

PATHWAYS TO CONSENSUAL POPULARITY AND MATING OPPORTUNITIES IN ONTOGENETIC PERSPECTIVE

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ABSTRACT

In this paper, we investigated different behavioral patterns for achieving consensual popularity exhibited by antisocial and prosocial types of individuals. These patterns were investigated from pre-adolescence through late adolescence, and for both genders. Results revealed that Populistic (antisocial) individuals were high in bullying and low in academics; Social-populars (prosocial) showed the opposite pattern. Both types were higher in physical attractiveness and fashionability than unpopular individuals, who were the most likely to be bullied. Substance abuse was high in both popular types. Both populistic and social-popular boys and girls were far more likely to be dating than unpopular boys and girls.

Keywords: *Popularity, Social Dominance, Mating Opportunities, Reproductive Success, Ontogeny, Aggression, Attractiveness, Bullying, Victimization, Human Ethology, Alcohol, Late Childhood, Adolescence.*

INTRODUCTION

Among humans, and in particular early and middle adolescents, there appears to be a clearly delineated cross-cultural status hierarchy that is usually referred to by researchers as consensual (or perceived/reputational) popularity (Cillessen & Rose, 2005; Cillessen & Borch, 2006; De Bruyn & Cillessen, 2006a, b; De Bruyn & Van den Boom, 2005; Weisfeld, Muczenksi, Weisfeld, & Omark, D., 1987). Adolescents and children usually refer to this hierarchy merely as popularity.

Consensually popular adolescents are individuals with influence, power and prestige. Research has shown that consensually popular individuals are often highly desirable as mating partners and influence group decisions (Weisfeld, Bloch & Ivers, 1983; 1984; Houser, Mayeux & Cross, 2015). In order to avoid confusion with for instance social dominance (re: Weisfeld, et al., 1983, 1984) or likeability (which is usually referred to as sociometric popularity, e.g., Cillessen & Rose, 2005), henceforth the term consensual popularity will be used to describe this characteristic (see also De Bruyn & Van den Boom, 2005; De Bruyn & Cillessen, 2006a, b).

Several studies have shown that the category of consensually popular adolescents need not be quite as homogeneous as one may expect. In fact, there appear to be at least two high level consensually popular adolescent types who differ on the prosocial-antisocial behavioral spectrum (De Bruyn & Cillessen, 2006a, b; Farmer, Estell, Bishop, O'Neal and Cairn; 2003; Rodkin, Farmer, Pearl & Van Acker, 2000).

The present study was designed to investigate two important aspects of these two routes to consensual popularity. First, the development of popularity from pre-adolescence to late adolescence was investigated, including concomitant behavioral profiles. Second, the relationship between popularity—and a proxy of mating opportunities was examined.

There appear to exist at least two types of consensually popular adolescents, De Bruyn & Cillessen (2006a, b) showed that in The Netherlands 14-year olds can easily identify and describe two types of consensually popular male and female classmates which these authors dubbed populist and social-popular. The former were considered anti-social, anti-academic, arrogant bullies and show-offs. The latter were described as friendly, helpful, and academic. However, both types were invariably described as highly fashionable and physically attractive. Several studies in the United States have also revealed the compound nature of consensual popularity, such as Farmer et al. (2003) and Rodkin et al. (2000). These researchers labeled the two types of consensually popular boys Tough boys and Model boys. Also, Hawley and colleagues (2002; 2003; 2014) discovered that individuals in the United States adopt different behavioral strategies in order to gain access to resources: prosocial, antisocial, and bi-strategic (a mixture of the two). Hawley, Little and Card (2008) showed that in grades 5 through 10, adolescents who adopted either a strictly prosocial strategy or a bi-strategic method of resource control, were equally consensually popular. Farmer et al. (2003) revealed that subtypes of African-American boys and girls could be identified who differed on prosocial and antisocial behaviors, but both types were popular.

Evidence for this typology at earlier ages than adolescence is scant. Hawley and her colleagues studied young children and even preschoolers. They revealed the existence of at least two types of-strategy that young children used in order to secure desired toys and such, the bi-strategic and the prosocial controllers. The former used a combination of affiliative and aggressive behavioral strategies, the latter solely affiliative. Both types of strategies were awarded with the highest teacher-rated resource control, i.e., getting what they want (Hawley, 2003). Hawley, Johnson, Mize and McNamara (2007) showed that preschoolers ascended the social hierarchy either through the combination of prosocial and coercive behaviors or through only prosocial means, although the former bi-strategic controllers ranked higher. Estell, Cairns, Farmer and Cairns' (2002) studied 1st and 2nd

graders. They found that among both sexes, popular subgroups exhibited either high or low levels of aggression.

