The myth of the alpha male: A new look at dominance-related beliefs and behaviors among adolescent males and females

Patricia H. Hawley, Todd D. Little and Noel A. Card

International Journal of Behavioral Development 2008; 32; 76
DOI: 10.1177/0165025407084054

International Journal of Behavioral Development
2008, 32 (1), 76–88
http://www.sagepublications.com

ijbd

DOI: 10.1177/0165025407084054

The myth of the alpha male: A new look at dominance-related beliefs and behaviors among adolescent males and females

Patricia H. Hawley and Todd D. Little
University of Kansas, USA

Noel A. Card
University of Arizona, USA

Evolutionary and biological approaches tend to suggest that social dominance is predominately an aspect of male social organization. Furthermore, when females behave non-normatively, they are less positively evaluated than males engaging in the same behavior. Alternate, less familiar models of females and dominance/aggression underlie the present study which proposes that dominant males and females are more similar in both behavioral profile and social reception than commonly believed. Participants (N = 1723; grades 5–10) self-rated their aggression, social motivations, and strategies and beliefs associated with interpersonal influence. Peer ratings of strategies of influence, aggression, and the degree to which peers were liked and disliked were also obtained. Results demonstrated that socially dominant males and females balance prosocial and coercive strategies and win positive peer regard, their aggressiveness notwithstanding. These findings highlight competitiveness in females and provide insights into the paradoxical relationship between positive peer regard and aggression (the peer regard–aggression paradox).

Keywords: aggression; gender; peer relations; social dominance

For decades, researchers in various domains of the bio-behavioral sciences have had an enduring affinity for the idea of the dominant male. Distinctly masculine characteristics such as morphological weaponry (e.g., tusks, antlers, canine teeth), ornaments (e.g., bright colors, manes) and behaviors (e.g., contests, displays) are well-documented. Females, by contrast, are often portrayed as being far less aggressive, more communal, and less interested in social politics.

This article addresses what we refer to as "the myth of the alpha male." We argue that overt competitiveness and resultant social dominance in females have been traditionally underrated by biologists and psychologists. Our motivating theoretical perspective suggests that females of high social dominance are less different from dominant males in terms of behaviors and motivations than is commonly believed, and that these socially dominant females enjoy similar social regard as dominant males do, gender stereotypes notwithstanding.

We begin by introducing evolutionary approaches that tend to hold dominance to be the purview of males, and then introduce lesser known alternate biological views to social dominance in females. We will then link this latter perspective to contemporary work on girls' aggression and how aggression can lead to positive peer regard. Finally, we attempt to theoretically integrate these literatures via resource control theory which gives rise to the specific questions at hand.

Evolution and selection in relation to sex: Why do evolutionary perspectives emphasize dominance in males?

Gender differences have a long tradition of being stressed by evolutionists, especially as they relate to competition for resources (including mates). Following Darwin's (1871) lead, many evolutionary scientists maintain that sex-typed behavior evolved out of the differential parental investments and reproductive rates of the two sexes (Trivers, 1972). Mammal and primate females have been evolutionarily selected to guard their fertility and scrutinize males according to "quality" (e.g., loyalty, resource-holding potential). Thus, females evolved to protect and provision offspring (Pellegrini, 2004) which makes them more averse to risk of physical harm than males (Campbell, 1999; Taylor et al., 2000). Second, the lower parental investment of males leaves them free to pursue and compete with other males for additional mates (at great personal risk, but clear reproductive advantage). This male–male competition has selected males to be physically larger and stronger than females, and to assume more aggressive behaviors, motivations, and social roles (Clutton-Brock, 1983).

Modern instantiations of sexual selection theory have been referenced by authors studying, among other things, violence proneness (Buss, 1988; Daly & Wilson, 1994; Wrangham & Peterson, 1996), play preferences (Benenson, 1993; Pellegrini & Smith, 1998), sex segregation (Pellegrini, 2004), and social dominance orientation (Pratto, Sidanius, & Stallworth, 1993) and hierarchies (Pellegrini & Archer, 2005). Across the board

The Max Planck Society provided partial support for this work. Part of time of the second author was supported by grants from the NIH to the University of Kansas through the Mental Retardation and Developmental Disabilities Research Center (5 P30 HD002528), and the Center for Biobehavioral Neurosciences in Communication Disorders (5 P30 DC005803), and an NRSA fellowship to the 3rd author (1 F32 MH072005). Parts of this work were presented at the biennial meeting of the Society for Research on Adolescence, Baltimore, MD, March 2004.

Correspondence should be addressed to Patricia H. Hawley, Department of Psychology, 1415 Jayhawk Blvd., University of Kansas, Lawrence, KS 66045, USA; e-mail: phawley@ku.edu

these literatures suggests that males are more physically aggressive, more status-striving, and more dominance-oriented than females (see also Geary, 1998).

Alternate evolutionary views

Though evolutionary perspectives seem to generally support what is referred to as a "two-cultures" perspective (Thorne, 1986) in their portrayal of males and females, other evolutionary thinkers (Hrdy, [1981]1999) have confronted these stereotypes associated with sex. Namely, Hrdy ([1981]1999) has long argued that females' behavior is no less self-interested, competitive, or dominance striving than males and their subtle social politics can be downright diabolical: They inhibit each others' reproductive cycles, monopolize resources, dominate and sexually manipulate males, and kill each others' infants. "Access to resources – the key to successful gestation and lactation – and the ability to protect one's family from members of one's own species are so nearly correlated with status that female status has become very nearly an end in itself" (Hrdy, [1981]1999, p. 128). Furthermore, she adds, females compete for more enduring stakes than males in that female intrasexual competition strongly influences primate social organization (e.g., social dominance structures) in ways that last *several generations* (cf. Campbell, 1999).

Girls and aggression

While Hrdy and colleagues were lifting the veil of the coy female in biological circles, alternate views of females and aggression were emerging among social developmentalists and are now well-accepted. Although boys and men have long been considered more overtly aggressive than girls and women (Lorenz, 1966; Maccoby & Jacklin, 1974), and certainly more lethal in their aggression (Daly & Wilson, 1994; Wrangham & Peterson, 1996), relational (Crick & Grotpeter, 1995; Crick & Rose, 2000), social (Underwood, 2003), and indirect aggression (Björkqvist, Österman, & Kaukiainen, 1992) appear to be the modus operendi of girls. As foreseen by Hrdy ([1981]1999), girls are known to effectively employ gossip, rumor spreading, interpersonal betrayal, and social exclusion as means to harm the social standing of peers. Although the relationships between girls' aggression and several conceptions of social status have been investigated (Cillessen & Mayeux, 2004; Rose, Swenson, & Waller, 2000; Zimmer-Gembeck, Geiger, & Crick, 2005), its relationship to social dominance remains relatively unexplored.

Aggression and social reception

In general, aggression is viewed as an obstruction to positive relations with others. Decades of research in developmental psychopathology have shown that aggression and antisocial behavior are associated with a higher risk for peer rejection (Coie, Dodge, & Kuperschmidt, 1990; Hughes, White, Sharpen, & Dunn, 2000; Keane & Calkins, 2004), social–psychological maladjustment (Ostrov, Woods, Jansen, Casas, & Crick, 2004), and unappealing qualities such as impulsivity (Pope, Bierman, & Mumma, 1991; Tremblay, Pihl, Vitaro, & Dobkin, 1994), perspective-taking deficits (Chandler, 1973; Coie & Dodge, 1998), and moral deficiencies (Bear, 1989; Bear & Rys, 1994).

At the same time, it has been recognized that many aggressive children are in fact not rejected (Coie et al., 1991). Aggression can be associated with centrality in the social network (Bagwel, Coie, Terry, & Lochman, 2000; Farmer & Rodkin, 1996) because it is an effective way to achieve and maintain social prominence and status, especially in adolescents (Adler & Adler, 1998; Cillessen & Mayeux, 2004). In addition to being socially alluring, aggressive youths can be socially skilled and morally astute (Cairns, Xie, & Leuny, 1998; Hawley, 2003a, 2003b; Hawley, Card, & Little, 2007; Rodkin, Farmer, Pearl, & Van Acker, 2000; Sutton, Smith, & Swettenham, 1999). We attempt to make sense of this *peer regard–aggression paradox* (the apparent allure of some highly aggressive youths; Hawley et al., 2007) within a resource control theoretic perspective, especially as it relates to adolescent females' behaviors and motivations associated with social dominance (e.g., instrumentality in relationships, need for recognition).

Social dominance and resource control

Resource control theory is consistent with sexual selection theory, but diverges from its emphasis on gender differences (favoring males) by explicitly recognizing Hrdy's view that females (especially post-pubertal) are central to groups' hierarchical organizations. In contrast to Campbell (1999) who disconnects resource competition and dominance status, resource control theory expressly links them. Here, social dominance status is consequent to resource control, or, resource control is the raison d'etre of social dominance status (Hawley, 1999; Hawley, Little, & Rodkin, 2007; cf. Dunbar & Burgoon, 2005; Sidanius & Pratto, 1999).

The consequences of this re-coupling of resources and dominance are significant. First, resource control theory posits two primary means by which dominance is achieved: prosocial and coercive. Coercive strategies gain access to resources directly and agonistically such as by taking, threatening, or assaulting others and as such are aligned with traditional approaches to social dominance. Prosocial strategies, however, gain access to resources indirectly via positive behaviors such as reciprocity and cooperation. Because these strategies can be used alone or in combination, females consequently have a measurable route to social dominance. Second, the theory hypothesizes that those who are especially effective at resource control (i.e., social dominants) will win positive social attention (e.g., be admired and sought out for social partners) – even if aggressive – because they are skilled in the material and social domains (Hawley, 1999).

