like	-0.07	0.75		0.26	0.77	-0.43	4.38	0.00
Dislike	0.02	0.73		-0.11	0.53	0.21	1.88	0.06
Popularity	-0.01	0.82		0.09	1.04	-0.10	1.25	0.21
Overt Aggression	0.13	0.85		-0.15	0.35	0.48	4.29	0.00
Relational Aggression	-0.09	0.35		0.05	0.66	-0.28	2.43	0.02

Figure 1. Structural relations among friendship motivation, personal agency, and social adjustment indices for boys (*n* = 303). * *p* < .05, ** *p* < .01, *** *p* < .001.
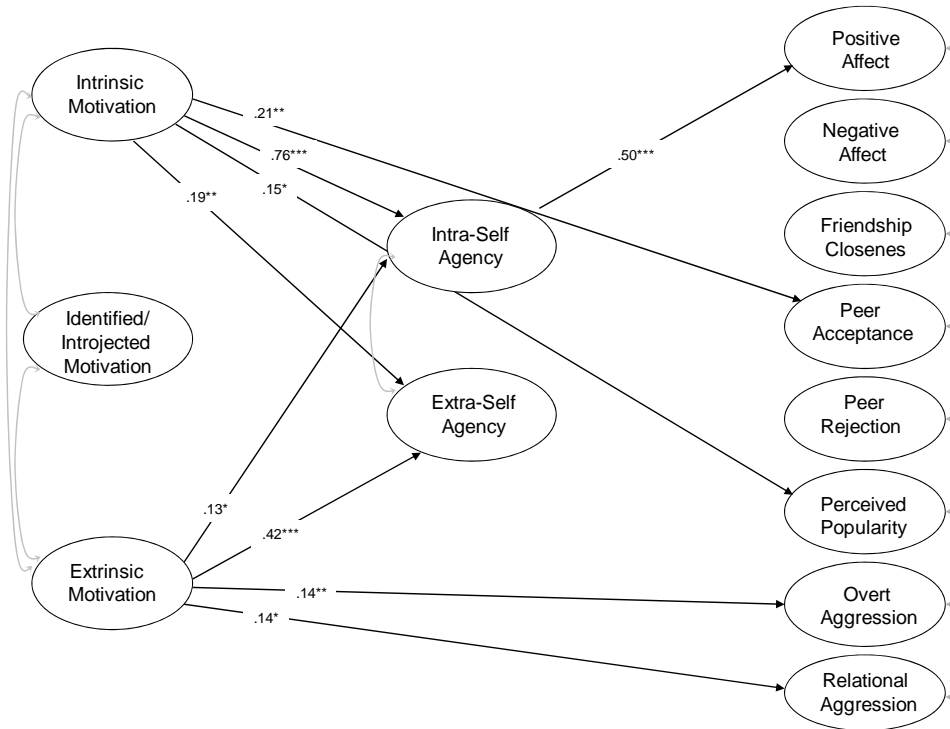

Figure 2. Structural relations among friendship motivation, personal agency, and social adjustment indices for girls (*n* = 345). * *p* < .05, ** *p* < .01, *** *p* < .001.