Among older elementary school children both bi-strategic and prosocial behavioral strategies may lead to a high position (Hawley, Little, & Pasupatih, 2002; Hawley, 2014). Rodkin et al., (2000) showed that in grades 4-6, two types of popular boys existed: an antisocial and a prosocial type, the so-called 'tough' versus 'model' boys (girls were not studied). The tough boys exhibited high levels of aggression and low levels of academic interest; the model boys displayed an opposite pattern.

In sum, starting at preschool age and continuing throughout adolescence, children form groups that are characterized by a consensual popularity hierarchy that can be ascended by disparate types of behaviors: prosocial versus bi-strategic; aggressive versus nonaggressive; tough boys versus model boys; and populist versus social-popular. Despite their different terminologies, these dichotomies seem to pertain to the same conceptual distinction between prosocial and (at least partly) antisocial behaviors. However, the above observations are the result of studies that differed in culture and gender. Therefore, the first aim of the present study was to extend De Bruyn & Cillessen's (2006a, b) studies in The Netherlands to include both boys and girls and three age groups: pre-adolescents, early adolescents and adolescents (ages 9-12, 12-15 and 16-19 years, respectively). These previous findings on Dutch adolescents generated our first hypothesis:

Hypothesis 1: Across the three age groups (pre-adolescent, early/middle adolescent and late adolescent) in The Netherlands, children are able to reliably rate the behaviors of two types of consensually popular classmates: the populist and the social-popular ones.

Popular adolescents appear to drink more alcohol than their peers (Allan, Porter, McFarland, Marsh & McElhaney, 2005; Diego, Field, & Sanders., 2003. Also, smoking is related to popularity (Phua, 2011; Tucker, Green, Zhou, Miles, Shih & D'Amico, 2011; Valente, Unger & Johnson, 2005). Considering the different paths to consensual popularity, and in particular the antisocial inclination of the populist adolescents, we expected the populist adolescents to drink and smoke more relative to their age mates.

Hypothesis 2: Populistic boys and girls will drink more alcohol and smoke more often than social-popular or unpopular boys and girls, in particular in middle and late adolescence.

De Bruyn and Cillessen (2006a, b) showed that these two types of consensually popular adolescents were considered very attractive and fashionably dressed. Research on US adolescent girls has shown that dressing fashionably is associated with popularity (Allen & Eicher, 1973; Coleman, 1961; Weisfeld et al., 1984).

Hypothesis 3: Across the three age groups, both populist and social-popular children and adolescents will be considered more attractive and fashionable than unpopular classmates.

Ellis (1995) has shown, in his meta-analysis of more than 400 non-human species, an association between dominance and reproductive success. Among humans, a few studies have shown that a high dominance position is associated with proxies of reproductive success. For instance, Pellegrini and Bartini (2001; Pellegrini, 2002) showed that adolescent girls preferred to have a hypothetical date with a consensually popular boy. Mayeux, Sandstrom and Cillessen (2008) found similar results (see also, Weisfeld, Bloch & Ivers, 1983, 1984; Weisfeld, et al., 1987). Recently, Houser et al. (2015) investigated the links between consensual popularity and dating in adolescence. Consensually popular girls who were anti-social (through aggression) were high in dating popularity. In fact, several studies have revealed positive associations between bullying and dating (Dane, Marini, Volk & Vaillancourt, 2016; Houser et al., 2015; Volk, Dane, Marini, & Vaillancourt, 2015) and a negative association between being victimized and dating (Gallup, O'Brian, White, & Sloan Wilson, 2009). Also, De Bruyn et al. (2012) showed that popular adolescent boys and girls, who were also highly aggressive, had sex earlier than less popular adolescents.

Hypothesis 4: The two types of consensually popular individuals (social-popular and populist) have higher dating ratings than low consensually popular individuals at all three ages of the current study.

In sum, this study aimed to extend research into popularity by, first, investigation of the existence of the two types of popularity (*populistic* and *social-popular*) in The Netherlands among three age groups (pre-adolescent, early/middle adolescent and late adolescent) and concomitant behavioral profiles. Second, we intended to investigate the association between the two types of high consensual popularity status and dating frequency in the three age groups.