This two-strategies approach to social dominance supports person-centered analyses (Magnusson, 2003); that is, *types* of resource controlling individuals who function in similar ways can be identified, with type being dependant on the relative employment of the two strategies. Some individuals favor prosocial strategies (prosocial controllers), some favor coercive strategies (coercive controllers), others employ both (bistrategic controllers) or neither (non-controllers). The largest group is average on both strategies (typical controllers). Consistent with our predictions, we have generally found bistrategic controllers – like prosocial controllers, and unlike coercive controllers – to possess attributes associated with traditional measures reflecting skills (Hawley, 2002, 2003a). Unlike prosocial controllers, but like coercive controllers, bistrategic controllers are highly aggressive. Nonetheless, they are socially attractive to (Hawley, 2003a, 2003b) and liked by peers (Hawley et al., 2007). Because of their superior abilities to

compete for resources (e.g., access toys, teachers, attain personal goals), they are from this perspective by definition of the highest social dominance status. When behavior other than overt aggression is considered, dominance in females clearly comes into view. Indeed, we have repeatedly found that supremely dominant (and aggressive) bistrategic controllers are as likely to be females as they are to be males across all age groups.

Are socially dominant females similar to dominant males?

Generally, questions concerning intragender variability are overshadowed by intergender comparisons. We may in fact find "alpha females" to rival alpha males in terms of behaviors and motivations (Maslow, 1940). Testing this possibility is especially significant post-puberty because males and females become dimorphic. Though gender differences may emerge at level of strategy employment (females tend to be more cooperative and communal than males, and consequently may favor prosocial strategies over coercive), other biologically infused models may generally overstate gender differences in dominance because they typically have not been inspired by the developmental work on female social aggression (but see Campbell, 1999 for a notable exception). We may come to find that although males overall are more competitive, instrumental in their relationships, and higher in need for recognition, dominant females may share these traits.

Furthermore, generally males epitomize the highly dominant socially central individual. Theoretical models in social psychology reinforce this image; aggressive, competitive females are argued to experience social backlash (Rudman & Glick, 2001). In contrast, resource control theory suggests that socially dominant individuals of both genders would be socially attractive due to their skills in the material and social worlds. Evolutionarily speaking, successful acquisition and defense of resources confers power and this power ultimately translates into reproductive success.

Specific questions of study

As a theoretical extension to published reports (Hawley, 2003a), this article addresses personal motivations associated social dominance as well as a more differentiated view of aggression (i.e., overt and relational). Most centrally, we directly address within-gender variability across resource control subtypes in terms of competitive and social motivations, specific forms of aggression employed, and indices of peer regard indicating social centrality.

Are boys higher on traits and motivations associated with social dominance than girls? Because the bulk of previous work has shown that they are (Geary, 1998; Maccoby, 1988; Pellegrini & Archer, 2005; Whiting & Edwards, 1988), we believe we too will find gender differences on social dominance constructs (e.g., resource control, ability to influence others, the importance of influencing others, the need for recognition, extrinsic social motives, and overt aggression) favoring boys. Conversely, we expect girls to be higher on relational aggression than boys, consistent with previous studies (Crick, 1997; Underwood, 2003).

The primary purpose of the present study, however, is to explore within-gender variability on the constructs across resource control groups. We believe that gender differences in some constructs will reduce considerably or vanish within some resource control groups (especially within the highly socially dominant bistrategic controllers). Specifically, we hypothesize that *both* male and female bistrategic controllers will display high levels of behavioral and motivational constructs related to social dominance (e.g., resource control, ability to influence others, placing importance on influencing others, need for recognition, extrinsic social motivations, and aggression), and that both will enjoy positive peer regard (the social centrality hypothesis) in terms of being liked, socially prominent, and targeted by others' social aspirations.

Method

Participants

Youths from grades 5–10 from five schools from West Berlin, Germany, were recruited to participate (M age = 14.0 years, SD = 1.63). The schools represented vocationally oriented schools (Hauptschule, 6.9% and Realschule, 17.9%), a comprehensive school (Gesamtschule, 22.9%) and a grammar school (Gymnasium, 34.2%; for reviews of the German educational system, see Führ, 1997; Kracke & Scmitt-Rodermund, 2001). Students were recruited with the permission of headmasters by a visit to the classroom by a native German-speaking member of the research team. Only those who provided written informed parental consent participated in the study. A total of 75% school-wide participation resulted in a total of 1723 children (913 girls, 810 boys). The socio-economic characteristics of these children's families were generally lower to middle class (Hermann, Imme, & Meinlschmidt, 1998) and the schools served areas that had less than 18% ethnic minority representation (the sample is 82% ethnic German, 12% Turkish, and 6% other).

Procedure

Participants filled out a battery of questionnaires during three 45-minute sessions spanning approximately 2 weeks (the orders of presentation were counterbalanced). A proctor and at least one assistant were present in each session. All questions were read aloud to the 5th and 6th graders to facilitate comprehension. All measures were either translated into German from English (using back-translation and bilingual committee evaluation procedures) or adapted from established measures in the literature, except the aggression instrument (see later) which was co-developed in English and German.

For all the peer-nominated variables, data were standardized within classroom to control for classroom size. This standardization procedure also minimizes bias related to grade-cohort because classrooms are nested within grade-cohort. To be consistent in the treatment of grade (and classroom) effects, we also standardized the self-report variables within classroom. As a result of the standardization process, individuals are classified into resource control groups on the basis of their relative standing among their immediate classmates and not on the basis of any grade-related differences on the variables.

Identification of resource control groups

As an extension of Hawley (2003a), resource control groups were formed both by self-reported strategy employment and

peer-reported strategy employment. By using classifications based on different reporters, we both avoid potential biases associated with relying solely on self-report and allow for the comparison of resource control groups as defined by self and peers. To keep the following discussion manageable, however, we focus on the self-reported groups and provide the material associated with the peer-reported groups in the Appendices.

Self-report prosocial and coercive strategies. Strategies of interpersonal influence (Hawley, Little, & Pasupathi, 2002) were measured with six items each on two dimensions: *prosocial strategies* (e.g., "I influence others by doing something for them in return;" "I influence others by being really nice about it," $\alpha = .80$) and *coercive strategies* (e.g., "I often bully or push others to do what I want to do;" "I often trick others to do what I want," $\alpha = .76$). Participants rated how true each item was for them on a 4-point scale from "*not at all true*" to "*completely true*." In the analyses described below, they form the basis of the self-reported resource control groups.[1]

Deriving resource control groups. Resource control groups were defined by dividing the distributions of self-report responses (and peer-nominations) of both the prosocial and coercive strategy-use constructs into thirds (cf. sociometric procedures; Coie & Dodge, 1983). Although rather arbitrary, this method was seen as preferable to using absolute criteria because social dominance and strategy use is by our definition a relative differential (Hawley & Little, 1999).

The five groups were formed as follows: (a) bistrategic controllers score in the top 66th percentile on both prosocial and coercive strategies ($n = 311$), (b) prosocial controllers score in the top 66th percentile on prosocial control but average or low on coercive control ($n = 274$), (c) coercive controllers score in the top 66th percentile on coercive control but average or low on prosocial control ($n = 274$), (d) typical controllers score between the 33rd and 66th percentile on one or both, but not above the 66th percentile on either ($n = 540$), and (e) non-controllers score in the lower 33rd percentile on both dimensions ($n = 324$).

Gender distributions for the groups are presented on Table 1 (and for peer-nominated types, Table A1). The gender distribution differed significantly from chance expectations ($\chi^2_{(4)} = 50.58$, $p < .001$) largely due to more boys and fewer girls than expected being categorized as coercive controllers. In contrast, bistrategic, prosocial, typical, and non-controllers were equally likely to be girls as boys.

Age and grade. Because we standardized the nominations within classroom, resource control group classifications are relative to same-age peers. The self-report strategies are slightly related to age in some samples (Hawley, 2003a). In the current data, grade correlated .11 with positive strategies, .10 with coercive strategies, and .13 with resource control. Age was not correlated with any of the other self-report constructs with the exception of intrinsic motivation ($r = .13$). These developmental effects are very small. Thus, when we created the self-reported groups by controlling for grade, the pattern of results were nearly identical with the pattern obtained when grade was not controlled. Therefore, we chose to report the findings with age-related differences controlled. The correlation between the two self-report strategies showed no evidence of grade moderation with the overall correlation at .46.

Table 1
Gender distributions for self-reported resource control groups

	BC	*PC*	*CC*	*TC*	*NC*
Boys	168	111	174^{+}	226	134
Girls	143	163	100^{-}	314	190
Total	311	274	274	540	324

$\chi^2_{(4)} = 50.58$, $p < .001$

Note. BC, bistrategic controllers; PC, prosocial controllers; CC, coercive controllers; TC, typical controllers; NC, non-controllers. Cells with a '+' superscript were significantly higher than expected by chance and cells with a '–' superscript were significantly lower than expected by chance ($p < .05$).

Dominance abilities. Self-perceived *resource control* was measured with 6 items (e.g., "I get what I want in class;" "I usually get what I need, even if others don't," $\alpha = .70$) assessing the ability to obtain desired roles, possessions, or attention. For all self-reported constructs, participants rated how true each item was for them on a 4-point scale ("*not at all true*" to "*completely true*"). To validate self-reports, peer reports (via the above-described nominations procedure) were obtained for *resource control* (2 items, e.g., "Who is best at getting what they want?", $\alpha = .81$). Self-reported *influence ability* was measured by three items (e.g., "How able are you to get others to do what you say?", $\alpha = .80$).

