Prosocial and Coercive Configurations of Resource Control in Early Adolescence: A Case for the Well-Adapted Machiavellian

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Self- and other-reported characteristics of children who varied in their use of coercive (aggressive) and prosocial (cooperative) strategies of resource control were studied in a sample of over 1,700 children. Based on self-reported use of coercive and prosocial strategies of resource control, the children were categorized as bistrategic controllers (Machiavellians), coercive controllers, prosocial controllers, noncontrollers, or typicals. Self-reported positive characteristics (e.g., agreeableness), negative characteristics (e.g., hostility), and self-assessments (e.g., social self-concept) were measured as well as peer ratings of aggression and peer regard (e.g., likability, popularity) and teacher ratings of agreeableness, aggression, and social acceptance. As hypothesized, the subtypes differed across these variables in predictable ways. Specifically, Machiavellians (i.e., those using both strategies of resource control) emerged as possessing positive and negative characteristics and, despite their aggression, Machiavellians were socially central, liked by peers, socially skilled, and well adjusted. The utility of an evolutionary perspective to resource control and social competence is discussed as an additional model of aggression.

Aggressive behavior has been traditionally considered an indicator of psychological or behavioral maladaptation. Aggression is associated with peer rejection (Coie & Dodge, 1998; Coie, Dodge, & Kupersmidt, 1990), risk-taking behavior (Brook & Newcomb, 1995), low educational achievement (Brook & Newcomb, 1995), and unemployment (Caspi, Elder, & Bem, 1987; Kokko & Pulkkinen, 2000). Most developmental

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approaches to aggression preclude the possibility that aggression may be associated with social competence. Nonetheless, many highly successful and well-accepted individuals (e.g., CEOs, political leaders) show at least modest levels of aggressive behavior.

The schoolyard is in many ways a microcosm of society at large. Youths encounter peers who are all pursuing individual goals and creating contexts that call for compromise, negotiation, cooperation, and reconciliation. As in the adult world, some children stand out as being especially effective at achieving their personal goals. Also as in the adult world, these effective competitors can be aggressive, deceptive, and manipulative. Yet as we observe these individuals in action, we often can't help but be impressed by their skills and perhaps even feel drawn to them even after having seen their "dark side." This study addresses these youths who I refer to as *Machiavellians.*

Aggression and Social Incompetence

Positive and negative behaviors are often considered diametrical opposites in the developmental and risk literatures. Socially competent individuals express positive affect, are responsive to others, are agreeable and sympathetic (e.g., Attili, 1990; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992), and accordingly are liked by others (Newcomb, Bukowski, & Pattee, 1993). In contrast, social incompetence is associated with aggression, impulsivity, and hostility (e.g., Chung & Asher, 1996; Dodge, Murphy, & Buchsbaum, 1984). As a consequence, the aggressive individual repels others (Coie & Cillessen, 1993; Newcomb et al., 1993). Accordingly, interventions seek to reduce negative behaviors and increase positive ones (Asher & Rose, 1997). Indeed, the terms *prosocial* and *antisocial* reinforce beliefs that they are at opposite ends of the same dimension.

More recent work has described behavioral profiles that challenge theoretical expectations. For example, socially competent popular children do not differ on some measures of aggression from other status groups (Newcomb et al., 1993). In fact, popular boys may be of the nonaggressive (prosocial) and aggressive (tough) varieties (Rodkin, Farmer, Pearl, & Van Aker, 2000). Aggressive children are no less socially central than nonaggressive children (Bagwell, Coie, Terry, & Lochman, 2000) and aggressive behavior has been related to status improvement (Sandstrom, 1999; see also Luthar & McMahon, 1996). Sociometrically controversial children (those receiving nominations for being liked by some peers and disliked by others) have usually been seen as departures from the expected. Their relative infrequency, however, has thwarted closer scrutiny (Cairns & Cairns, 1994).

An Evolutionary View on Aggression

In contrast to developmental views, evolutionary perspectives to human behavior seldom consider aggression to be generally maladaptive. On the contrary, aggression is presumed to have some adaptive value. For this reason, evolutionary points of view raise the question of whether some forms of aggression are more socially adaptive than is commonly believed (Hawley, 2002).

The possible adaptive value of aggression can be envisioned in view of within-group competition. Social groups facilitate access to resources that individuals cannot acquire and defend individually. Members of a group, however, must compete among themselves for access to these very resources. Pressures to be a good group member and a (good enough) competitor presumably gave rise to various strategies of competition, including those that are indirect and cooperative (prosocial) or direct and assertive (coercive). Superior competitors should be socially central because they have proven themselves to adeptly procure that which others want.