METHODS

Participants and Procedure

The participants came from two schools in The Netherlands, a primary and a secondary school. From the primary school, the two highest level classrooms and the two second-highest level classrooms were administered the questionnaire (N=93, 49% girls, mean age=10.5 years). From the secondary school, 8 classrooms from the lowest three grades and 7 classrooms from the upper three grades were administered the questionnaire (N=214, 35% girls, mean age=12.9 years and N=177, 48% girls, mean age=17.0 years, respectively). The secondary school consisted of pre-higher vocational and pre-university pupils. Schools in The Netherlands are required by law to implement a general anti-bullying program. In practice this results mainly in posting a set of rules with which students have to abide. Both schools in the present study complied with this practice.

The data were collected as part of a project on school behavior and achievement across primary and secondary school-age students. Parents were informed through the school board that pupils were to be asked about their behaviors and their classmates' behaviors. Parents could deny their child's participation (no parent did so). According to Dutch law IRB approval was not needed for this study due to its non-experimental

nature. Research assistants administered the questionnaire to pupils, one classroom at a time. Pupils were informed that participation was voluntary and that answers would be kept strictly confidential. No pupil refused participation.

Measures

The current study utilized a procedure similar to that of De Bruyn and Cillessen's (2006a) study in which participants were asked: "Please think of the (Most Populistic/ Most Social-Popular/ Least Popular Boy/Girl) in your classroom and rate his/her behavior on the following pages". The pupils were given terms used in De Bruyn and Cillessen's (2006a) Dutch study, that is, *popie-jopie* for populistic and *aardig-populair* for social-popular. As in the De Bruyn and Cillessen study, all participants had a clear understanding of the two Dutch terms. Student assistants checked this understanding by asking participants before handing out the questionnaires. All pupils were thus given three questionnaires that differed only in the type of classmate they had to think of when rating this person. Boys rated boys and girls rated girls.

The behaviors that pupils were asked to rate were chosen so as to reflect the full spectrum of behaviors that have been associated with consensual popularity in the literature. In order to reflect academic behavior, participants answered questions such as: Gets good grades, Is smart, Works hard at school and Finds grades important. Antisocial behavior was measured by these descriptors: Makes fun of others, Insolent to teachers, Disrupts class, Gossips, Ostracizes, and Bullies. Prosocial and gregarious behaviors were measured by these descriptors: Friendly, Helpful, Has many friends, Victim, and Leader. Finally, participants rated classmates on Attractiveness, Fashionability and Dating. Also included were questions about alcohol consumption and cigarette smoking. Each behavior was scored on a scale of 1 (=not at all/never) to 7 (very much/all the time).-

RESULTS

Results are presented in four sections. First, data reduction was accomplished by conducting a Factor Analysis using Varimax rotation (Kim & Mueller, 1978; Rummel, 1970). Second, descriptive statistics of all variables are presented for all three age groups and separately by consensual popularity type and gender. Third, a series of ANOVA's was conducted for each age group to investigate the association between consensual popularity type, behavioral profile, and proxies of reproductive success. Bonferonni-adjusted post-hoc analyses were conducted to investigate univariate effects of type of consensual popularity on the above variables (only *p*-values < .001 were considered). And fourth, a stepwise regression was conducted on Dating, using all behavioral variables as predictors.

Factor Analysis from Participant Ratings

The factor analysis was run on all variables except Fashionability, Physical Attractiveness and Dating. Interpretation of the scree test according to Costello and Osborne's (2005) criteria yielded four factors: (I) Antisocial, which included Makes Fun of Others and Is Insolent to Teachers; (II) Academic, which included Gets High Grades and Finds Grades Important; (III) Gregarious, which includes Has Many Friends and Helps Others; and (IV) Health Risk, which included Cigarette Smoking and Alcohol

Consumption but also Skips Class, an odd result. The total variance explained by these factors was 67%. Loadings and variance per factor are shown in Table 1.

Table 1: Factor Loadings and Percents of Variance for Principal Factors Extraction and Varimax Rotation on Behavior Ratings .

