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Original Article

Dominance-Popularity Status, Behavior, and the Emergence of Sexual Activity in Young Adolescents

Eddy H. de Bruyn, Institute of Educational and Behavioral Studies, Amsterdam, The Netherlands. Email: eddy.iebs@yahoo.com (Corresponding author).

Antonius H. N. Cillessen, Radboud Universiteit Nijmegen and University of Connecticut, The Netherlands and USA.

Glenn E. Weisfeld, Wayne State University, USA.

Abstract: In this paper, we investigated the sexual activity levels of several subtypes of middle adolescents (age 14-15 years). The subtype profiles were based on dominance-popularity status and a range of behaviors associated with dominance and popularity. In addition, gender differences in behavioral profiles were examined among dominant-popular, sexually active young adolescents. Results showed that socially dominant and popular young adolescent boys who exhibited a highly aggressive profile were more sexually active than their low-status and non-aggressive male peers; dominant-popular girls who were very attractive and gossips were more sexually active than their female peers. The results are discussed from an evolutionary psychological framework.

Keywords: dominance, popularity, peer status, sexual activity, young adolescence, aggression, attractiveness

Introduction

One of the most successful theses in evolutionary theorizing concerns the association between social hierarchy position and sexual opportunity. Concisely stated, individuals with higher status have increased access to mating opportunities (be it potential or actual mates), potentially leading to higher reproductive success (Betzig, 1986; Hopcroft, 2006; Kanazawa, 2003; Perusse, 1993). The present study was designed to investigate this central thesis in middle adolescence. We propose that middle adolescence presents an interesting phase in human ontogeny to test this thesis for two reasons. First, in middle adolescence, status hierarchies based on social dominance, reputation, and consensual popularity are ubiquitous, highly stable, and firmly embedded (Cillessen and

Rose, 2005; Cillessen and Borch, 2006; Dong, Weisfeld, Boardway, and Shen, 1996; Weisfeld, 1987). Second, emerging sexuality is fundamental to adolescence (Schlegel, 1995; Weisfeld, 1999; Weisfeld and Woodward, 2004). However, in middle adolescence (14-15 years), access to mating opportunities is still a scarce resource, with mating opportunities for some but not for others. We therefore hypothesized that high-status middle adolescent individuals would be more sexually active than low-status middle adolescent individuals.

Evolutionary Psychology: Status and Reproductive Success

Behavioral theories concerning sexual behavior, such as Sexual Selection Theory (e.g., Andersson, 1994; Daly and Wilson, 1983; Darwin, 1871; Trivers, 1972) and Sexual Strategies Theory (e.g., Buss, 2003) are firmly embedded in an evolutionary framework and have successfully predicted one important reward that is bestowed on high-status individuals: more mating opportunities and thus increased reproductive success (Barkow, 1989), particularly for males of most species. According to Betzig (1986), “hierarchical power should predict a biased outcome in conflict resolution, which should in turn predict size of the winner’s harem, for men, a measure of success in reproduction” (p. 9). This is true for human adults in many cultures, both ‘modern’ as well as ‘primitive’ (Betzig, 1986). In fact, this theory seems to be confirmed for non-human primates (Cheney, 1983; Cowlshaw and Dunbar, 1991; Dewsbury, 1982; Gray, 1985; Maslow, 1936) and other animals from widely differing ecologies (Ellis, 1995) such as squirrels (Farentinos, 1972), cockerels (Kratzer and Craig, 1980), and cockroaches (Breed, Smith, and Gall, 1980).

For females, it is generally argued that dominance is not necessarily a path to more copulations, as it is for males. It appears that important benefits bestowed upon dominant women are access to resources and less harassment from rivals (Campbell, 2002). Thus, dominant females tend to have higher offspring survival rates, at least among simians (Pusey, Williams, and Goodall, 1997); thus, dominance among females also appears to be linked to reproductive success.

In humans, status hierarchies are continuously present across ontogeny, starting at the age at which children first interact in small groups. Consequently, hierarchies based on dominance, prestige, or consensual popularity are found among preschoolers (e.g., Hawley, Johnson, Mize, and McNamara, 2007; Hawley and Little, 1999; Pellegrini, Roseth, Milner, Bohn, Van Ryzin, Vance, Cheatham, and Tarullo, 2007; Strayer and Strayer, 1976), in childhood (Omark, Omark, and Edelman, 1975; Zeller, Vannatta, Shafer, and Noll, 2003), in adolescence (De Bruyn and Cillessen, 2006a, 2006b; Hawley, 2003; Savin-Williams, 1976; 1977; 1979; 1980a; 1980b), and in adulthood (Austin and Bates, 1974; Cummins, 2005; Hawley, 1999). From a Darwinian view, high status should carry some kind of reward or privilege (Henrich and Gil-White, 2001). These rewards range from toys in toddlerhood to an increase in quality and quantity of mates in adulthood.

Status Hierarchies in Middle Adolescence

School systems in Western society place individuals from the age of toddlerhood up into late adolescence in small groups (classrooms of up to 30 students) of same-aged peers for long periods of time (8 hours daily, 5 days a week). This educational organization is fertile ground for the formation of status hierarchies and developmental psychologists are increasingly identifying the behaviors that determine the emergence of peer status in

middle adolescence. The main status hierarchy in middle adolescence is based on dominance, prestige, and reputation, often referred to as *perceived popularity* (Cillessen and Rose, 2005; Parkhurst and Hopmeyer, 1998), *judgmental popularity* (Babad, 2001), *reputational popularity* (Prinstein and Cillessen, 2003), or *consensual popularity* (De Bruyn and Van den Boom, 2005; De Bruyn and Cillessen, 2006a). The last term reflects the fact that this type of popularity does not measure personal liking but the shared view of the peer group of who is socially dominant or socially central. The terms *social dominance* and *consensual popularity* are both in common usage in the child and adolescent psychological literature. However, the term *popularity* never applies to non-humans, and considering that the present article intends to provide an evolutionarily framed explanation of adolescent behavior by drawing on information from both animal and human research, we decided to use the term *dominant-popular* to indicate adolescent individuals who are at the top of the social dominance *cum* reputation-based popularity hierarchy.

Dominant-popular middle adolescents tend to be attractive, fashionable, athletic (especially in the US, but less so in, for instance, China, e.g., Dong, et al., 1996), and aggressive and high in bullying (Cillessen and Mayeux, 2004; Cillessen and Rose, 2005; De Bruyn and Cillessen, 2006a, 2006b, 2010; Parkhurst and Hopmeyer, 1998). Thus, in most modern Western societies, the dominance-popularity hierarchy in middle adolescence is a well-described hierarchical organization of which individuals at the high end exhibit an idiosyncratic behavioral profile based on a combination of attractiveness, sartorial finesse, and aggression or fighting ability.