Self-reported dominance motivations and social motivations. The importance placed on influencing others (*influence importance*) was measured by three items (e.g., "How important is it to you to get others to do what you say?", $\alpha = .72$). *Need for recognition* was assessed using three items (e.g., "For me it is important to be recognized by others," $\alpha = .67$). Eighteen items measuring social motives for pursuing friendships were drawn from the Multi-CAM (Little & Wanner, 1997; see also Little, Brauner, Jones, Nock, & Hawley, 2003). Nine items assessing *intrinsic social motives* (Deci & Ryan, 1985) comprise three subscales: (a) personal fulfillment (e.g., "Why do you make new friends, is it because you want to do it for yourself?", (b) pleasure (e.g., "Why do you make new friends, is it because you like to do it?", and (c) enjoyment (e.g., "Why do you make new friends, is it because you enjoy doing it?"). Internal consistency of the intrinsic social motives scale was .88 overall. The nine items assessing *extrinsic social motives* also comprise three subscales: (a) quest for popularity (e.g., "Why do you make new friends, is it because you want to be popular?", (b) competing with others (e.g., "Why do you make new friends, is it because you want to show that you can do better than others?", and (c) demonstration of ability (e.g., "Why do you make new friends, is it because you want to show that you can

[1] To obtain peer-reports of prosocial and coercive strategies (and other variables described later), we used a standard within-classroom limited-choice nomination procedure (i.e., students were asked to nominate up to three classmates for each item). Nominations were then standardized within classroom to control for class size and any differences in nomination rates among the pools. *Prosocial strategies* were measured with two items (e.g., "Who has good ideas or suggestions that the others like to follow?", $\alpha = .79$), as were *coercive strategies* (e.g., "Who makes others do what they want?", $\alpha = .86$). These variables parallel those measured via self-reports described above, and were also used to identify resource control groups (see Appendix).

do it easily?"). The internal consistency of the extrinsic social motives scale was .82.

Peer regard

In order to assess peer reception of the resource control subtypes, four peer regard measures were obtained from the within-classroom limited-choice nomination procedure described above. Constructs of interest included *peer liking* (2 items, e.g., "Who do you like the most? Who do you like to hang out with?", $\alpha = .69$), *peer disliking* (2 items, e.g., "Who do you like the least? Who do you not like to hang out with?", $\alpha = .84$), and *perceived popularity* (2 items, e.g., "Who is the most popular?", $\alpha = .89$). The first two variables are related to those commonly used indices of affinity or social preference (e.g., Coie, Dodge, & Coppotelli, 1982), whereas the latter is a measure of social prominence that is related to, but distinct from, social preference (e.g., Parkhurst & Hopmeyer, 1998). Because resource control theory hypothesizes that members of a social group aspire to affiliate with socially dominant individuals (Hawley, 1999), we additionally assessed *desired affiliation*, that is, peers' desire to affiliate with a named other (2 items, e.g., "Who do you wish was your friend?", $\alpha = .65$). This variable, to our knowledge, has not been used in prior research (but see Hawley, 2004); however, we include it because it represents a meaningful component of social status in assessing the degree to which peers would affiliate with a child if circumstances allowed or, importantly, if their affinity were reciprocated.

Aggression

Self-reports. From the multidimensional measure of self-reported aggression developed by Little et al. (2003) we employed two 6-item scales assessing *overt aggression* (e.g., "I'm the kind of person who often fights with others," ". . . who hits, kicks, or punches others," $\alpha = .84$) and *relational aggression* (e.g., "I'm the kind of person who tells my friends to stop liking someone," ". . . who keeps others from being in my group of friends," $\alpha = .71$; see also Crick & Grotpeter, 1995). For the present study, neither scale referenced the function of aggression (i.e., instrumental, reactive; cf. Little et al., 2003). Although the aggression items overlap conceptually with coercive strategies somewhat, such overlap is deemed necessary to confirm that coercive strategies involving trickery or manipulation are indeed related to established conceptions of aggression that reflect physicality and relationship disruption. Moreover, the function of the aggressive act (e.g., instrumentality vs. reactivity) is not inherent to the aggression constructs in the present study (cf. Little et al., 2003), whereas instrumentality is central to coercive strategies of resource control.

Peer nominations. To substantiate self-reports of aggression, peer reports were obtained for *overt aggression* via the nominations procedure (4 items, e.g., "Who starts fights to get what they want?", "Who pushes, kicks, or punches others because they've been angered by them?", $\alpha = .85$), and *relational aggression* (4 items, e.g., "Who tells their friends to stop liking someone in order to get what they want?", "Who gossips or spreads rumors about others if they're mad at them?", $\alpha = .85$). In contrast to the above, instrumentality is equally balanced with reactivity for the peer nomination measures of aggression so that neither function is favored over the other (see Little et al., 2003 for extended discussion).

Analytic procedures

To test our hypotheses, we used mean and covariance structures (MACS; Little, 1997) modeling techniques. MACS analyses are used for multiple-group comparisons and include mean-level information as well as the covariance structures information of SEM. Like SEM (Jöreskog & Sörbom, 2001), MACS models correct for unreliability and allow the testing measurement equivalence across groups. The latter quality allows unbiased comparisons across measures characterized by different levels of reliability. Multiple-group MACS models can furthermore estimate a hypothesized factorial structure simultaneously in two or more groups and establish cross-group equivalence of key measurement parameters (i.e., intercepts, loadings).

We evaluated model fit using standard fit indices, such as the Incremental Fit Index (IFI) and the Comparative Fit Index (CFI), for which values of about .90 and greater are generally deemed acceptable, particularly in the context of multiple-group MACS analyses (see Little, Card, Slegers, & Ledford, in press). We also used the root mean square error of approximation (RMSEA), for which values of less than .08 are deemed acceptable (see e.g., Little et al., in press; Marsh, Wen, & Hau, 2004). For strict nested-model comparisons, we used the maximum likelihood χ^2 statistic ($\alpha = .01$ for all nested-model comparisons).

For unidimensional constructs with more than three items (e.g., closeness), we parceled (a method of aggregation) the items using a random procedure (for details see Little, Cunningham, Shahar, & Widaman, 2002). To test for similarities and differences in the constructs across genders and types, we specified a series of single construct 10-group MACS models (5 resource control groups by 2 genders). Across the 10 groups in each model, we specified strong metric invariance (Meredith, 1993) to ensure comparability of the constructs across groups and gender. To identify the constructs and reproduce parameter values for the constructs that are non-arbitrary, we used effects constraints such that the average loading for a given construct is equal to 1 and the sum of the intercepts is equal to 0 (see Little, Slegers, & Card, 2006). To model the mean structures across the 10 groups in each of the four models, we equated a chosen set of estimated means and evaluated the constraint(s) as a nested-model comparison (Jöreskog & Sörbom, 2001). When a constraint led to a significant decrease in fit ($p < .05$), it was not enforced (Little et al., in press).

In the end, tabled means that do not significantly differ from each other are represented by the same value. Values that differ in the table are in fact significantly different from one another at $p < .01$. Self-report and best-friend reports did not differ significantly and therefore are merged in the final representation. To estimate the effect sizes of the mean differences, we calculated Cohen's *d* using square root of the pooled variance estimates across the 10 groups for each construct. Effect sizes were calculated by dividing the estimated latent mean or the difference between any two means by this pooled (and disattenuated) standard deviation.

Results

Overall gender differences

First, to explore the main effect differences across males and females, we fit two simple two-group models (models were specified separately for the self-report and peer nomination variables). The unstructured latent means for this model are presented in Table 2. Because the indicators were standardized across the entire sample, gender differences emerge as roughly symmetric deviations from zero, the overall sample mean. The model fit was good for the self-report variables, $\chi^2(760, N = 1723) = 2190.3$, RMSEA = .048(.046–.051), IFI = .96, CFI = .96, as it was for the peer-nomination variables, $\chi^2(216, N = 1723) = 1284.4$, RMSEA = .074(.070–.078), IFI = .98, CFI = .98. Significant main effects of gender emerged for the majority of the constructs, both in the latent and manifest variable comparisons.

The results presented in Table 2 confirm many common gender findings; namely, boys described themselves in more agentic terms than girls (i.e., higher on coercive strategies, resource control, influence ability and importance, extrinsic motives, need for recognition, and overt aggression) while girls described themselves as more intrinsically motivated to pursue friendships). Boys rated themselves higher on relational aggression than did girls, and there were no gender differences in prosocial strategies. Peers viewed boys and girls in a similar pattern with the exception that peers report girls to be more relationally aggressive than boys. In terms of peer regard, peers nominated girls as being more liked, less disliked, and more desired as friends than boys. There were no gender differences in perceived popularity.

Self-reported resource control type differences

Table 3 displays the latent means for boys and girls across the self-derived resource control types. Because the indicators were standardized within classroom, group differences emerge as roughly symmetric deviations from zero. Equal values in the table denote the lack of significant differences between those groups (hence, they were equated). The constrained means depicted in Table 3 showed no differences in overall fit from the unconstrained baseline model, $\Delta\chi^2(55, N = 1723) = 58.1$, $p = .36$, thus indicating the constraints are warranted. For the peer-reported dependent variables displayed in the bottom portion of Table 3, model fit was also quite good: $\chi^2(1152, N = 1723) = 2701.91$, RMSEA = .080(.076;.085), IFI = .97, CFI = .97.