Behavior	F₁^a	F₂	F₃	F₄
Bullies	.79			
Ostracizes	.77			
Makes Fun of Others	.75			
Gossips	.71			
Insolent	.67			
Disrupts Class	.64			
Has Friends		.85		
Victimized		-.71		
Leader	.41	.63		
Friendly	-.47	.60		
Helpful		.50	.50	
Good Grades			.86	
Is Smart			.81	
Works Hard at School			.83	
Grades Important			.81	
Skips Class				.81
Smokes				.81
Alcohol				.71
<i>Variance explained</i>	22 %	19 %	13 %	12 %

Note: Only loadings >0.40 are displayed

^aFactor labels:

F₁ Antisocial

F₂ Gregarious

F₃ Academic

F₄ Health Risk

Popularity Type Comparisons Across Age

A series of ANOVA's was conducted across the four factors and the ratings on Fashionability, Attractiveness, and Dating for each age group and gender were analyzed separately. In order to facilitate comparison with the factor scores, ratings for the latter three were standardized to a mean of zero and a standard deviation of one within each age group and gender. Means, standard deviations, F-values, and partial η^2 for the ANOVA's are shown in Tables 2-4.

Table 2: Dutch Pre-Adolescents' Behaviors and Reproductive Success Proxies by Consensual Popularity Type

	Pre-Adolescence / Primary School (9-12 years)															
	Boys							Girls								
	Social-popular		Populistic		Unpopular		<i>F</i> (2,140) <i>pη</i> ²	Social-popular		Populistic		Unpopular		<i>F</i> (2,134) <i>pη</i> ²		
M	(SE)	M	(SE)	M	(SE)	M		(SE)	M	(SE)	M	(SE)				
Antisocial	-.56 _a	.09	.30 _b	.15	-.33 _a	.12	13.11*	.16	-.13 _a	.15	.96 _b	.16	-.14 _a	.17	15.41*	.19
Academia	.10	.13	-.29	.14	-.15	.16	1.91	.03	.36 _a	.12	-.27 _b	.13	.16 _{ab}	.16	5.59*	.08
Gregarious	.62 _a	.10	.02 _b	.10	-.57 _c	.11	32.93*	.33	.62 _a	.10	.06 _b	.13	-.66 _c	.13	27.57*	.29
Health Risk	-.47 _a	.03	-.76 _b	.06	-.54 _a	.05	9.64*	.12	-.43	.05	-.72	.07	-.45	.09	5.36	.07
Attractive	.43 _a	.15	.05 _a	.16	-.45 _b	.09	10.62*	.13	.39 _a	.18	.08 _a	.14	-.47 _b	.08	9.38*	.12
Fashionable	.45 _a	.13	.09 _a	.14	-.51 _b	.13	12.97*	.15	.49 _a	.13	.12 _a	.13	-.62 _b	.14	18.16*	.21
Dating	.33	.19	-.09	.12	-.21	.11	3.97	.05	.00	.08	.20	.18	-.22	.13	2.10	.03

Note: * : $p < .001$; Means that do not share subscripts within gender are statistically different with $p < .001$; (SE) = Standard Error; $p\eta^2 = partial \eta^2$

Table 3: Dutch Early and Middle Adolescents' Behaviors and Reproductive Success Proxies by Consensual Popularity Type

	Early & Middle Adolescence (12-15 years)															
	Boys							Girls								
	Social-popular		Populistic		Unpopular		<i>F</i> (2,412) <i>pη</i> ²	Social-popular		Populistic		Unpopular		<i>F</i> (2,222) <i>pη</i> ²		
M	(SE)	M	(SE)	M	(SE)	M		(SE)	M	(SE)	M	(SE)				
Antisocial	-.44 _a	.05	.84 _b	.08	-.38 _a	.08	103.37*	.34	-.37 _a	.06	.73 _b	.11	-.48 _a	.08	60.40*	.36
Academia	.34 _a	.06	-.73 _b	.07	-.28 _c	.08	41.05*	.17	.65 _a	.08	-.49 _b	.10	.39 _a	.11	35.33*	.24
Gregarious	.65 _a	.05	.20 _b	.07	-1.21 _c	.82	273.55*	.54	.92 _a	.06	.55 _b	.09	-.82 _c	.09	127.34*	.54
Health Risk	-.37 _{ab}	.04	-.58 _b	.07	-.26 _a	.06	8.46*	.04	-.35	.04	-.26	.12	-.44	.03	1.40	.01
Attractive	.48 _a	.08 _b	.14 _a	.08	-.64 _c	.05	57.37*	.22	.46 _a	.10	.41 _a	.11	-.87 _b	.05	68.26*	.38
Fashionable	.54 _a	.07	.39 _a	.07	-.96 _b	.05	167.59*	.45	.62 _a	.07	.42 _a	.09	-1.05 _b	.08	139.06*	.56
Dating	.28 _a	.10	.07 _a	.09	-.36 _b	.05	15.84*	.07	.09 _a	.12	.35 _a	.14	-.45 _b	.04	13.81*	.11