Sex as a Scarce Resource in Middle Adolescence

In Western societies, most middle adolescence children enter pubescence. Pubescence is sexual maturation and, not surprisingly, an important main motivational change takes place in middle adolescence around sexual behavior (Jones and Bayley, 1950; Weisfeld, 1999). In middle adolescence, sexual relationships are becoming an important, yet scarce, resource for both boys and girls (Pellegrini and Bartini, 2001). Thus, it appears that some adolescents have many partners, some have one, but the majority has none (Sorensen, 1973; Laumann, Gagnon, Michael, and Michaels, 1994) making middle adolescence a time of great competitiveness for the same sexually active peers. Cultural variability between Western and tribal societies does exist, where in the majority of tribal societies, premarital sex during puberty is typical for boys and girls (Broude and Greene, 1976). However, the present article is concerned with a typical modern society in Western Europe.

Although the idea of sexual relationships has firmly inundated the adolescent mind, taking the first step of approach or flirtation towards someone else is risky. By doing so, an adolescent crosses the boundary of sex-segregation that has been in place since middle childhood (Maccoby 1998; Pellegrini and Long, 2003). Any initiative towards a member of the opposite sex may end in rejection and public humiliation. Thus, it is hypothesized that it takes an adolescent with a certain behavioral repertoire and status to cross that boundary. It is unlikely that this type of middle adolescent is at the bottom of the peer group hierarchy, but is more likely to be a high-status, dominant-popular peer.

The notion of sex as a resource, for which adolescents compete intensely, is not new. Several developmental psychologists have postulated this notion (e.g., Pellegrini, 2002; Pellegrini and Bartini, 2001; Weisfeld, 1999; Weisfeld and Woodward, 2004).

Several studies point towards the notion that adolescents who display behaviors typical of dominant-popular peers are more sexually active than low-ranking ones. For instance, Mazur, Halpern, and Udry (1994) revealed that dominant looking males had more coital opportunities than submissive looking ones. Adolescent boys high in toughness and fighting ability appeared popular with girls (Feldman and Weisfeld, 1973) and bullies have been found to date relatively early (Connolly, Pepler, Craig, and Taradash, 2000). More recent studies in the US have reported a positive association between dominance-popularity status and sexual activity (Mayeux, Sandstrom, and Cillessen, 2008) and the practice of oral sex (Prinstein, Meade and Cohen, 2003), both studies conducted among older adolescents. However, we were unable to find studies of the relationship between dominance-popularity status and actual sexual activity in middle adolescence. Pellegrini and Bartini (2001) and Pellegrini and Long (2003) probably have come closest to confirming this relationship by using dating popularity as a proxy for sexual activity. The present study was designed to fill this lacuna by asking middle adolescents about their actual sexual activity. Therefore:

Hypothesis 1: High dominant-popular adolescents report higher sexual activity levels than their low dominant-popular peers.

Dominance-Popularity and Gender Differences in Behavior

An important question is whether we should expect gender differences in the behavioral repertoire associated with dominance and sexual activity. Barkow (1989) predicted that intersexual (mate choice) selection by females depends on three criteria. First, desirable males should possess an *agonistic quality* based on physique; second, desirable males should show *willingness* to provide parental investment; and third, they should display the *ability* for parental investment. However, parental investment should matter less in middle adolescence than in adulthood, considering the fluidity of dating in middle adolescence and the preponderance of short-term relationships (Laumann, et al., 1994; Sorensen, 1973). Relevant to this line of reasoning is that adult women, when seeking short-term relationships, placed great emphasis on adult male physical prowess (Buss and Schmitt, 1993). Also, Campbell (1995; 1999) argued that the rise in male aggression found in early adolescence (e.g., Björkvist, Lagerspetz, and Kaukianen, 1992) was likely due to both intrasexual competition with the aim of subduing rivals, and intersexual competition with the aim of displaying attributes that attract females (Campbell, 1999). In the case of middle adolescent males, both strategies are greatly abetted by physical strength and agonistic behavior. Pellegrini and colleagues (Pellegrini and Bartini, 2001; Pellegrini and Long, 2003) also showed that aggression to gain dominance was positively related to hypothetical dating preference. The present research will look at sexual activity level instead of hypothetical dating preferences. Therefore, we expected a strong association among middle adolescent males between aggression and sexual activity. Hence:

Hypothesis 2: Sexually active middle adolescent boys are high in fighting and bullying behaviors.

A different behavioral profile was expected of sexually precocious middle adolescent girls. Based on principles derived from evolutionary psychology, Campbell

(1995; 1999; 2002, 2004) argued that females use both passive and active strategies towards intersexual mate attraction and intrasexual competition. The passive strategy is a demonstration of attributes that are valued highly by males, such as youth and beauty. Several studies among adults have demonstrated this strategy (Buss and Barnes, 1986; Rhodes, 2006; Rhodes, Simmons, and Peters, 2005). In fact, physical attractiveness among girls probably serves as a two-sided sword: attracting interesting males and also intimidating other girls (Campbell, 2002). The active strategy is aimed at subduing rivals, and girls thereby gain access to valuable resources and the best mates. Although it is correct to say that women do not really have to fight each other in order to mate (because they can always find a willing male), it makes sense for them to vie for the highest quality mates available. In fact, research has shown that antagonism is as rife among girls as it is among boys, with a similar peak in middle adolescence (e.g., Björkvist et al., 1992). However, due to the greater risk to their reproductive fitness and the fact that females gain less from multiple matings secured by fighting than do males, females tend to avoid direct physical confrontations (Campbell, 1995, 1999; Daly and Wilson, 1994), instead relying on ridicule, defamation, shunning, and malicious gossip (Björkvist et al., 1992; Hess and Hagen, 2006; Savin-Williams, 1987). Indeed, Pellegrini and Long (2003) showed that middle adolescent girls' success at dating was associated with indirect aggression such as gossip. Also, a link has been found between aggression among girls and their subsequent number of children (Underwood, Kupersmidt, and Coie, 1996), indicating a reproductive fitness payoff, even for females. Thus:

Hypothesis 3: Sexually active middle adolescent girls are physically attractive and high in relational aggression such as gossip.

Research Goals of the Present Study

This study examined different types of middle adolescents through an individual differences approach by examining status and behavioral profiles consisting of dominance-popularity status, behavioral repertoire, and sexual activity in middle adolescence. It was hypothesized that highly dominant-popular middle adolescents who display high levels of aggression (physical for boys, relational for girls) and attractiveness (in particular for girls), are relatively sexually precocious at the age of 14 years.

Materials and Methods

Participants and Procedure

The target sample consisted of 381 middle adolescents aged 14-to-15 years (190 boys, 191 girls, M age = 14.42, SD = .52), who formed the complete third-year cohort of two secondary schools in The Netherlands. Because a few students were absent during testing due to illness or other reasons, the actual sample consisted of 354 students (177 boys, 177 girls).

The data came from an ongoing project on school behavior and achievement across adolescence, and were collected in early spring at two high schools in two different cities in The Netherlands. Prior to data collection, the school board sent a letter to all parents containing detailed information about the study. Parents were informed that students would be asked about their behaviors (e.g., interpersonal and sexual) and their peers' behaviors.

The letter indicated that student participation was voluntary. Parents could return the letter if they did not wish their child to participate. According to Dutch law, IRB approval was not needed for this study due to its non-experimental nature. None of the parents refused participation.