Self-reported social dominance variables. The general pattern across types validates the group formation (gender distinctions are discussed later). For example, bistrategic controllers as a group are the highest in self-reported resource control (i.e., *Ms* = .72; *d* = 1.61), while non-controllers are the lowest. Similar patterns emerged for all variables associated with social dominance including influence ability and importance, need for recognition, and overt and relational aggression.

Peer-reported variables: Social centrality. In terms of social centrality, prosocial controllers emerge as the most liked, followed by bistrategic controllers who are at the sample average. Bistrategics as a group have the most desired affiliation nominations and are perceived as among the most popular (with prosocial controllers).

Table 2
Latent means (and standard deviations) by gender

	Latent variable metric				
	Boys		*Girls*		
Construct/variable analyzed	*Mean*	SD	*Mean*	SD	*Effect size*
Self-reported variables					
Prosocial influence	.00	.75	–.01^{ns}	.73	.01
Coercive influence	.14	.74	–.14***	.59	.43
Resource control	.16	.61	–.14***	.61	.50
Influence ability	.08	.69	–.07***	.76	.21
Influence importance	.08	.66	–.07***	.65	.23
Intrinsic social motives	–.21	.85	.19***	.75	–.50
Extrinsic social motives	.22	.80	–.19***	.67	.56
Need for recognition	.12	.64	–.11***	.59	.38
Overt aggression	.14	.80	–.12***	.67	.35
Relational aggression	.06	.63	–.06***	.59	.19
Peer-reported variables					
Prosocial influence	.02	.79	–.02^{ns}	.77	.05
Coercive influence	.14	.97	–.13***	.68	.32
Resource control	.05	.83	–.05***	.76	.13
Peer liking	–.09	.72	.08***	.69	–.23
Peer disliking	.06	.91	–.06***	.75	.14
Perceived popularity	–.03	.85	.02***	.89	–.06
Desired affiliation	–.13	.56	.12***	.73	–.38
Overt aggression	.19	.94	–.21***	.47	.55
Relational aggression	–.07	.69	.06***	.81	–.18

Note. For tests of gender differences, *$p < .05$; **$p < .01$, ***$p < .001$; ns = non-significant. Effect size estimate is Cohen's *d*.

Table 3

Constrained latent means by self-reported resource control group and gender

	BC		*PC*		*CC*		*TC*		*NC*	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Self-reported variables										
Resource control	.72	.72	.27	.00	.27	.00	–.09	–.30	–.48	–.71
Influence ability	.41	.41	.00	.00	.00	.00	.00	–.26	–.15	–.36
Influence importance	.41	.20	.00	.00	.00	.00	.00	–.15	–.15	–.26
Need for recognition	.47	.22	.00	–.15	.22	.00	.00	–.15	–.15	–.38
Extrinsic social motives	.45	.00	.00	–.24	.23	.00	.14	–.24	.00	–.36
Intrinsic social motives	.00	.45	.00	.23	–.40	.23	–.24	.00	–.40	.00
Overt aggression	.42	.28	–.28	–.28	.42	.42	–.09	–.20	–.28	–.28
Relational aggression	.42	.28	–.28	–.28	.28	.28	–.09	–.09	–.28	–.28
Peer-reported variables										
Social centrality										
Peer liking	.00	.00	.07	.07	–.12	.00	–.12	.07	–.12	.00
Peer disliking	.00	.00	.00	–.17	.19	.00	.00	.00	.00	.00
Desired affiliation	.00	.19	–.17	.19	–.17	.19	–.17	.00	–.17	.00
Perceived popularity	.17	.17	.17	.17	–.13	.00	–.12	.00	–.27	–.27
Social dominance										
Prosocial influence	.26	.26	.16	.16	–.10	–.10	–.10	–.10	–.24	–.24
Coercive influence	.26	.26	.16	–.19	.26	.00	–.10	–.19	.00	–.19
Resource control	.26	.26	.26	.00	.00	.00	–.12	–.12	–.25	–.25
Overt aggression	.32	.00	.13	–.25	.32	.00	.00	–.25	.00	–.25
Relational aggression	.00	.32	.00	.00	.00	.32	–.21	.00	–.21	.00

Note. BC, bistrategic controllers; PC, prosocial controllers; CC, coercive controllers; TC, typical controllers; NC, non-controllers.

Peer-reported variables: Social dominance. The pattern of the peer nominated social dominance variables (e.g., prosocial and coercive influence, resource control, and overt and relational aggression; bottom portion of Table 3) validates self-perception of resource control group derivation. For example, self-defined bistrategic controllers stand out as a group as high on peer-rated prosocial and coercive influence. That is, the defining variables of the self-reported bistrategic controller are visible to the peer group. Similarly, self-defined bistrategic controllers are seen by their peers as supremely effective at resource control (*Ms* = .26; *d* = .33). The other groups' levels of peer-nominated resource control fit their hierarchical standing (e.g., self-defined non-controllers are seen by their peers as the least effective, *Ms* = –.25; *d* = –.33). In our view, these patterns bolster the validity of self-derived types and furthermore highlight the salience of these dimensions in the social group.

Gender differences and similarities within self-defined resource control groups

Self-reported social dominance variables. Returning to Table 3, we see that self-defined bistrategic boys and girls rated themselves equally high on resource control (*Ms* = .72; *d* = 1.61). For the other groups, however, boys' self-ratings exceeded the girls' (e.g., *M* = –.48 for non-controlling boys is greater than *M* = –.71 for non-controlling girls, *d* = .52). A similar pattern emerged for influence ability (i.e., both bistrategic boys and girls were equally high). Bistrategic boys placed the highest importance on influence (*M* = .41; *d* = .64), followed by bistrategic girls (*M* = .20; *d* = .31). For need for recognition and extrinsic social motives, boys exceeded girls for all groups, with bistrategic boys being the highest on both of these constructs (need for recognition: *M* = .47; *d* = .82; extrinsic motives: *M* = .45; *d* = .62). By contrast, girls rated themselves higher on intrinsic motives than boys within each resource control group.

With means of .42 (*d* = .62), bistrategic and coercively controlling boys and coercively controlling girls rated themselves as the most overtly aggressive. In contrast, prosocially and non-controlling boys and girls rated themselves as least overtly aggressive (*Ms* = –.28; *d* = –.41). Bistrategic girls were also well above average on self-reported overt aggression (*M* = .28; *d* = .42), placing them as significantly more aggressive than the typically controlling boys (*M* = –.09; Δ*d* = .55). On relational aggression, bistrategic boys rated themselves as the highest of all groups (*M* = .42; *d* = .74). Bistrategic girls and coercively controlling boys and girls also rated themselves well above the overall average on relational aggression (*Ms* = .28; *d* = .51). Again, prosocially and non-controlling boys and girls were among the least relationally aggressive (*M* = –.28; *d* = –.50). These findings indicate that the overall main effects of gender on overt and relational aggression (Table 2) were driven by particular subgroups of boys; namely, gender differences on overt aggression were driven by bistrategic and typically controlling boys, whereas differences in relational aggression were driven by bistrategic boys.

Peer-reported variables: Social centrality. Self-reported prosocially controlling boys and girls and typically controlling girls were most liked among the groups (*Ms* = .07; *d* = .10; see Table 3), followed by bistrategic boys and girls (and coercively and non-controlling girls; *Ms* = 0; Δ*d* = .10). Coercively controlling boys received the most disliked nominations (*M* = .19; *d* =

.23). Girls with higher than average dominance (i.e., bistrategic, prosocial, and coercive controllers) were equally the targets of peers' friendship aspirations (*Ms* = .19; *d* = .28). Bistrategic and prosocial controllers of both genders were perceived as the most popular by the group (*Ms* = .17; *d* = .21) and non-controllers the least (*Ms* = –.27, *d* = 32).

Peer-reported variables: Social dominance. As can be seen at bottom portion of Table 2, peers made no significant gender distinctions when nominating for prosocial influence; within each resource control group, the genders are the same. In contrast, for the majority of resource control groups, boys were nominated at higher rates on coercive strategies than girls. The exception is the bistrategic group where there with no peer-rated distinctions on this variable (*Ms* = .26; *d* = .31). Similarly, few gender distinctions were evident within group for resource control (i.e., only for prosocial controllers). However, for each resource control group, boys were higher on peer-nominated overt aggression, and girls were higher on peer-nominated relational aggression (with the exception of prosocial controllers where the genders were equal).

Self-peer agreement. As can be seen in Table 2, there is a high degree of agreement between self and peer assessment on constructs associated with social dominance (as would be expected for a highly visible social phenomenon). This holds particularly at the extremes of the hierarchy, like the bistrategic controllers who attract a good deal of social attention (e.g., desired affiliation, popularity). An important contribution of the current study is the examination of the resource control groups as defined by the peers' perceptions to provide additional validation for self-report (see also Tables A1 and A2).

Discussion

Boys differ from girls on several key variables associated with social dominance and the results presented here are no contradiction to these well-developed and compelling literatures (Geary, 1998; Maccoby, 1988; Pellegrini & Archer, 2005). Overall, boys, more so than girls, reported that influence is important, that they are effective in their influence attempts, that they are successful at getting what they want, that they use coercive strategies, and that they have an overall higher need for recognition. Boys also reported resorting to aggression more than girls (both overt and relational) and that they are more extrinsically motivated to pursue relationships with others (i.e., more instrumental). Peers also see boys and girls in line with these gender expectations in that they perceive boys to be more resource controlling, more coercively influential, and more overtly (although not more relationally) aggressive than girls.