Note: * : $p < .001$; Means that do not share subscripts within gender are statistically different with $p < .001$; (SE) = Standard Error; $p\eta^2 = partial \eta^2$

Table 4: Dutch Late Adolescents' Behaviors and Reproductive Success Proxies by Consensual Popularity Type

	Late Adolescence (16-19 years)															
	Boys							Girls								
	Social-popular		Populistic		Unpopular		<i>F</i> (2,412) <i>pη</i> ²	Social-popular		Populistic		Unpopular		<i>F</i> (2,222) <i>pη</i> ²		
M	(SE)	M	(SE)	M	(SE)	M		(SE)	M	(SE)	M	(SE)				
Antisocial	-.43 _a	.05	.60 _b	.10	-.46 _a	.07	62.08*	.32	-.35 _a	.07	1.21 _b	.09	-.54 _a	.08	159.08*	.56
Academia	.17	.09	-.61 _b	.10	.33 _a	.11	26.84*	.17	.66 _a	.07	.09 _b	.09	-.01 _b	.09	18.77*	.13
Gregarious	.77 _a	.05	.27 _b	.07	-1.03 _c	.08	194.98*	.59	.65 _a	.06	.27 _b	.08	-1.02 _c	.07	165.78*	.57
Health Risk	.79 _a	.09	1.55 _b	.13	.15 _c	.11	38.25*	.22	.58 _a	.07	1.13 _b	.11	-.30 _a	.10	19.57*	.14
Attractive	.55 _a	.09	.39 _a	.09	-.95 _c	.04	112.43*	.45	.51 _a	.09	.50 _a	.09	-1.01 _b	.05	132.07*	.51
Fashionable	.56 _a	.08	.41 _a	.08	-.99 _b	.06	130.32*	.49	.59 _a	.07	.47 _a	.08	-1.06 _b	.06	168.13*	.57
Dating	.09 _a	.19	.43 _a	.12	-.53 _b	.11	25.96*	.17	.06 _a	.10	.41 _a	.10	-.47 _b	.10	19.74*	.14

Note: * : $p < .001$; Means that do not share subscripts within gender are statistically different with $p < .001$; (SE) = Standard Error; $p\eta^2$ = partial η^2

Behavioral Judgement Patterns across Age and Gender

Pre-Adolescence (9-12 years).

In pre-adolescence, male populist classmates were judged higher in antisocial behavior than social-populars and unpopulars. Social-populars were judged highest in gregariousness, followed by populist classmates, and least gregarious were unpopular boys. Physical attractiveness and Fashionability were rated equally high for the Social-popular and Populistic boys (mean values between the two types differed but did not reach statistical significance using an $\alpha = .001$; $\beta < .10$); both popular types scored significantly higher than unpopular boys. Academic and Dating did not differ between the groups.

The pattern for pre-adolescent girls was quite similar except that populist girls were judged lower in Academic than social-popular girls, but they did not differ from unpopular girls. Similar to boys, the social-popular and populist girls were rated far higher on Attractiveness and Fashionability than unpopular girls but did not differ from each other. On the Dating dimension, all three groups were rated equally low.

Early and Middle Adolescence (12-15 years).

The pattern for early/middle adolescent boys was similar to pre-adolescent boys' patterns except that the variation between the three types was more pronounced judging by the increase in partial η^2 effect sizes (see Table 3). Populistic boys were judged more Antisocial and lower in Academic than social-popular or unpopular boys. Social-popular boys were highest in Gregariousness, followed by populist boys; unpopular boys were judged lowest. As with pre-adolescent boys, the two types of popular early/middle adolescent boys did not differ in Attractiveness, Fashionability and Dating but were far higher than unpopular boys.

Early/middle adolescent girls' patterns largely mirrored those from boys. Populistic girls were rated higher on Antisocial and lower on Academic than either social-popular or unpopular girls. Social-popular girls were rated higher on Gregariousness, followed by populist girls, and lowest were the unpopular girls. Social-popular and populist girls were rated equally high on Attractiveness and Fashionability and far higher than unpopular girls. Finally, Dating was higher for social-popular and populist girls than unpopular girls.

Late Adolescence (16-19 years).

In late adolescence, variation in behavioral characteristics was even more pronounced than at earlier ages, judging by the increased partial η^2 effect sizes (ranging from .14-.59). Populistic boys were judged far more Antisocial and far lower in Academia than either social-popular or unpopular boys; the latter two did not differ. Social-popular boys were judged highest in Gregariousness, followed by populist boys, who in turn were judged higher than unpopular boys. Social-popular and populist boys did not differ on Attractiveness, Fashionability or Dating, but were higher than unpopular boys on these three dimensions.