Research assistants administered the computer-based questionnaire to students individually during quiet study periods at school. Students had been informed that participation was voluntary and that their answers would be kept confidential. In addition, student assent was obtained on the day of data collection. Immediately prior to testing, students were reminded of the goals of the study and the voluntary nature of their participation. All students present at the time of data collection agreed to participate and completed the questionnaire. It was not possible to hold makeup sessions at a later date for students who were absent on the day of testing (13 boys and 14 girls)

Measures

Peer nominations. In order to collect data regarding participants' social status and social behaviors, sociometric methods were used. Students were presented with a list of names of all classmates in which the first names were in alphabetical order. A computer program ensured that a student's own name did not appear in this list. Although students in the participating schools share breaks in common areas, the majority of school time (7 to 8 hours daily) was spent with students from their own classroom. Therefore, nominations were restricted to the student's own classroom. Cross-gender voting was permitted.

Dominance-popularity, social behavior, and appearance. Positive and negative nominations were solicited for ten constructs. These constructs fell into four groups: social dominance-popularity, antisocial behavior, prosocial behavior, and physical appearance. For each construct, participants were again asked to name three classmates who displayed it the most and three who displayed it the least. By using both positive and negative nominations, a broad picture of adolescents' traits and behaviors was obtained. Dominance-popularity was assessed by two separate constructs, social dominance and consensual popularity. Social dominance was assessed by asking participants to nominate three classmates who "played the boss" most and three classmates who "played the boss" least. In Dutch "Playing the boss" corresponds most closely to the concept of being dominant. Asking directly who is most and least dominant was not comprehended well by respondents in pilot studies. In addition to social dominance, a traditional measure of adolescent peer group status was assessed: *consensual popularity*. Participants were asked to indicate three classmates who were most popular and three classmates who were least popular. Antisocial behavior was measured by nominating three classmates who displayed the following behaviors most and three who displayed these behaviors least: "is mean," and "bullies." Two other types of antisocial behavior were investigated, physical and relational aggression. Physical aggression was assessed by nominations of three classmates who "fight" most and three who "fight" least. Relational aggression was assessed by nominations of three classmates who "gossip" most and three who do this least. Prosocial behavior was measured with three most and three least nominations of "keeps promises" and three most and three least nominations of being "friendly". The former has been shown to be correlated with being considered friendly (e.g., De Bruyn and Van den Boom, 2005). Also, keeping promises has been argued to be the cornerstone of the evolution of reciprocal altruism, or 'tit-for-tat' behavior (Axelrod, 1984). Finally, physical attractiveness was

measured by most and least nominations of “attractive” and “dressing hip”.

In addition, five constructs were included for cluster analysis validating purposes (e.g., De Bruyn and Cillessen, 2006a): leadership, friendships, academic behaviors, being victimized, and being considered boring. The first was assessed by asking participants to nominate three classmates they consider most like a leader and three they consider least like a leader. The second was assessed by asking participants to nominate three classmates whom they consider their best friends and three classmates with whom they would never want to be friends. Academic behavior was assessed by asking participants to nominate three classmates who “showed disrespect to teachers” most and three who showed disrespect to teachers least, and three classmates who “are attentive in class” most and three who were least attentive in class. For victimization, participants were asked to nominate classmates who were victimized most. For being considered boring, participants were asked to nominate three classmates who were most, and three classmates who were least boring. Each validating construct was chosen because past research had shown high associations with the clustering variables used in the cluster analysis. For instance, being considered a leader is closely related to dominance-popularity; the number of nominated friendships is highly associated with being considered friendly; academic behavior is associated with dominance-popularity, in particular for a subgroup of dominant-popular students (see, e.g., De Bruyn and Cillessen, 2006a; Farmer, Estell, Bishop, O’Neal, and Cairns, 2003; Jonkmann, Trautwein, and Lüdtke, 2009); and being considered boring has been shown to be highly correlated with low dominance-popularity (e.g., De Bruyn and Cillessen, 2006a; De Bruyn and Van den Boom, 2005).

For all of the above nomination constructs, the difference between the number of positive and negative nominations received was computed for each student and standardized within classrooms.

Sexual activity. Middle adolescent sexual activity was assessed by two methods, self-report and a report by a designated “social expert”. The first method consisted of asking each participant whether or not they had engaged in (1) kissing, (2) heavy petting (defined as genital touching and/or oral sex), and (3) sexual intercourse. The phrasing of these questions followed procedures from a nationwide Dutch questionnaire on sexuality in adolescence conducted by the Dutch Ministry of Health (De Graaf, Meijer, Poelman, and Vanwesenbeeck, 2005). Subsequently, participants were categorized into three groups: those who had done “*nothing*,” those who had “*only kissed*,” and those who had engaged in “*heavy petting and/or intercourse*.”

The second method consisted of interviewing social experts about the sexual activity of classmates. Social experts were appointed by the headmaster of each class in response to the question ‘which two boys and two girls in your class are the most knowledgeable about their classmates’ social lives?’ The social experts were interviewed privately and were asked to indicate each classmate’s sexual activity level in the same wording as the self-report. If they had no knowledge about a classmate’s sexual activity, they left their answer blank. The rank-order correlation between self-reports and social experts was .78 ($P < .01$), validating the self-report of sexual activity. Subsequently, the self-reported data were used in the analyses.

Results

Results are presented in four sections. First, descriptive statistics of all variables are presented. Second, cluster analyses were conducted as an individual differences person-centered method in order to identify groups of adolescents with idiosyncratic patterns of status and behavior (e.g., De Bruyn and Cillessen, 2006a). Third, the clusters were compared in terms of their sexual activity level. And fourth, a variable-centered approach was applied, in which an ANOVA was used to identify differences in behavior and sexual activity level at the univariate level. In order to investigate multivariate associations between status, behavior, and sexual activity, a discriminant function analysis was conducted. This multiple-method approach is very pertinent to identifying subgroups of adolescents as well as the specific behaviors associated with differing levels of sexual activity. A good example of this kind of multi-method approach is Jonkmann, et al.'s (2009) study on the heterogeneity of social dominance behaviors. Gender was included in all analyses.

Descriptive Statistics of Status and Behaviors by Gender

A 2 (Gender) MANOVA on clustering and validating variables used in this study yielded a multivariate effect of gender, $F_{9, 344} = 14.46, P < .001$, partial $\eta^2 = .27$. Univariate tests (see Table 1) revealed a small gender difference in favor of girls for being dominant-popular (.01; the effect size, *partial* η^2 , in parentheses), being friendly (.02), keeping promises (.02), being attractive (.01) and being attentive in class (.02). A small gender difference in favor of boys was found for being victimized (.02). An intermediate gender difference in favor of boys was found for bullying (.03). Large gender differences were found for being a gossip (.11), hip dress (.04) (both in favor of girls), and fighting (.12) (in favor of boys). No other gender differences were encountered.