Second, we further validated our person-centered approach by integrating both self and peer assessments. Agreement of peer and self assessments were especially evident at the extremes of the social dominance hierarchy (i.e., bistrategic and non-controllers). Relatedly, we found additional support for the social centrality hypothesis. Highly socially dominant groups (e.g., prosocial and bistrategic controllers) were among the most liked, the most desired for affiliation, and viewed as the most popular. These findings, however, are not unique to the present study (for elaboration on the social reception of the groups and relationship processes, see Hawley, Card, & Little, 2007).

Intragender variability in social dominance

The primary purpose of the present study was to explore intragender variability across the resource control subtypes and key gender similarities and differences within the social dominance groups at an epoch in the life span when humans are becoming dimorphic. Although our initial analyses confirmed many of the gender differences found in previous studies, in the end we found that high resource controlling boys and girls were less different than might be suggested by the perspectives emphasizing gender differences (e.g., sexual selection theory). Although gender differences were certainly uncovered, we nonetheless focus on the similarities (cf. Pellegrini & Archer, 2005) and explore their possible meaning.

Similarities in numbers. Bistrategic controllers, for example, have been shown here and elsewhere (Hawley, 2003a, 2003b) to be equally male and female (although coercive controllers are predominantly male). This pattern was further supported here by utilizing the peers' perspectives (Table A1). It thus appears that males have little advantage at achieving very high social dominance when both prosocial and coercive strategies are considered.

Motivations, abilities, and aggression. Additionally, a nuanced picture emerged for key constructs across the self-reported resource control groups that illuminates the socially dominant girl (Table 3). Although boys scored higher than girls across most groups on self-reported resource control, bistrategic boys and girls were rated as equally effective by both self and peers. A similar picture emerges for self-assessed influence ability. For the importance of influence and need for recognition, bistrategic girls are second only to bistrategic boys (thus, they well outscore most boys, but, contrary to expectations, do not equal bistrategic boys). Whether the groups were derived via self or peer, or whether the ratings of overt and relational aggression were by the self or peer, bistrategic controllers of both genders are clearly a highly aggressive group.

Balancing getting along and getting ahead. What does it mean when one is high on instrumental goals, the need to be recognized for accomplishments, and interpersonal aggression? We do not believe this pattern of aggression is maladaptive "agency unmitigated by communion" (Helgeson & Fritz, 2000), but rather a powerful intermingling of "getting along" and "getting ahead" central to human social competence (Bukowski, 2003; Hawley, 2003a; Hogan & Hogan, 1991). Presumably, social motivations play not only a key role in the striving for dominance but also the strategies employed for doing so.[2] In general, we see gender differences in self-reported social motivations across the self-report resource control groups (Table 3), with girls favoring intrinsic motivations and boys favoring extrinsic motivations (Maccoby, 1988). This dimorphism in social motivations maintains even in the bistrategic group, contrary to our expectations. When compared to other girls, however, the two types of girls who

[2] See Hawley (2006) for an elaboration on strategic differentiation and personality development.

stand out with high scores on coercive control (i.e., bistrategic and coercive controllers) rate themselves as the highest on extrinsic motivations to pursue relationships (popularity, competition) relative to other girls (i.e., scoring at the overall average). Similarly, the two types of boys who employ prosocial strategies (i.e., bistrategic and prosocially controlling boys) rate themselves as the highest on intrinsic motivations to pursue relationships (joy, personal fulfillment) relative to the other boys. Thus, among the highly dominant bistrategic controllers, we see multiple motivations for social relationships as we might expect from one's balancing instrumental and social goals.

Aggression. Although it is well-known that boys in general are more physically aggressive than girls in the absence of provocation (Bettencourt & Miller, 1996; Cairns & Cairns, 1994; Maccoby, 1988; Olweus, 1978), we found substantial overlap between boys and girls in their use of overt aggression. Analyses of resource control groups derived via both self- and peer-report shed some light on some subtypes of aggressive and non-aggressive youths (see also Newcomb, Bukowski, & Pattee, 1993; Rodkin et al., 2000). When resource control groups are derived via self-report (Table 3), peers see boys as more overtly aggressive than girls across all resource control subtypes. Yet, when overt aggression is self-reported, boys score higher than girls only in the bistrategic and typically controlling groups.[3] Similarly, the overall gender difference in self-reported relational aggression favoring boys appears to be solely due to the bistrategic group. The peer world, however, sees girls as more relationally aggressive than boys overall and this pattern applies to nearly all resource control groups, with prosocial controllers being the exception.[4]

These findings are consistent with the view that overt aggression is non-normative for girls, but less consistent with the prevailing view that relational aggression is non-normative for boys (Crick, 1997; Phillipsen, Deptula, & Cohen, 1999; but see Archer, 2004; Underwood, 2004; Underwood, Galen, & Paquette, 2001). We hesitate to adopt a "gender differences view" simply because we have identified subgroups of girls who are quite high on overt aggression; namely, bistrategic controllers who are as overtly aggressive as most boys, and coercive controllers who are more overtly aggressive than most boys. Furthermore, the pattern described above demonstrates fewer gender differences on relational aggression than might be expected given the current tenor on this topic (Crick, Ostrov, Appleyard, Jansen, & Casas, 2004; Ostrov & Keating, 2004). Self-identified bistrategic boys (Table 3), for example, rate themselves as the most relationally aggressive group of youths. Thus, both bistrategic boys and girls are highly aggressive in both gender-normative as well as non-normative ways.

There are many compelling reasons to believe that girls would favor relational (or social) aggression over overt or physical. Some have argued that girls and women highly value interpersonal relationships and equity within them, thus making physical aggression particularly unwelcome (Underwood, 2003). Others see social aggression as an acceptable solution to manage one's anger at another while still appearing to be "nice," a characteristic highly prescriptive for girls (Gilligan, 1982; Underwood, 2003). Still others have suggested that interpersonal relationships are in general preserved if aggression takes a "softer" form (Cross & Madson, 1997). Eagly and Wood (1999) suggest that the subordinate position of women in society undermines the effectiveness of physically aggressive strategies. More biologically oriented writers cite issues of size (Björkqvist & Niemelä, 1992) and differential tolerance for physically harming risk (Campbell, 1999).

Rather than relationship-preserving actions, we highlight intentional relationship destruction. If intimate and exclusive relationships are resources to females (Geary, Byrd-Craven, Hoard, Vigil, & Numtee, 2003; Hrdy, [1981]1999; Taylor et al., 2000) then, as with resource acquisition and defense in general, females should exhibit high levels of competition for obtaining high quality alliances, and then defend these alliances strenuously after they have been won. Indeed, girls worry about loyalty and betrayal more so than boys (Berndt, 1981) and experience significant distress upon being targeted with social tactics (Galen & Underwood, 1997; Paquette & Underwood, 1999). Furthermore, despite the fact that girls "value equity and intimacy," they are inclined to give up almost anything – including their best friend – to increase their status with other females (Eder, 1985). We do not see such tactics as a "softer" version of physical aggression. Social ostracism is a brutal penalty to befall an intensely communal primate, and damage to one's reputation is nearly impossible to repair.

Additionally and importantly, we see in the present study that relational aggression is not solely the province of girls; socially dominant bistrategic boys engage in high levels of social/relational aggression as well. Gender non-normative aggression has been viewed as a risk factor for social maladjustment for both boys and girls (Crick, 1997). In the present study, not only do we see high dominance females adopting behavior patterns and values typically considered the purview of males, but so too do we see males adopting behaviors considered normative for females. Rather than employing beliefs about gender-specific norms, we believe that social dominance is well-served by employing a wide range of behaviors and adopting all manner of skills and motivations characteristic of humans in general.

Social reception. Social psychological approaches sometimes hold competition and aggressive assertiveness in females to be a risk factor rather than an asset (only females who balanced assertiveness and "niceness" without aggressive competitiveness minimized backlash; Rudman & Glick, 2001). In the present study, however, we see aggressive females (bistrategic and coercive controllers) to be no more disliked than their male counterparts, and are in fact viewed somewhat more favorably (cf. Sebanc, Pierce, Cheatham, & Gunnar, 2003). Even though most approaches hold aggression to be repellent to others (especially for females; Rudman & Glick, 2001), we did not find aggressive girls (i.e., bistrategic and coercive controllers) to be any less liked than their male counterparts. While not the most beloved groups, bistrategic controllers do not appear to suffer socially, and the aggressively socially dominant females especially are the beneficiaries of their peers' social aspirations.

[3] When the groups are derived by peer nominations (Table A2), again the peers see boys as more overtly aggressive than girls for all groups, but gender differences favoring boys in self-ratings of overt aggression emerge only in the low dominance groups (i.e., typical and non-controllers).

[4] When the resource control groups are derived by peer nominations (Table A2), the gender differences in self-report of relational aggression favoring boys (Table 1) is driven by the two low dominance groups (typical and non-controllers). Peers, by contrast, again see girls as more relationally aggressive across all groups.

These results add to a growing body of literature that suggests that aggressive youths come in skilled and unskilled varieties, and these children accordingly attract differential attention (Cairns et al., 1998; Hawley, 2003a, 2003b; Lease, Musgrove, & Axelrod, 2002; Rodkin et al., 2000). Lease and her colleagues (Lease et al., 2002), for example, identified a sizeable group (12.7% of their sample) of likeable, prominent, dominant children who were aggressive, all qualities possessed by bistrategic controllers (see also see also sociometrically controversial children; Newcomb et al., 1993). These findings and others like them suggest that aggression need not be repellent, and moreover, that our theoretical approaches to aggression need revision (see Hawley et al., 2007).