Late adolescent girls showed a similar behavioral pattern. Populistic girls were judged higher on Antisocial behaviors than either social-popular or unpopular girls. Academic was higher for social-popular girls than populist or unpopular girls; the latter two were rated equally low. On Gregariousness, highest were social-popular girls, followed by

populistic girls and then unpopular girls. Similar to late adolescent boys, girls at this age rated the social-popular and populistic girls equally high on Attractiveness, Fashionability and Dating, and far above unpopular girls.

Because the Health Risk factor included Skips Class, the individual items on drinking and smoking were analyzed individually. The current study suggests that alcohol consumption skyrocketed in the late adolescent age group (a raw score of nearly 6 out of 7) for boys and girls. Although alcohol use was highest for populistic teenagers ($M=5.71$, $sd=1.17$), the social-popular teenagers ($M=4.33$, $sd=1.69$) were rated nearly twice as high as their unpopular classmates ($M=2.39$, $sd=1.66$). Smoking was present mostly in populistic late adolescents.

Dating across Age and Gender

Dating behavior (at least, after preadolescence) was judged far higher for popular boys and girls than unpopular ones, regardless of type of popularity (see Figures 1 and 2).

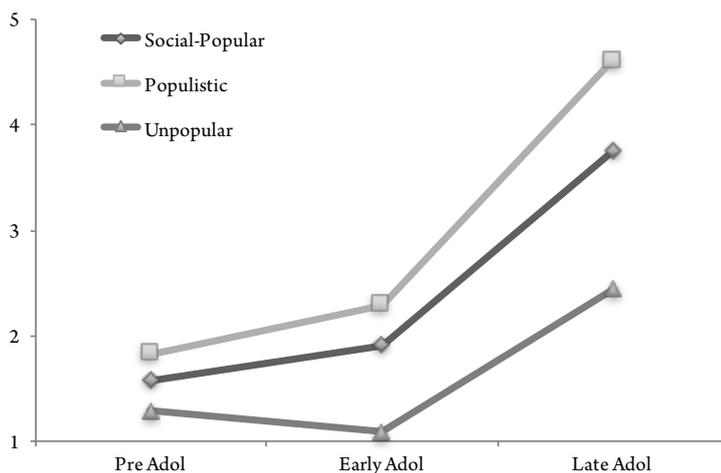


Figure 1: Dutch Boys' Dating by Age and Popularity Type (raw scores)

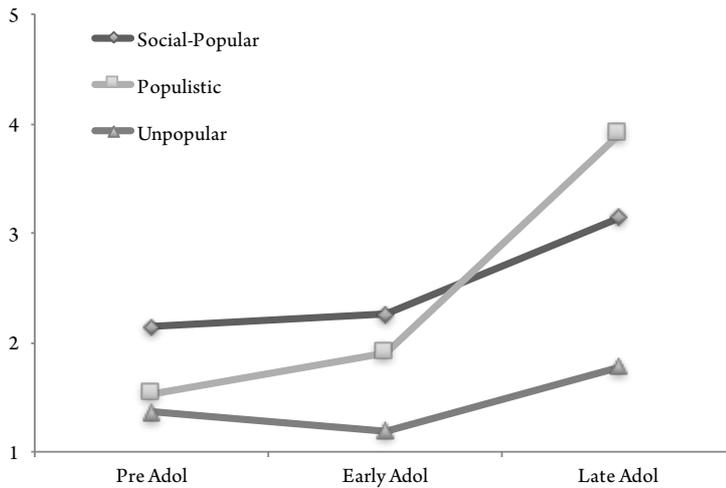


Figure 2: Dutch Girls' Dating by Age and Popularity Type (raw scores)

In order to further analyse the Dating patterns, we conducted a step-wise regression analysis (Tabachnick & Fidell, 2007). This analysis allowed us to link certain variables and reveal which behaviors were most predictive of Dating, considering that most of the variables are probably highly correlated and associated with Dating, such as Attractiveness and Fashionability. The step-wise regression analysis was conducted only on the two older age groups, considering that in pre-adolescence Dating was at a very low level.

Table 5: Stepwise Regression of Behavioral Measures on Dating.