Table 1
Gender Differences in Status and Behaviors in Early Adolescence

	Boys		Girls		Effect Size	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	$F_{1, 352}$	Partial η^2
<i>Clustering variables</i>						
Dominant-Popular	-.10	1.02	.10	.94	3.82*	.01
Likeable	-.12	.97	.12	.99	5.27*	.02
Plays the Boss	-.02	1.02	.02	.95	.09	.00
Fights	.34	1.16	-.34	.60	40.22***	.12
Gossips	-.33	.63	.33	1.15	45.31***	.11
Mean	-.02	.86	.02	1.10	.15	.00
Bully	.17	1.05	-.17	.88	11.36**	.03
Keeps Promises	-.12	1.01	.12	.95	5.23*	.02
Attractive	-.12	.86	.12	1.10	4.92*	.01
Hip Dress	-.19	.95	.19	.98	13.78***	.04
<i>Validating variables</i>						
Leader	.02	.97	-.02	.99	1.21	.00
Friendship	-.09	.96	.09	1.00	2.81	.01
Victim	.12	1.09	-.12	.85	5.53*	.02
Disrespectful to Teacher	-.01	.92	.01	1.04	.01	.00
Attentive in Class	-.12	.94	.12	1.01	5.37*	.02
Boring	.03	1.01	-.03	.95	.45	.00

Note. * $P < .05$; ** $P < .01$; *** $P < .001$.

Identification and Description of Clusters

We chose cluster analysis as the first method of analysis because of the person-centered approach. This approach has been very fruitful in the past in discovering subtypes of individuals who may be high on one dimension (e.g., dominance-popularity) but who may differ widely on other dimensions, such as aggression and likeability (e.g., De Bruyn and Cillessen, 2006a; Farmer, et al., 2003; Jonkmann et al., 2009).

Hierarchical cluster analysis was used to classify boys and girls on the basis of dominance-popularity status, friendliness, and the behavioral dimensions. In order to minimize within-cluster variance, Ward’s method of clustering was used (Aldenderfer and Blashfield, 1984). This resulted in a three-cluster solution for both genders. Because cluster solution is affected by sample size, membership stability was tested by applying the same cluster technique to a two-thirds random selection of the original sample. This new cluster analysis revealed a stable pattern with 87% of the participants maintaining their original cluster membership.

Boys. A 3 (Cluster) MANOVA was conducted on the scores for dominance-popularity, friendliness, and the behavioral dimensions. A significant multivariate effect of cluster was found, $F_{20, 330} = 32.22, P < .001$, partial $\eta^2 = .66$. The univariate effect was also significant for each clustering variable: dominant-popular, $F_{2, 174} = 72.85$, partial $\eta^2 = .46$; friendliness, $F_{2, 174} = 15.44$, partial $\eta^2 = .15$; being bossy, $F_{2, 174} = 131.89$, partial $\eta^2 = .60$; fighting, $F_{2, 174} = 76.48$, partial $\eta^2 = .47$; gossip, $F_{2, 174} = 47.86$, partial $\eta^2 = .36$; being mean, $F_{2, 174} = 56.94$, partial $\eta^2 = .40$; bullying, $F_{2, 174} = 163.94$, partial $\eta^2 = .65$; keeping promises, $F_{2, 174} = 13.54$, partial $\eta^2 = .14$; attractive, $F_{2, 174} = 89.92$, partial $\eta^2 = .51$; dressing hip, $F_{2, 174} = 83.87$, partial $\eta^2 = .49$ (All $P < .001$).

Table 2

Means and Standard Deviations for Clustering and Validation Variables for Early Adolescent Boys’ Clusters

	High Dominant-Popular N = 32		Average N = 117		Low Dominant-Popular N = 28	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Clustering variables</i>						
Dominant-Popular	.77 _a	1.26	.00 _b	.50	-1.54 _c	.90
Friendliness	-.68 _a	1.02	.15 _b	.70	-.60 _a	1.36
Plays the Boss	1.48 _a	1.06	-.16 _b	.45	-1.14 _c	.71
Fights	1.83 _a	1.06	.21 _b	.76	-.82 _c	.96
Gossips	.28 _a	.62	-.34 _b	.43	-1.01 _c	.67
Mean	.95 _a	.87	-.08 _b	.52	-.87 _c	.91
Bully	1.97 _a	1.04	-.22 _b	.51	-.25 _b	.33
Keeps Promises	-.90 _a	1.49	.06 _b	.70	.03 _b	1.03
Attractive	.60 _a	.69	.00 _b	.54	-1.43 _c	.75
Hip Dress	.71 _a	.76	-.11 _b	.57	-1.55 _c	.96
<i>Validating variables</i>						
Leader	1.31 _a	1.16	-.09 _b	.49	-1.02 _c	.67
Friendship	-.40 _a	.97	.20 _b	.58	-.92 _a	1.49
Victim	-.19 _a	.60	-.14 _a	.78	1.58 _b	1.45
Disrespectful to Teacher	1.23 _a	1.06	-.11 _b	.42	-.97 _c	.83
Attentive in Class	-1.02 _a	1.02	-.02 _b	.60	.49 _b	1.29
Boring	-.81 _a	.89	-.11 _b	.54	1.60 _c	1.01

Note. Cluster means with different subscripts are significantly different from one another at $P < .01$.

Hierarchies and sexual activity

Post-hoc comparisons with Bonferonni corrections demonstrated how the three clusters of boys differed on the clustering variables (see Table 2). Based on these comparisons, the clusters were described as follows: *High Dominant-Popular* ($N = 32$, 18%), boys were characterized as very dominant-popular, playing the boss, fighting a lot, being mean, bullies, attractive, and dressing hip. They were judged low on friendliness and low on keeping promises. The second cluster was named *Average Boys* ($N = 117$, 62%), considering that as a group, these boys were judged average in dominance-popularity and they did not display extreme behaviors. The third cluster was named *Low Dominant-Popular* ($N = 28$, 15%). The latter group's behavioral profile was characterized by very low scores on dominance-popularity, friendliness, playing the boss, fighting, gossip, mean, attractive, and hip dress.

Girls. A 3 (Cluster) MANOVA was also conducted on the clustering variables for girls, again yielding a significant multivariate effect for cluster, $F_{20, 330} = 26.02$, $P < .001$, partial $\eta^2 = .61$. The univariate effect was significant for each variable: dominant-popular, $F_{2, 174} = 45.38$, partial $\eta^2 = .34$; friendliness, $F_{2, 174} = 29.80$, partial $\eta^2 = .26$; playing the boss, $F_{2, 174} = 121.92$, partial $\eta^2 = .58$; fighting, $F_{2, 174} = 50.13$, partial $\eta^2 = .37$; gossip, $F_{2, 174} = 146.44$, partial $\eta^2 = .63$; being mean, $F_{2, 174} = 100.31$, partial $\eta^2 = .54$; bullying, $F_{2, 174} = 94.56$, partial $\eta^2 = .52$; keeping promises, $F_{2, 174} = 16.50$, partial $\eta^2 = .16$; attractive, $F_{2, 174} = 53.88$, partial $\eta^2 = .38$; dressing hip, $F_{2, 174} = 81.34$, partial $\eta^2 = .48$ (All $P < .001$).