Feminine weakness or strength? As a final comment, females' communal orientations (e.g., cooperativeness, emotional expressiveness and sensitivity) are viewed from some perspectives in a somewhat negative light (e.g., communality is a trait "of deference and subordination;" Rudman & Glick, 1999. p. 1005; see also LaFrance & Henley, 1994, "the subordination hypothesis"). In contrast, emotion decoding skills, prosociality, and alliance building are not viewed by the present resource control perspective as strategies of subordinance, but rather as legitimate and effective strategies of resource control in group living species. In this respect, bistrategic males and females have it all.

Limitations of current study

Before concluding our discussion, several limitations of the current study warrant mention. First, our method of identifying resource control groups may be considered rather crude and highly susceptible to context effects (and the items for self and peers were not always identical). As such, the method may have minimized potential differences between these groups relative to those likely evident with more precise group identification. An important future direction includes honing our methodology for group derivation. Yet all subjective assessments – no matter the rater – are vulnerable to distortions from gender stereotypes (Biernat & Thompson, 2002; Underwood et al., 2001). Observational techniques, though labor intensive, might offer a more objective measurement, and one with gender biases minimized. An additional limitation is found in the cross-sectional nature of this study, which precludes conclusions regarding either the stability of resource control groups or the directions of relations among resource control groups and their correlates.

Despite these limitations, this research contributes to our understanding of aggression and gender differences, both methodologically and theoretically. Dividing populations into types has subtle advantages over correlational methods, despite the arbitrariness of the tri-partite cut-offs. For example, although correlational methods yield positive relations among positively valanced constructs (e.g., prosocial control is positively correlated with self concept, and likeability; Hawley, 2003a), they do not address well zero correlations between coercive control and positive outcomes (e.g., self-concept, likeability; see Bergman, 1998). These zero correlations we believe are largely due to the differential mean level patterns demonstrated by the two aggressive groups of youths (i.e., bistrategic and coercive controllers).

Conclusions

With our calling attention to "the myth of the alpha male," we mean to point out – theoretically (including biological models) and empirically – that (a) the most dominant members of a social group are both male and female, (b) means other than overt aggression are employed to attain and defend these positions (i.e., relational aggression and prosocial behavior), and (c) both high dominance males and females attract similar social attention and draw others' social aspirations (especially females). Traditional work in social dominance typically defined dominance in terms of physical aggression (but see Pellegrini et al., in press). It thus comes as no surprise that the questions posed and methods employed centered on male superiority. Furthermore, females' social strengths (e.g., focus on relationships) are often construed as impediments to dominance attainment or at least mitigators of "real" (i.e., physical) aggression. In contrast, we see these social strengths as true social assets in hierarchical groups. Both dominant males and females enjoy these skills and orientations, and benefit from the social attention they attract.

References

Adler, P.A., & Adler, P. (1998). *Peer power: Preadolescent culture and identity*. New Brunswick, NJ: Rutgers University Press.

Archer, J. (2004). Sex differences in aggression in real-world settings: A meta-analytic review. *Review of General Psychology*, *8*, 291–322.

Bagwell, C.L., Coie, J.D., Terry, R.A., & Lochman, J.E. (2000). Peer clique participation and social status in preadolescence. *Merrill-Palmer Quarterly*, *46*, 280–305.

Bear, G.G. (1989). Sociomoral reasoning and antisocial behaviors among normal sixth graders. *Merrill-Palmer Quarterly*, *35*, 181–196.

Bear, G.G., & Rys, G.S. (1994). Moral reasoning, classroom behavior, and sociometric status among elementary school children. *Developmental Psychology*, *30*, 633–638.

Benenson, J.F. (1993). Greater preference among females than males for dyadic interaction in early childhood. *Child Development*, *64*, 544–555.

Bergman, L.R. (1998). A pattern-oriented approach to studying individual development: Snapshots and processes. In R.B. Cairns, L.R. Bergman, & J. Kagan (Eds.), *Methods and models for studying the individual* (pp. 83–121). Thousand Oaks, CA: SAGE.

Berndt, T.J. (1981). Age changes and changes over time in prosocial intentions and behavior between friends. *Developmental Psychology*, *17*, 408–416.

Bettencourt, B.A., & Miller, N. (1996). Gender differences in aggression as a function of provocation: A meta-analysis. *Psychological Bulletin*, *119*, 422–447.

Biernat, M., & Thompson, E.R. (2002). Shifting standards and contextual variation in stereotyping. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 12, pp. 103–137). London: Wiley.

Björkqvist, K., & Niemelä, P. (1992). New trends in the study of female aggression. In K. Björkqvist & P. Niemelä (Eds.), *Of mice and women: Aspects of female aggression* (pp. 3–16). San Diego, CA: Academic Press.

Björkqvist, K., Österman, K., & Kaukiainen, A. (1992). The development of direct and indirect aggressive strategies in males and females. In K. Björkqvist & P. Niemelä (Eds.), *Of mice and women: Aspects of female aggression* (pp. 51–64). San Diego, CA: Academic Press.

Bukowski, W.M. (2003). What does it mean to say aggressive children are competent or incompetent? *Merrill-Palmer Quarterly*, *49*, 390–400.

Buss, D.M. (1988). From vigilance to violence: Tactics of mate retention. *Ethology and Sociobiology*, *9*, 291–317.

Cairns, R.B., & Cairns, B.D. (1994). *Lifelines and risks: Pathways of youth in our time*. Cambridge: Cambridge University Press.

Cairns, R., Xie, H., & Leung, M. (1998). The popularity of friendship and the neglect of social networks: Toward a new balance. In W.M. Bukowski & A.H. Cillessen (Eds.), *Sociometry then and now: Building on six decades of measuring children's experiences with the peer group* (pp. 25–54). San Francisco: Jossey-Bass.

Campbell, A. (1999). Staying alive: Evolution, culture, and women's intrasexual aggression. *Behavioral and Brain Sciences*, *22*, 203–252.

Chandler, M.J. (1973). Egocentrism and antisocial behavior: The assessment and training of social perspective-taking skills. *Developmental Psychology*, *9*, 326–332.

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.

Clutton-Brock, T.M. (1983). Selection in relation to sex. In D.S. Bendall (Ed.), *Evolution: From molecules to men* (pp. 457–481). London: Cambridge University Press.

Coie, J.D., & Dodge, K.A. (1983). Continuities and changes in children's social status: A five-year longitudinal study. *Merrill-Palmer Quarterly*, *29*, 261–282.

Coie, J.D., & Dodge, K.A. (1998). Aggression and antisocial behavior. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (pp. 779–862). New York: Wiley.

Coie, J.D., Dodge, K.A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*, *18*, 557–570.

Coie, J.D., Dodge, K.A., & Kuperschmidt, J. (1990). Peer group behavior and social status. In S.R. Asher & J.D. Coie (Eds.), *Peer rejection in childhood* (pp. 17–59). New York: Cambridge University Press.

Coie, J., Dodge, K., Terry, R., & Wright, V. (1991). The role of aggression in peer relations: An analysis of aggression episodes in boys' play groups. *Child Development*, *62*, 812–826.

Crick, N.R. (1997). Engagement in gender normative versus non-normative forms of aggression: Links to social–psychological adjustment. *Developmental Psychology*, *33*, 610–617.

Crick, N.R., & Grotpeter, J.K. (1995). Relational aggression, gender, and social–psychological adjustment. *Child Development*, *66*, 710–722.

Crick, N.R., Ostrov, J.M., Appleyard, K., Jansen, E.A., & Casas, J.F. (2004). Relational aggression in early childhood: "You can't come to my birthday party unless . . .". In M. Putallaz & K. Bierman (Eds.), *Aggression, antisocial behavior, and violence among girls: A developmental perspective* (pp. 71–89). New York: Guilford Press.

Crick, N.R., & Rose, A.J. (2000). Toward a gender-balanced approach to the study of social–emotional development: A look at relational aggression. In E. Kofsky Scholnick & P.H. Miller (Eds.), *Toward a feminist developmental psychology* (pp. 153–168). Florence, KY: Taylor & Frances/Routledge.

Cross, S.E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin*, *122*, 5–37.

Daly, M., & Wilson, M. (1994). Evolutionary psychology of male violence. In J. Archer (Ed.), *Male violence* (pp. 253–288). New York: Routledge.

Darwin, C. (1871). *The descent of man, and selection in relation to sex*. London: John Murray.

Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

Dunbar, N.E., & Burgoon, J.K. (2005). Perceptions of power and interactional dominance in interpersonal relationships. *Journal of Social and Personal Relationships*, *22*, 207–233.

Eagly, A.H., & Wood, W. (1999). The origins of aggression sex differences: Evolved dispositions versus social roles. *Behavioral and Brain Sciences*, *22*, 223–224.

Eder, D. (1985). The cycle of popularity: Interpersonal relations among female adolescents. *Sociology of Education*, *58*, 154–165.

Farmer, T.W., & Rodkin, P.C. (1996). Antisocial and prosocial correlates of classroom social positions: The social network centrality perspective. *Social Development*, *5*, 176–190.

Führ, C. (1997). *The German education system since 1945. Outlines and problems*. Bonn: Inter Nations.

Galen, G.R., & Underwood, M.K. (1997). A developmental investigation of social aggression among children. *Developmental Psychology*, *33*, 589–600.

Geary, D.C. (1998). *Male, female: The evolution of human sex differences*. Washington, DC: American Psychological Association.

Geary, D.C., Byrd-Craven, J., Hoard, M.K., Vigil, J., & Numtee, C. (2003). Evolution and development of boys' social behavior. *Developmental Review*, *23*, 444–470.

Gilligan, C. (1982). *In a different voice*. Cambridge, MA: Harvard University Press.

Hawley, P.H. (1999). The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review*, *19*, 97–132.