	Boys			Girls			
	ΔR^2	B	SE _B	ΔR^2	B	SE _B	
Attractiveness	.15*	.38*	.04	Attractiveness	.14*	.31*	.04
Antisocial	.17*	.16*	.04	Antisocial	.18*	.18*	.04
				Health Risk	.20*	.15*	.04

Note: * = $p < .001$

Table 5 displays the results from the stepwise regression analyses of all measured variables on Dating, for boys and girls separately. For boys, Attractiveness was a significant predictor of Dating followed by Antisocial ratings (total adjusted $R^2 = .17$; $p < .001$). For girls, Attractiveness was a significant predictor, followed by Antisocial ratings (total adjusted $R^2 = .20$; $p < .001$).

Summary

The analyses confirmed the hypotheses. In all three age groups, students were able to reliably rate the two popular and the unpopular type of classmates. The social-popular individuals were higher in prosocial and academic behaviors than the populist individuals. The latter appeared to display far more antisocial behaviors than social-popular individuals. Both types of popular individuals were higher on Attractiveness and Fashionability than unpopular individuals. These discrepancies appeared to be present in all three age groups. Drinking and smoking were reported mostly for the populist late adolescents. Finally, both popular types did not differ on Dating ratings, and both were rated far higher than unpopular classmates.

DISCUSSION

Routes to Consensual popularity and Behaviors

Different routes to consensual popularity appear to be present (in The Netherlands at least) from as young as 10-11 years into late adolescence. There seem to be two distinct pathways to a high level in the popularity hierarchy, a socially accepted and pro-academic pathway and a socially toxic, anti-academic pathway. Individuals on both pathways appear to share good looks and fashionable attire. In biological terms, the two phenotypes (an antisocial and a prosocial one) represent an instance of developmental plasticity, i.e., polyphenism (West-Eberhard, 2003). This latter notion ties in with Hawley's (2014) findings that children and adolescents who are socially powerful and successful adopt either a coercive resource control strategy or a mix of prosocial and coercive behavioral strategies. Life history theory might prove useful in explaining just what conditions evoke one or the other strategy for attaining popularity. For this, cross-class research might be enlightening.

This study may carry practical implications for adolescent development. Populistic individuals, being successful at dating, may be imitated by other students, creating a clique of individuals displaying behaviors antithetical to a positive school environment (e.g., Jamison, Wilson & Ryan, 2015). Popular teenagers were relatively high alcohol users. Their powerful position may encourage classmates to follow their lead, a process that was investigated by Ali, Amialchuk and Nikaj (2014). They showed that an increase in alcohol use made adolescents more popular, and a recent study suggested that female adolescents are more sexually attracted to smoking and drinking boys as short-term mates (Vincke, 2016). Smoking appeared more present among populist late adolescents than either social-popular or unpopular classmates. Vincke (2016) showed that boys who smoked were perceived by girls more as pursuers of a short-term mating than a long-term mating strategy. Smoking and drinking males were viewed as more attractive.

The current study also confirmed the previously reported association between popularity and bullying (De Bruyn, Cillessen & Wissink, 2009). The present study shows further that popular bullies are usually of the populist type. This may explain the moderating effects of likeability on the association between bullying and popularity that De Bruyn et al. found; popular teenagers who were low in likeability were even more

likely to bully than friendly popular teenagers. In both studies, unpopular individuals tended to be the victims.

Consensual Popularity and Dating Frequency

Bullying may actually have potential reproductive fitness benefits for the individual (Dane et al., 2016; Gallup et al., 2009; Volk, 2015). This relationship may explain the ubiquity and tenacity of bullying in high schools. Garandeau, Lee and Salmivalli (2014) showed that anti-bullying programs had a diminishing effect on non-popular bullies but little to no effect on popular bullies, who presumably gained dating and mating opportunities.

Interestingly, the link between popularity position and dating appears absent before puberty (see Figures 1 and 2), but this should not be surprising, considering the near absence of sexual relationships in pre-adolescence. Similarly, Fashionability and Attractiveness rose in effect sizes through adolescence. However, this does not imply that pre-adolescents reap no benefits from a high position and that peer competition concerns mating alone. Indeed, Hawley and colleagues (1999; 2002; 2007; 2014) have convincingly shown that high-status individuals, regardless of age, get what they want. The results of the present study confirm that the popularity typology is in place even in preadolescence. When puberty commences, getting what you want now focuses mostly around sex (Jones & Bayley, 1950; Weisfeld, 1999). Reaping the ultimate evolutionary benefit may then reinforce pre-existing behavioral patterns that had led to 'getting what you want' earlier in ontogeny.