Table 3

Means and Standard Deviations for Clustering and Validation Variables for Early Adolescent Girls' Clusters

	High Dominant-Popular N = 28		Average N = 88		Low Dominant-Popular N = 61	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Clustering variables</i>						
Dominant-Popular	1.14 _a	1.23	.19 _b	.60	-.50 _c	.70
Friendliness	-.86 _a	1.04	.54 _b	.65	-.03 _c	1.01
Plays the Boss	1.53 _a	.78	.01 _b	.48	-.67 _c	.71
Fights	.12 _a	.59	-.15 _a	.31	-.82 _b	.62
Gossips	2.29 _a	.91	.25 _b	.69	-.45 _c	.62
Mean	1.81 _a	1.05	-.14 _b	.58	-.58 _c	.82
Bully	1.29 _a	1.31	-.42 _b	.41	-.50 _b	.28
Keeps Promises	-.74 _a	1.09	.32 _b	.64	.22 _b	1.04
Attractive	1.22 _a	1.12	.33 _b	.76	-.70 _b	.85
Hip Dress	1.46 _a	.82	.31 _b	.62	-.57 _b	.77
<i>Validating variables</i>						
Leader	1.43 _a	1.00	.03 _b	.46	-.75 _c	.80
Friendship	-.55 _a	1.08	.49 _b	.54	-.20 _a	1.22
Victim	-.27 _a	.56	-.36 _a	.34	.29 _b	1.24
Disrespectful to Teacher	1.14 _a	1.22	.07 _b	.56	-.75 _c	.74
Attentive in Class	-.79 _a	1.20	.04 _b	.82	.66 _c	.84
Boring	-.59 _a	.57	-.41 _a	.54	.76 _b	1.05

Note. Cluster means with different subscripts are significantly different from one another at $P < .01$.

Post-hoc comparisons with Bonferroni corrections demonstrated how the three clusters of girls differed on the clustering variables (see Table 3). This led to the following cluster descriptions. *High Dominant-Popular* ($N = 28$, 17%). Girls in this cluster were judged as highly dominant-popular, playing the boss, gossips, mean, bully, attractive, and hip dressed. They were judged low on friendliness and keeping promises. The second cluster was named *Average Girls* ($N = 88$, 46%). The third cluster was called *Low Dominant-Popular* ($N = 61$, 32%) based on their behavioral profile. The profile of girls in this cluster was characterized by low scores on dominance-popularity, playing the boss, fighting, gossiping, being mean, bullying, attractiveness, and dressing hip.

Validation of Clusters

The clusters were further validated by comparing them on six variables not used to generate the clusters: leadership nominations, number of friendship nominations, being victimized, being disrespectful to teachers, being attentive in class, and being considered boring (for an example of this type of validation, see De Bruyn and Cillessen, 2006a). These variables have all been found to be highly associated with social dominance and popularity in previous studies. For both boys and girls, a 3 (Cluster) MANOVA was conducted on these variables. The multivariate effect of cluster was significant for both boys and girls. For boys, the multivariate effect was $F_{12, 338} = 31.74$, $P < .001$, *partial* $\eta^2 = .53$. Univariate effects were significant for each variable. For leadership nominations, $F_{2, 174} = 89.69$, $\eta^2 = .51$; for number of friendship nominations $F_{2, 174} = 21.88$, *partial* $\eta^2 = .20$; for being victimized, $F_{2, 174} = 44.49$, *partial* $\eta^2 = .34$; for disrespect to teachers, $F_{2, 174} = 88.86$, *partial* $\eta^2 = .51$; for being attentive in class, $F_{2, 174} = 27.63$, *partial* $\eta^2 = .24$ and for being considered boring, $F_{2, 174} = 94.77$, *partial* $\eta^2 = .52$ (All $P < .001$). Bonferroni corrected paired comparisons (see Table 2) indicated that High Dominant-Popular boys were chosen more often as leader than Average Boys and Low Dominant-Popular boys. High Dominant-Popular boys were nominated less often as a friend than Average Boys, but did not differ from Low Dominant-Popular boys on this dimension. High Dominant-Popular boys were highest in disrespect to teachers and lowest in attentiveness in class. Also, High Dominant-Popular boys were considered least boring. Low Dominant-Popular boys were victimized most and were most respectful to teachers. Low Dominant-Popular boys were also considered very boring.

For girls, the multivariate effect was $F_{12, 338} = 22.13$, $P < .001$, *partial* $\eta^2 = .44$. Univariate effects were significant for all variables. For leadership nominations, $F_{2, 174} = 95.34$, *partial* $\eta^2 = .52$; for number of friendship nominations $F_{2, 174} = 18.23$, *partial* $\eta^2 = .17$; for being victimized, $F_{2, 174} = 12.28$, *partial* $\eta^2 = .12$; for disrespect to teachers, $F_{2, 174} = 77.08$, *partial* $\eta^2 = .47$; for being attentive in class, $F_{2, 174} = 26.00$, *partial* $\eta^2 = .23$ and for being considered boring, $F_{2, 174} = 50.95$, *partial* $\eta^2 = .37$ (All $P < .001$). Bonferroni corrected paired comparisons indicated that High Dominant-Popular girls received more leadership nominations than either Average Girls or Low Dominant-Popular girls (see Table 3). High Dominant-Popular girls received fewer friendship nominations than Average Girls, but equal to Low Dominant-Popular girls. High Dominant-Popular girls were very disrespectful to teachers and low in attentiveness in class. Low Dominant-Popular girls were considered very boring, very attentive in class, and they were not disrespectful to teachers. Also, Low Dominant-Popular girls were victimized most.