Hawley, P.H. (2002). Social dominance and prosocial and coercive strategies of resource control in preschoolers. *International Journal of Behavioral Development*, *26*, 167–176.

Hawley, P.H. (2003a). Prosocial and coercive configurations of resource control in early adolescence: A case for the well-adapted Machiavellian. *Merrill-Palmer Quarterly*, *49*, 279–309.

Hawley, P.H. (2003b). Strategies of control, aggression, and morality in preschoolers: An evolutionary perspective. *Journal of Experimental Child Psychology*, *85*, 213–235.

Hawley, P.H. (2004, March). *The myth of the alpha male: Gender differences (and similarities) in beliefs about social dominance and resource control*. Symposium presentation at the Biennial Meeting of the Society for Research on Adolescence, Baltimore, MD.

Hawley, P.H. (2006). Evolution and personality: A new look at Machiavellianism. In D. Mroczek & T. Little (Eds.), *Handbook of personality development* (pp. 147–161). Mahwah, NJ: Erlbaum.

Hawley, P.H., Card, N.E., & Little, T.D. (2007). The allure of a mean friend: Relationship quality and processes of aggressive adolescents with prosocial skills. *International Journal of Behavioral Development*, *31*, 170–180.

Hawley, P.H., & Little, T.D. (1999). Winning some and losing some: A social relations approach to social dominance in toddlers. *Merrill-Palmer Quarterly*, *45*, 185–214.

Hawley, P.H., Little, T.D., & Pasupathi, M. (2002). Winning friends and influencing peers: Strategies of peer influence in late childhood. *International Journal of Behavioral Development*, *26*, 466–473.

Hawley, P.H., Little, T.D., & Rodkin, P. (2007). *Aggression and adaptation: The bright side to bad behavior*. Mahwah, NJ: Erlbaum.

Helgeson, V.S., & Fritz, H.L. (2000). The implications of unmitigated agency and unmitigated communion for domains of problem behavior. *Journal of Personality*, *68*, 1031–1057.

Hermann, S., Imme, U., & Meinlschmidt, G. (1998). *Sozialstrukturales Berlin – Eine disaggregierte statistische Sozialraumanalyse* [*Social structure of Berlin – Disaggregated statistical analyses of the social structure*]. Berlin: Senatsverwaltung für Gesundheit und Soziales.

Hogan, R., & Hogan, J. (1991). Personality and status. In D.G. Gilbert & J. Connolly (Eds.), *Personality, social skills, and psychopathology: An individual differences approach*. New York: Plenum Press.

Hrdy, S.B. (1999). *The woman that never evolved*. Cambridge, MA: Harvard University Press (Original published 1981).

Hughes, C., White, A., Sharpen, J., & Dunn, J. (2000). Antisocial, angry, and unsympathetic: "Hard-to-manage" preschoolers' peer problems and possible cognitive influences. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *41*, 169–179.

Jöreskog, K.G., & Sörbom, D. (2001). *LISREL 8: User's reference guide*. Lincolnwood, IL: Scientific Software International.

Keane, S.P., & Calkins, S.D. (2004). Predicting kindergarten peer social status from toddler and preschool problem behavior. *Journal of Abnormal Child Psychology*, *32*, 409–424.

Kracke, B., & Schmidt-Rodermund, E. (2001). Adolescents' career exploration in the context of educational and occupational transitions. In J.E. Nurmi (Ed.), *Navigating through adolescence: European perspectives* (pp. 141–165). New York: Routledge.

LaFrance, M., & Henley, N.M. (1994). On oppressing hypotheses: Or differences in nonverbal sensitivity revisited. In H.L. Radtke & H.J. Stam (Eds.), *Power/gender: Social relations in theory and practice* (pp. 287–311). Thousand Oaks, CA: SAGE.

Lease, M.A., 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.

Little, T.D. (1997). Mean and covariance structures (MACS) analyses of cross-cultural data: Practical and theoretical issues. *Multivariate Behavioral Research*, *32*, 53–76.

Little, T.D., Brauner, J., Jones, S.M., Nock, M.K., & Hawley, P.H. (2003). Rethinking aggression: A typological examination of the functions of aggression. *Merrill-Palmer Quarterly*, *49*, 343–369.

Little, T.D., Card, N.A., Slegers, D.W., & Ledford, E.C. (in press). Modeling contextual effects with multiple-group MACS models. In T.D. Little, J.A. Bovaird, & N.A. Card (Eds.), *Modeling ecological and contextual effects in longitudinal studies of human development*. Mahwah, NJ: Erlbaum.

Little, T.D., Cunningham, W.A., Shahar, G., & Widaman, K.F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, *9*, 151–173.

Little, T.D., Slegers, D.W., & Card, N.A. (2006). A non-arbitrary method of identifying and scaling latent variables in SEM and MACS models. *Structural Equation Modeling*, *1*, 59–72.

Little, T.D., & Wanner, B. (1997). *The Multi-CAM: A multidimensional instrument to assess children's action-control motives, beliefs, and behaviors* (Materialen aus der Bildungsforschung, No. 59, ISBN #3-87985-064-x). Berlin: Max Planck Institute for Human Development.

Lorenz, K. (1966). *On aggression*. New York: Bantam.

Maccoby, E.E. (1988). Gender as a social category. *Developmental Psychology*, *24*, 755–765.

Maccoby, E.E., & Jacklin, C.N. (1974). *The psychology of gender differences*. Stanford, CA: Stanford University Press.

Magnusson, D. (2003). The person approach: Concepts, measurement models, and research strategy. In S.C. Peck & R.W. Roeser (Eds.), *New directions for child and adolescent development. Person-centered approaches to studying development in context* (pp. 3–23). San Francisco: Jossey-Bass.

Marsh, H.W., Wen, Z., & Hau, K.-T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction. *Psychological Methods*, *9*, 275–300.
Maslow, A. (1940). Dominance-quality and social behavior in infra-human primates. *Journal of Social Psychology*, *11*, 313–324.
Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika*, *58*, 525–543.
Newcomb, A.F., Bukowski, W.M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial and average sociometric status. *Psychological Bulletin*, *113*, 99–128.
Olweus, D. (1978). *Aggression in the schools: Bullies and whipping boys*. Washington, DC: Hemisphere.
Ostrov, J.M., & Keating, C.F. (2004). Gender differences in preschool aggression during free play and structured interactions: An observational study. *Social Development*, *13*, 255–277.
Ostrov, J.M., Woods, K.E., Jansen, E.A., Casas, J.F., & Crick, N.R. (2004). An observational study of delivered and received aggression, gender, and social–psychological adjustment in preschool: "This white crayon doesn't work . . .". *Early Childhood Research Quarterly*, *19*, 355–371.
Paquette, J.A., & Underwood, M.K. (1999). Young adolescents' experiences of peer victimization: Gender differences in accounts of social and physical aggression. *Merrill-Palmer Quarterly*, *45*, 233–258.
Parkhurst, J.T., & Hopmeyer, A.G. (1998). Sociometric popularity and peer-perceived popularity: Two distinct dimensions of peer status. *Journal of Early Adolescence*, *18*, 125–144.
Pellegrini, A.D. (2004). Sexual segregation in childhood: A review of evidence for two hypotheses. *Animal Behaviour*, *68*, 435–443.
Pellegrini, A.D., & Archer, J. (2005). Sex differences in competitive and aggressive behavior: A view from sexual selection theory. In B.J. Ellis & D.F. Bjorklund (Eds.), *Origins of the social mind: Evolutionary psychology and child development* (pp. 219–244). New York: Guilford Press.
Pellegrini, A.D., Roseth, C.J., Mliner, S., Bohn, C.M., Van Ryzin, M., Vance, N., Cheatham, C.L., & Tarullo, A. (in press). Social dominance in preschool classrooms. *Journal of Comparative Psychology*.
Pellegrini, A.D., & Smith, P.K. (1998). Physical activity play: The nature and function of a neglected aspect of play. *Child Development*, *69*, 577–598.
Phillipsen, L.C., Deptula, D.P., & Cohen, R. (1999). Relating characteristics of children and their friends to relational and overt aggression. *Child Study Journal*, *29*, 269–289.
Pope, A.W., Bierman, K.L., & Mumma, G.H. (1991). Aggression, hyperactivity, and inattention–immaturity: Behavior dimensions associated with peer rejection in elementary school boys. *Developmental Psychology*, *27*, 663–671.
Pratto, F., Sidanius, J., & Stallworth, L.M. (1993). Sexual selection and the sexual and ethnic basis of social hierarchy. In L. Ellis (Ed.), *Social stratification and socioeconomic inequality: A comparative biosocial analysis* (pp. 111–137). Westport, CT: Praeger.
Rodkin, P.C., Farmer, T.W., Pearl, R., & Van Acker, R. (2000). Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology*, *36*, 14–24.
Rose, A.J., Swenson, L.P., & Waller, E.M. (2004). Overt and relational aggression and perceived popularity: Developmental differences in concurrent and prospective relations. *Developmental Psychology*, *40*, 378–387.
Rudman, L.A., & Glick, P. (1999). Feminized management and backlash toward agentic women: The hidden costs to women of a kinder, gentler image of middle managers. *Journal of Personality and Social Psychology*, *77*, 1004–1010.
Rudman, L.A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues*, *57*, 743–762.
Sebanc, A.M., Pierce, S.L., Cheatham, C.L., & Gunnar, M.R. (2003). Gendered social worlds in preschool: Dominance, peer acceptance and assertive social skills in boys' and girls' peer groups. *Social Development*, *12*, 91–106.
Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York: Cambridge University Press.
Sutton, J., Smith, P.K., & Swettenham, J. (1999). Socially undesirable need not be incompetent: A response to Crick and Dodge. *Social Development*, *8*, 132–134.
Taylor, S.E., Klein, L.C., Lewis, B.P., Gruenewald, T.L., Gurung, R.A.R., & Updegraff, J.A. (2000). Biobehavioral responses to stress in females: Tend-and befriend, not fight-or-flight. *Psychological Review*, *107*, 411–429.
Thorne, B. (1986). Girls and boys together but mostly apart: Gender arrangements in elementary schools. In W.W. Hartup & Z. Rubin (Eds.), *Relationships and development* (pp. 167–184). Hillsdale, NJ: Erlbaum.
Tremblay, R.E., Pihl, R.O., Vitaro, F., & Dobkin, P.L. (1994). Predicting early onset of male antisocial behavior from preschool behavior. *Archives of General Psychiatry*, *51*, 732–739.
Trivers, R.L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man 1871–1971* (pp. 136–179). Chicago: Aldine.
Underwood, M.K. (2003). *Social aggression among girls*. New York: Guilford Press.
Underwood, M.K. (2004). Gender and peer relations: Are the two gender cultures really all that different? In J.B. Kupersmidt & K.A. Dodge (Eds.), *Children's peer relations: From development to intervention* (pp. 21–36). Washington, DC: American Psychological Association.
Underwood, M.K., Galen, B.R., & Paquette, J.A. (2001). Top ten challenges for understanding gender and aggression in children: Why can't we all just get along? *Social Development*, *10*, 248–266.
Whiting, B.B., & Edwards, C.P. (1988). *Children of different worlds: The formation of social behavior*. Cambridge, MA: Harvard University Press.
Wrangham, R., & Peterson, D. (1996). *Demonic males: Apes and the origins of human violence*. New York: Houghton.
Zimmer-Gembeck, M.J., Geiger, T.C., & Crick, N.R. (2005). Relational and physical aggression, prosocial behavior, and peer relations: Gender moderation and bidirectional associations. *Journal of Early Adolescence*, *25*, 421–452.