The present study also confirms the existence of antisocial, anti-academic girls who are high in bullying, yet find themselves at the top of the power hierarchy (see also, De Bruyn & Cillessen, 2006a). Campbell (1995, 1999, 2004) and others have argued that girls' bullying is often related to mating strategies. A special issue on the evolution of female competition and aggression discussed this link extensively (Stockley & Campbell, 2013; Vaillancourt, 2013). Thus, some girls seem to have adopted either a behavioral pattern rife with indirect aggression (as witnessed by high levels of malicious gossip) or a pattern exuding prestige and thereby inspiring admiration and respect. These findings on female competition suggest that the Young Male Syndrome concept (Wilson & Daly, 1985) may need to be tempered, or possibly contrasted with a Young Female Syndrome.

Conclusion, Limitations and Suggestions for Future Research

The present study has many limitations. The methodology utilized a questionnaire about classmates and thus may have led to response biases. Questionnaire studies assume uniform and expected interpretation of items and the absence of aberrant connotations or associations of terms. For example, the respondents in this and previous studies asserted that they understood the distinction between the two types of popularity, but there is no objective confirmation of this. By contrast, Savin-Williams (1977) found that his sample of adolescent boys' ratings of peers' dominance ranks agreed closely with his own observation-based hierarchy, confirming the validity of the boys' understanding of the term "dominance." The question of whether or not the two forms of popularity differ continuously or bimodal needs to be addressed. One could apply a diary method (Iida, Shrout, Laurenceau & Bolger, 2012) in order to focus on what Baltes and Nesselrode (1979) called the 'intraindividual change and interindividual patterns... of

intraindividual change' (p.3). Another limitation is that respondents were asked to think of a classmate with certain characteristics, but it is not known to what extent the respondents had the same group of classmates in mind who showed those characteristics. Asking respondents about particular individuals would obviate that problem. Future studies might use sociometrics and person-centered analyses (e.g., cluster analysis) to identify popular and unpopular youngsters. Observational research would address some of these problems and provide naturalistic validity (e.g., Savin-Williams, 1977; Weisfeld & Weisfeld, 1984). For example, in the present study popular adolescents were found to be gregarious, with large effect sizes; this finding might be corroborated by observational studies.

Although the present study interviewed participants from typical Dutch schools, participants may be considered WEIRD—(people from White, Educated, Industrialized, Rich & Democratic countries; Henrich, Heine, Norenzayan, 2010). Moreover, these two schools are not necessarily representative of all Dutch schools, and the age differences found between the two schools may have reflected school factors and not developmental effects.

Youngsters from different cultures need to be investigated. Dong, Weisfeld, Boardway, & Shen (1996) have shown that in China, academic success was a strong predictor of consensual popularity. Also, in more traditional societies such as the Hadza, skill at subsistence activities such as hunting can bring an adolescent boy prestige (Blurton Jones, Hawkes & O'Connell, 1997).

Popularity, dominance and leadership among adolescent peers seem to rest on (1) physical attractiveness, (2) social skills whether prosocial or aggressive, and (3) resource acquisition potential including family influence. Future research might investigate possible sex differences in the criteria of popularity as applied by peers of each sex. So far, research seems to indicate that similar criteria operate when each sex is judged by both sexes: an individual who is high in the esteem of girls is high in the esteem of boys (e.g., Weisfeld et al., 1983, 1984). The present study solicited the judgments of same-sex peers only; both sexes might be queried in future research, to determine if each sex chooses the opposite sex on criteria for mating, but chooses same-sex companions and leaders on other criteria.

Lastly, the varying terms used to refer to these behavioral types need to be clarified. Are popular individual dominant in Hawley's sense of gaining access to contested resources? Should this research area cleave more closely to the ethological concept of dominance than to social psychological concepts of peer popularity?

ACKNOWLEDGEMENTS

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. We are grateful for the participation of students and staff from Stedelijk Gymnasium Den Bosch; OBS de Bussel in Blokker and OBS Het Ooievaarsnest in Zwaag, The Netherlands. Thanks also to the following AUC students in helping collect the data: V.Argust; N.Bank; M.Crijns; A.Dispenza; T.Hakman; G.Karvellas; J.Kist; L.Kollen; E.Kruimer; V.Metselaar; P.Negri; D.Nicolson; R.Outila; E.Persson; E.Tolmeijer; S.Vonk; T. Vulfson; R.Weyzen; Y.Zonneveld; M.de Rooy; S.dos Santos Birrento Cordeiro.

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