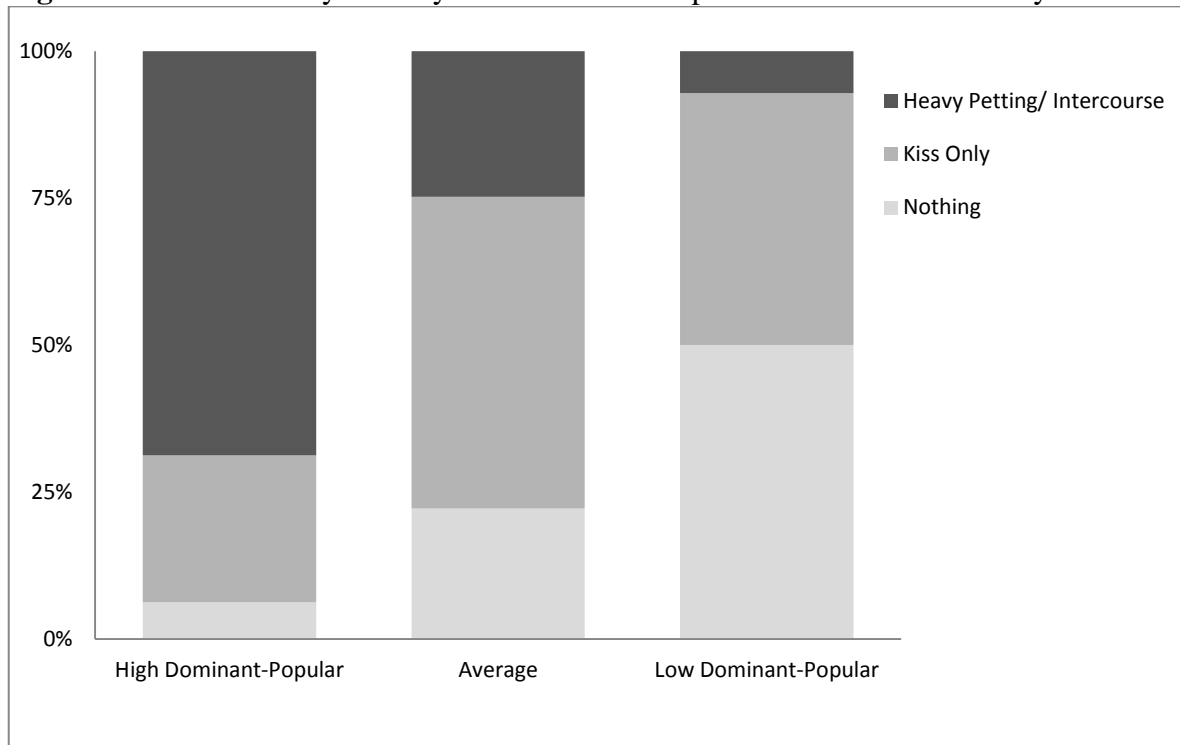
Sexual Activity by Gender

The self-report measures of sexual activity indicated that for boys, 24% (n = 42) had done ‘nothing’, 46% (n = 82) had ‘only kissed’, and 30% (n = 53) had engaged in ‘heavy petting and/or intercourse’. For girls, 24% (n = 42) had done ‘nothing’, 51% (n = 90) had ‘only kissed’, and 25% (n = 45) had engaged in ‘heavy petting and/or intercourse’. These numbers are comparable to national average estimates reported by De Graaf et al. (2005), who indicated that an estimated 16% of 14-year old boys and 29% of 15-year old boys had had sexual intercourse. For girls, these national average estimates were 11% at age 14 and 29% at age 15.

Sexual Activity by Cluster

To address the main research question of this study, the three clusters were compared on sexual activity. Boys in the High Dominant-Popular cluster reported the highest level of sexual activity: 69% reported having engaged in heavy petting and/or intercourse. The percentages for the other clusters were: Average Boys, 25%; and Low Dominant-Popular boys, 7.1% (see Figure 1).

Figure 1. Sexual activity level by cluster membership for middle adolescent boys.

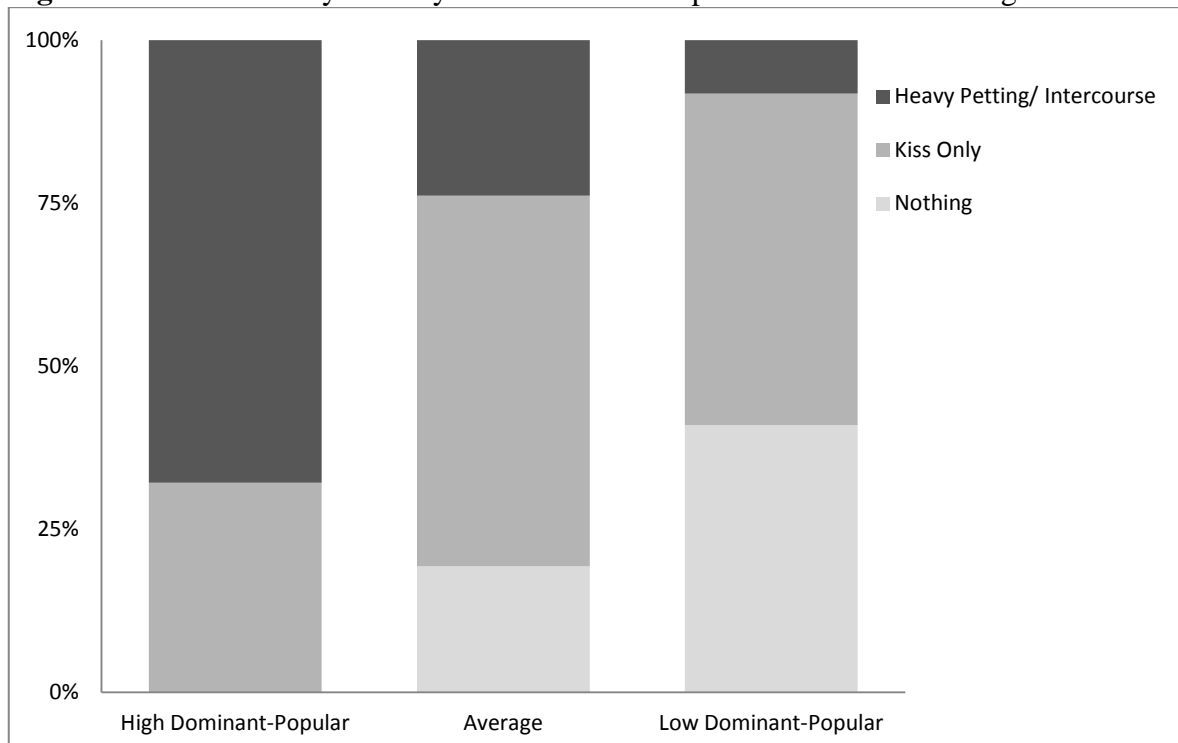


Planned comparisons indicated a significant difference in the level of sexual activity between the High Dominant-Popular cluster and the other two clusters. The difference in sexual activity between High Dominant-Popular and Average boys was 44% ($z = 4.44$; $P < .01$; $CI_{99\%} = .21 - .67$) and the difference between High Dominant-Popular and Low Dominant-Popular boys was 62% ($z = 4.62$; $P < .01$; $CI_{99\%} = .37 - .86$).

For girls, the highest level of sexual activity was reported for the High Dominant-Popular cluster: 68% of them reported having engaged in heavy petting and/or intercourse.

The percentages for the other clusters were: Average Girls, 24%; Low Dominant-Popular, 8% (see Figure 2).

Figure 2. Sexual activity level by cluster membership for middle adolescent girls.



Planned comparisons indicated a significant difference between the sexual activity level of the High Dominant-Popular cluster and the other two clusters. The difference in sexual activity level between High-Dominant-Popular and Average girls was 44% ($z = 4.27$; $P < .01$; $CI_{99\%} = .18 - .70$) and the difference between High Dominant-Popular and Low Dominant-Popular girls was 60% ($z = 5.89$; $P < .01$; $CI_{99\%} = .35 - .84$).

In summary, middle adolescent boys and girls high in dominance-popularity appeared to have had earlier sexual encounters than their peers, thereby confirming the main hypothesis of this study. Also confirmed was the fact that these boys were very aggressive, bossy and bullies. They were also considered very attractive. As expected, the highly dominant-popular girls were considered very attractive and high in relational aggression.

Univariate Analyses of Behavior and Sexual Activity Level

In addition to the person-centered method of cluster analysis, we chose to also perform a variable-centered approach, namely ANOVA. The ANOVA's showed that middle adolescents who had performed heavy petting and/or intercourse differed remarkably from peers who had done 'nothing' or merely kissed. In fact, they differed significantly on all behavioral aspects except being friendly and being nominated as best friend (see Table 4).