Appendix

Peer-reported resource control type differences

Peer-reported variables: Social dominance. As shown in the upper portion of Table A1, the expected pattern of differences by resource control group were again well replicated when viewed from the perspective of peers. Peers, for example, see resource control in line with the theoretically proposed dominance hierarchy (e.g., bistrategic controllers being the most successful and non-controllers the least etc, collapsing over gender). A similar pattern emerged for both overt and relational aggression (e.g., bistrategic controllers being the most aggressive and non-controllers the least).

Peer-reported variables: Social centrality. Just as when the types are derived by the self, the peer group acknowledges liking prosocial controllers the most (M_{boys} = .28, M_{girls} = .65), followed by liking the bistrategic controllers (*M*s = .28; *d* = .44). Non-controllers were least liked (*M*s = –.37; *d* = –.59). In contrast to the self-defined groups, however, the distinctions are accentuated due to shared reporter variance. Not unlike self-report derived types, prosocial controllers win the most desired affiliation nominations (followed by bistrategic controllers), but bistrategic controllers as a group are perceived as the most popular (*M*s = .78; *d* = 1.14). Clear patterns also emerged for dislike nominations; namely coercive controllers are most disliked as a group (*M*s = .55; *d* = .73), followed by bistrategic controllers (*M* = .28; *d* = .37).

Peer–self agreement. Results pertaining to agreement were somewhat mixed when the self-reported variables were looked at in light of the peer-defined groups (bottom portion of Table A2). Generally, peer-defined bistrategic and prosocial controllers reported themselves high on prosocial influence relative to the other groups (a defining characteristic). Also, peer-defined bistrategic controllers as a group admitted to being high on coercive influence as well as resource control. Results for ability, importance, and the motivational constructs were far less clear. Agreement emerged again for the aggression variables, with peer-defined bistrategic and coercive controllers admitting to being overtly and relationally aggressive, bistrategic controllers especially so.

Gender differences and similarities within peer-defined resource control groups

Peer-reported variables: Social dominance. When derived via peer nomination, we see only slight evidence that peers drew gender distinctions on resource control (in prosocial and coercive controllers favoring boys), and that peers saw peer-nominated bistrategic controllers (male and female) as the most successfully competitive by far (*M*s = 1.20; *d* = 2.30; see upper portion of Table A2). Gender differences emerged within the groups in ways somewhat consistent with gender norms; bistrategic boys were seen as highly overtly aggressive (*M* = 1.04; *d* = 1.85) and bistrategic girls as highly relationally aggressive (*M* = 1.04; *d* = 1.81). Yet, peers also rated bistrategic boys

as highly relationally aggressive (more so than most girls; $M = .60$; $d = 1.05$) and bistrategic girls as highly overtly aggressive (as overtly aggressive as coercive boys; $M = .60$; $d = 1.07$). Coercively controlling boys and girls displayed a similar though less extreme pattern.

Peer-reported variables: Social centrality. Peer-defined prosocially controlling girls received the most "like most" ($M = .65$; $d = 1.03$) and desired affiliation nominations ($M = .72$; $d = 1.20$), making them more socially attractive than their male counterparts. Bistrategic boys, however, were no more liked than bistrategic girls. Moreover, the bistrategic girls were rated as socially attractive as the prosocially controlling boys. The same pattern emerged for desired affiliation (Ms = .23; $d = .39$). Thus, these data do not suggest that highly dominant girls suffer a social backlash.

Self-reported social dominance variables. Similar to the self-report derived groups, the peer-defined groups evidenced no within group gender distinctions on self-rated prosocial control (see bottom portion of Table A2). Boys, however, rated themselves as more coercive controlling than the girls for all groups. A similar pattern emerged for resource control, need for recognition, extrinsic social motives. In contrast, girls rated themselves higher on intrinsic social motives than boys for all groups.

Interestingly, when the resource control groups were determined by peers, bistrategic boys rated themselves as the most overtly aggressive ($M = .40$; $d = .56$), followed by bistrategic girls ($M = 22$; $d = .31$). Gender differences in overt aggression were not evident for prosocial or coercive controllers. Gender differences were also not evident in bistrategic, prosocial, or coercive controllers for relational aggression. The overall gender differences for both overt and relational aggression detected earlier (Table A1) appear to be due to gender differences within the typical and non-controlling groups.

Table A1

Gender distributions for peer-reported resource control groups

	BC	*PC*	*CC*	*TC*	*NC*
Boys	158	125	165^{+}	254	111
Girls	135	167	126^{-}	324	158
Total	293	292	291	578	269

$\chi^2_{(4)} = 24.38$, $p < .001$

Note. BC, bistrategic controllers; PC, prosocial controllers; CC, coercive controllers; TC, typical controllers; NC denotes non-controllers. Cells with a '+' superscript were significantly higher than expected by chance and cells with a '–' superscript were significantly lower than expected by chance ($p < .05$).

Table A2

Constrained latent means by peer-reported resource control group and gender

	BC		*PC*		*CC*		*TC*		*NC*	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Peer-reported variables										
Social dominance										
Resource control	1.20	1.20	.00	.28	.00	–.17	–.41	–.41	–.54	–.54
Overt aggression	1.04	.60	–.28	–.28	.60	.00	–.28	–.38	–.38	–.50
Relational aggression	.60	1.04	–.38	–.15	.21	.79	–.38	–.28	–.50	–.38
Social centrality										
Peer liking	.28	.28	.28	.65	–.37	–.19	–.19	.00	–.37	–.37
Peer disliking	.28	.28	–.36	–.36	.55	.55	–.19	–.19	–.19	–.19
Desired affiliation	.23	.23	.23	.72	–.31	.00	–.31	.00	–.31	–.31
Perceived popularity	.79	.79	.44	.79	–.29	–.29	–.35	–.35	–.52	–.52
Self-reported variables										
Prosocial influence	.30	.30	.19	.19	–.13	–.13	–.13	–.13	–.13	–.13
Coercive influence	.46	.13	.00	.00	.13	.00	.00	–.23	.00	–.23
Resource control	.43	.23	.23	.00	.00	.00	.00	–.27	.00	–.27
Influence ability	.00	.00	.15	–.07	.00	.00	.00	–.07	.00	.00
Influence importance	.00	.00	.00	–.07	.00	.00	.00	–.07	.00	–.07
Need for recognition	.16	.00	.16	–.16	.16	.00	.00	–.16	.00	.00
Extrinsic social motives	.27	–.17	.00	–.25	.27	–.17	.14	–.17	.27	–.17
Intrinsic social motives	–.25	.27	.00	.27	–.25	.27	–.25	.14	–.25	.14
Overt aggression	.40	.22	–.15	–.15	.14	.14	.00	–.20	.00	–.27
Relational aggression	.22	.22	–.15	–.15	.14	.14	.00	–.20	.00	–.15

Note. The outcomes by peer-reported resource control groups are reported above. BC, bistrategic controllers; PC, prosocial controllers; CC, coercive controllers; TC, typical controllers; NC, non-controllers. First, the model fit was very good for the peer reported dependent variables: $\chi^2(686, N = 1723) = 1287.5$, RMSEA = .065(.059–.071), NNFI = .99, CFI = .99 (the constrained means did not differ from the unconstrained means: $\Delta\chi^2(43, N = 1723) = 47.6$, $p = .29$) as well as for the self-reported dependent variables (bottom portion of table): $\chi^2(3960, N = 1723) = 6464.2$, RMSEA = .054(.052–.057), IFI = .96, CFI = .96 (again, the constrained means did not differ from the unconstrained means: $\Delta\chi^2(78, N = 1723) = 87.7$, $p = .21$).