Hierarchies and sexual activity

Table 4
Means of all Variables by Sexual Activity Level

	Boys				Girls			
	<i>Nothing</i>	<i>Kissed</i>	<i>Intercourse</i>	η^2	<i>Nothing</i>	<i>Kissed</i>	<i>Intercourse</i>	η^2
Dominant-Popular	-.54	-.19	.38 _a	.17	-.34	-.02	.75 _a	.24
Friendly	-.01	-.05	-.32	.01	.16	.27	-.22	.05
Plays the Boss	-.44	-.18	.56 _a	.23	-.47	-.16	.83 _a	.38
Fights	-.11	.16	.97 _a	.26	-.52 _a	-.36 _{ab}	-.13 _b	.02
Gossips	-.57	-.42	.00 _a	.07	-.33	.20	1.22 _a	.49
Mean	-.38 _a	-.07 _{ab}	.35 _b	.10	-.44	-.15	.79 _a	.33
Bully	-.23	.04	.70 _a	.19	-.51	-.31	.43 _a	.20
Keeps Promises	.15	-.13	-.31	.03	.36	.28	-.44 _a	.16
Attractive	-.43	-.20	.26 _a	.09	-.53 _a	.16 _b	.62 _b	.24
Hip Dress	-.52	-.32	.27 _a	.13	-.29	.13	.77 _a	.21
Leader	-.36	-.10	.50 _a	.15	-.37	-.21	.70 _a	.27
Friendship	-.13	.00	-.18	.01	.03	.24	-.18	.03
Victim	.37	.17	-.14	.04	.20 _a	-.21	-.24	.04
Disrespectful to Teacher	-.40	-.11	.49 _a	.17	-.54	-.15	.81 _a	.39
Attentive in Class	.36	-.07	-.58 _a	.17	.57	.27	-.59 _a	.28
Boring	.39	.19	-.49 _a	.18	.38 _a	.00 _{ab}	-.49 _b	.14

Note. Means that do not share subscript within gender are significantly different from one another at $P < .01$.

Thus, middle adolescents who were at the high level of sexual activity were judged more dominant-popular, more bossy, fought more, gossiped more, were meaner, bullied more, were more attractive, hip dressed, more of a leader, more disrespectful to teachers, less attentive in class, and considered less boring than peers at lower levels of sexual activity. Some gender differences were also apparent. A comparison of sexually active adolescent boys and girls revealed that sexually active boys fought far more than sexually active girls ($F_{1,96} = 36.99$; $P < .01$; $\eta^2 = .59$). Sexually active girls, however, were considered slightly more attractive, more fashionable, and far more gossipy than sexually active boys ($F_{1,96} = 3.80$; $P = .05$; $\eta^2 = .05$; $F_{1,96} = 6.14$; $P < .05$; $\eta^2 = .11$; $F_{1,96} = 37.85$; $P < .01$; $\eta^2 = .73$, respectively).

Multivariate Analysis of Behavior and Sexual Activity Level

In order to assess the relative contributions of the individual behaviors as assessed by univariate analyses (see the above section), a Discriminant Function Analysis (DFA; Tabachnik and Fidell, 2007) was performed for boys and girls separately. After inspection of the univariate analyses (see Table 4), it appeared that the largest group differences encountered were between adolescents who had intercourse versus the rest. Based on this inspection, we decided to combine adolescents who had done nothing with those who had merely kissed, thereby creating two groups, non-sex versus sex. All variables were then

entered into the DFA in order to predict the respective group membership.

Table 5

Structure Matrix for the Discriminant Function Analysis of Status and Behavioral Variables

Boys		Girls	
Bossy	.70	Bossy	.78
Starts fights	.67	Disrespects teacher	.69
Disrespects teacher	.64	Gossips	.68
Gossips	.63	Leader	.62
Boring	-.63	Attentive in class	-.60
Bully	.61	Mean	.60
Leader	.61	Dominant-Popular	.60
Attentive in class	-.59	Bully	.58
Dressed hip	.58	Dressed hip	.50
Dominant-Popular	.57	Keeps promises	-.50
Attractive	.51		
Mean	.51		

Note: Loadings less than .50 are not shown

The DFA for boys yielded one discriminant function, with Wilks' Lambda = 0.75 ($X^2(18) = 47.25$; $P < .001$; Eigenvalue = .33). The structure matrix for each gender is shown in Table 5. In general, boys who had had sex distinguished themselves from boys who had not had sex in overall negative behavior such as being bossy, fighting, disrespecting teachers, gossiping, bullying, non-attentive in class, and mean. They were also considered less boring, more of a leader, more dominant-popular, and more attractive. For boys, 77.4% of the original cases were correctly classified, with most misclassifications a result of boys who had had sex to be classified as not having had sex. For girls, one discriminant function was revealed, with Wilks' Lambda = 0.64 ($X^2(18) = 73.06$; $P < .001$; Eigenvalue = .55). In general, girls who had had sex distinguished themselves from girls who had not had sex in overall negative behaviors such as being bossy, disrespecting teachers, gossiping, inattentive during class, being mean, bullying, and not keeping promises. Also, they were considered more of a leader, more dominant-popular, and hip dressed. For girls, 85.3% of the original cases were classified correctly, with most misclassifications due to girls who had had sex classified as not having had sex.

In sum, the multivariate method of analysis through DFA revealed that middle adolescent girls and boys who had had sex displayed highly dominant behavior and many

negative peer-directed and teacher-directed behaviors, and were considered far more dominant-popular than adolescents who had not yet had sex.

Discussion

The present study confirmed the three hypotheses stated in the introduction. That is, middle adolescents who are highly dominant-popular and who also display high levels of bullying and (relational) aggression are sexually precocious. Individuals at the other end of the status and behavior spectrum, i.e., low dominant-popular, withdrawn, and victimized middle adolescents, are the least sexually precocious. The hypothesized gender differences in behavioral profile of sexually precocious adolescents were also confirmed. That is, sexually active middle adolescent boys were highly dominant-popular and physically aggressive (and also attractive), and sexually active middle adolescent girls were highly dominant-popular, attractive and relationally aggressive.

Adolescence marks the beginning of sexual maturation, and is thus a time when within-sex competition should rise. Sexual strategies theory (Buss, 2003; Campbell, 2002) predicts that both sexes set out to win this competition: boys through overt aggression and bullying, girls through being attractive and using relational aggression. By using aggression, middle adolescent boys can show off their strength and dominance to their male rivals and to potential female mates (Pellegrini, 2002). Bullying may be a successful way for them to lower their rivals' chances of romantic success. It is also a signal to the opposite sex that they are interesting and should be given attention. In fact, intra-sexual competition probably evolved through the process of sexual selection (Buss, 1996; Darwin, 1871). That is, what predicts a top ranking among sex-mates (intra-sexual competition) is also what members of the opposite sex look for in potential mates (inter-sexual competition). Thus, there is just one hierarchy for each sex (e.g., Weisfeld, Bloch, and Ivers, 1983; 1984).

For girls and boys, physical attractiveness was positively associated with a high peer group status and sexual activity. The positive association between attractiveness and status in middle adolescence has been shown before, but the current study also shows connections with sexual behavior. Also, Udry and Billy (1987) found that US adolescent girls (ages 14-17) with high testosterone and high attractiveness had the strongest sex drives. It is no surprise that intra-sex competition among girls is aimed at lowering rivals' status (derived from their attractiveness) through derogation. Buss and Dedden (1990) showed that in the US, reputation-hurting through gossip is common among girls. In a UK study, Duncan (2004) also showed that this derogation is often aimed at humiliating a girl for her sexual success, for example, through name calling. Also, Campbell (2002), studying female gangs in the UK and the US, has cogently argued that reputation-bashing among girls is most likely aimed at sexual promiscuity, that is, calling a girl a 'whore' or 'slut' is the most effective way of destroying a girl's reputation among peers. Other studies conducted in Mexico (Fry, 1992), Bolivia (Holmberg, 1969), Argentina (Hines and Fry, 1994) and the US (Campbell, 1994) showed that intra-female competition is rife, fierce, and invariably involves a sexual partner.

We suggest that highly dominant-popular adolescent boys have Resource Holding Power (RHP), whereas highly dominant-popular adolescent girls have some RHP, but rely also and perhaps more heavily on Social Attention Holding Power (SAHP; Gilbert, Price, and Allan, 1995). Gilbert et al. typified RHP as a 'threat' display (i.e., the individual gains

power through direct aggression), and SAHP as an ‘attractive’ display (the individual gains power through attractive personal qualities). Both types of power, however, make the individual feel esteemed. In fact, a positive association has been found between self-esteem and status (De Bruyn and Van den Boom, 2005). Also, self-esteem takes a prominent place in Barkow’s (1989) theorizing about status and reproductive success. He postulated that self-esteem consists mainly of “*an ongoing comparison of the self-representation with the representation of others*” (p. 180). This comparison process takes place whenever people are in groups. Barkow invoked Chance’s concept of *attention structure* (Chance, 1967) to indicate that most comparison encounters need not be physically agonistic, which would indicate a RHP strategy, but may simply consist of *who attends to whom*, which indicates a SAHP strategy. However, the notion of attention structure being the primary dimension of primate dominance-popularity hierarchies has been criticized by Hinde (1974; see also Schubert, 1983). Hinde agreed that dominant males in primate groups are attention-catchers through displays of dominant behavior. But, he argues, these displays invariably show off physical prowess and frighten others. Also, subordinates tend to monitor or pay attention to dangerous dominant troop members. Thus, attention seems to be a byproduct of dominance displays—at least among simians—and male dominant primates attract attention through dominance displays that are in turn evidence to rivals and potential mates of a high RHP. To rivals, the displays convey the message to back down, while to potential mates, they are a sign of good genes.

How do our findings contribute to the understanding of dominance-popularity behaviors among (adolescent) humans? Human ontogeny is marked by dominant bullying behavior and resource control: toddlers vie for the most interesting toys; adolescents (and adults) vie for the most interesting partners. Also, being successful in gaining control over resources early in life may actually have lasting consequences later in ontogeny (e.g., Weisfeld, 1987). Gaining resources through dominant behaviors such as bullying is thus reinforced through rewards (resource acquisition) and perhaps this learning mechanism may help explain the tenacity and ubiquity of bullying. It may not be a coincidence that bullying increases at this age (Björkqvist et al., 1992; Cairns and Cairns, 1986). Adolescence is, after all, a developmental period marked by the crossing of gender boundaries in search for sexual opportunities. Intra-sex competition for these opportunities is high and recent retrospective research confirms that bullying and victimization may be linked to reproductive behavior (Gallup, O’Brien, White, and Sloan Wilson, 2009; White, Gallup, and Gallup, 2010). Thus, the struggle for sexual opportunities may be a factor in the prevalence of bullying and victimization in secondary schools.

In addition to bullying, anti-authority displays (e.g., receiving low grades and being disrespectful to teachers) are very typical for dominant-popular boys as well as girls (e.g., Adler and Adler, 1995; Adler, Kless, and Adler, 1992; De Bruyn and Cillessen, 2006a; 2006b; Rodkin, Farmer, Pearl, and Van Acker, 2000). Perhaps these anti-authority displays are part and parcel of the dominant-popular behavioral profile. They may benefit the displayer in several ways: by impressing classmates (“*oh, look how cool I am to defy this teacher!*”) or by acting the class-clown they show defiance and humor (in particular reducing the low dominant classmates to a laughing stock). Also, by defying and challenging authority they show their strength, fortitude, courage, leadership, and raw power, all of which probably serve a two-pronged goal: impress the opposite sex and scare off rivals. Could these behaviors capture the essence of a newly discussed construct called

Mating Intelligence (Geher and Miller, 2008)? Future research should concentrate on delineating the behavioral factors underlying successful (and unsuccessful) adolescent sexual mating mechanisms.

There were some limitations to this study. The first is the ‘implicit’ fact-finding nature of cluster analysis. This method relies solely on statistical criteria to find subgroups. Other methods to identify subgroups should also be used in future studies, such as ethnography, interviews, or observations. Second, an important question regarding the positive association between dominance-popularity and sexual activity centers on directionality. Sexual selection theory suggests that status precedes and predicts sexual activity. The present study, however, is correlational and statements about causality should be avoided. Thus, the statement *being dominant-popular in a group and behaving aggressively leads to sex* is just as probable as *sex leads to being considered dominant-popular and behaving aggressively*. However, this line of reasoning becomes harder to maintain when we consider the strong association between dominance, behavior, and sexual activity. Remember, it was the dominant-aggressive boys and girls who were sexually most active, and the proposition that sexual activity should lead to dominant-aggressive behavior is harder to maintain than the reverse, i.e., dominant-aggressive behavior leads to increased sexual activity. Why would an individual who gained access to a sexual mate become *more* aggressive? That makes much less sense than an aggressive individual securing sole access to a willing mate. Longitudinal studies will help to address these questions of directionality and causality. Also, an alternative explanation is plausible, such that both sexual activity and dominance behavior are somehow ‘driven’ by a third variable, perhaps a personality type akin to a Machiavellian profile: cunning, smart, savvy, and high in opportunistic aggression (Byrne and Whiten, 1988; Whiten and Byrne, 1997). If so, then the behavioral profiles of attractive-dominant girls and aggressive-dominant boys uncovered in the current study seem to fit the bill to a certain degree. Further studies should investigate this hypothesis. Also, the findings of the current research apply to adolescents in a modern Western society, in this case The Netherlands. One must always be very cautious in extending findings from one culture to the human species as a whole. Future studies should look into cultures that are vastly different in, for instance, school organization and sexual permissiveness.

In spite of these limitations, this study provides an important step towards understanding the association between middle adolescent peer status, interpersonal behavior, and sexual activity. This study showed that middle adolescents’ sexual behavior is related to dominant-popularity status, in combination with certain idiosyncratic behaviors of boys and girls that enhance their competitiveness within their own gender, in particular, aggression and appearance. This study also shows that sexual strategies theory and the evolutionary perspective provide a framework to understand these associations.

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