The idea that conflict is part of group life is not new; political philosophers have discussed this for hundreds of years. The founders of modern psychology (e.g., Freud, James, McDougall) pondered basic human needs including needs for social interaction and aggressive self-expression. Hogan (e.g., Hogan, 1982; Hogan & Hogan, 1991) goes so far as to argue that the most important differences among people involve affiliative competencies and status—in his words, "getting along" and "getting ahead." Social competence may entail a balancing of the needs to get along (being liked, accepted) and to get ahead (effectiveness, power).

For ethologists, social dominance has been mainly "getting ahead." Whereas traditional ethological approaches define social dominance in terms of aggression with impunity (e.g., Bernstein, 1981) more recent views define it in terms of effective resource control (Hawley, 1999a). By shifting attention away from the aggression-based hierarchy to asymmetries in competitive abilities, one can entertain questions about the strategies that individuals employ and the personal characteristics associated with choosing one strategy over another.

Direct and assertive strategies of resource control, for example, are consistent with traditional aggression-based views of social dominance as well as modern developmental constructs of instrumental aggression (e.g., Atkins & Stoff, 1993; Lorenz, 1967). In humans, this instrumental aggression may take direct (e.g., physical) and indirect forms (e.g., threats for reputational harm). Indirect and cooperative strategies, however, do not have an analogue in the developmental literature.

Cooperative strategies may involve prosocial behavior (e.g., reciprocity), which developmentalists do not generally regard as strategic. An exception to this trend can be seen in the work of Charlesworth and LaFreniere (Charlesworth, 1996; LaFreniere & Charlesworth, 1987), who showed that prosocial strategies are more effective than coercive strategies for accessing limited resources when cooperation or group coordination is required. By making friendly requests and promising reciprocation, children can gain unequal access to a highly desirable resource for themselves (e.g., film-viewing access; LaFreniere & Charlesworth, 1987). Children employing coercive strategies (e.g., those who make demands and threats) fared better than noncompeting children. Coercion may be less adaptive relative to prosocial strategies, but both strategies can be effective in goal achievement (Coie, Dodge, Terry, & Wright, 1991; Olweus, 1993). In fact, coercion may be better than not trying at all (Bandura, 1997; Hawley & Little, 2002; Little, Hawley, Henrich, & Marsland, 2002).

Neither the evolutionary nor more recent developmental positions view prosociality and antisociality as mutually exclusive. Each perspective realizes that coercive children with and without prosocial tendencies may be very different from each other. Pulkkinen and her colleagues, for example, have argued that prosocial activity may signal a level of emotional regulation that may be absent in antisocial children (Kokko & Pulkkinen, 2000). Similarly, prosocial tendencies appear to buffer a child from peer rejection, an underlying factor of later maladaptation (Bierman, Smoot, & Aumiller, 1993). These studies and theoretical lines together suggest that aggression does not necessitate social maladaptation. What this work has not clarified, however, is why aggressive behavior inconsistently repels others, and moreover, why it sometimes appears to attract (e.g., Luthar & McMahon, 1996).

Machiavellianism Redux

Machiavelli's name evokes images of manipulation and deceit. As an astute political observer in a time when Renaissance Italian states were jockeying for position, he observed which power strategies were effective and under what conditions. In psychology, his name was initially employed by Christie and Geis (1968) to note similarities between his description of effective power holders (*The Prince,* 1532) and modern manipulators. Since then, studies have addressed Machiavellianism's relationships with ethics (Mudrack & Mason, 1995), prosocial behavior (Barnett & Thompson, 1985), socioeconomic achievement (Turner & Martinez, 1977), and psychopathy (e.g., McHoskey, Worzel, & Szyarto, 1998).

Machiavelli's name is invoked here because his philosophy appears to describe the behavior of socially dominant preschoolers (Hawley, 2002) and adolescents (Hawley, Little, & Pasupathi, 2002). His philosophy did not give rise to our point of view, but instead aptly reflects it. The present view on strategies of resource control arises from evolutionary thinking and animal behavior (Hawley, 1999a; cf. Sloan Wilson, Near, & Miller, 1996). From this stance, and perhaps Machiavelli himself would agree, the most effective strategy would be a balance of prosociality and coercion. The use of both strategies gives rise to the label "bistrategic resource controller," versus employing one strategy over the other (i.e., "prosocial controller" and "coercive controller"). The end effect would be a highly effective resource controller who commands a great deal of attention from the group.

Classifying Children by Resource Control Strategy

The conceptual independence of prosocial and coercive resource control strategies permits a typological approach for the study of associations between aggression and relevant outcomes. Present classifications were made by using cutoff points on the dimensions of self-reported prosocial and coercive strategies (see also Hawley et al., 2002). Adolescence is an optimal stage in the life span for a study from this perspective because the two strategies are presumably differentiated, making a typological approach feasible and optimally meaningful (cf. Hawley, 2002). Should a child's responses, for example, lie above the 66th percentiles for both strategies, the child is categorized as a "bistrategic." Similarly, scoring above the 66th percentile for one strategy and below the 66th percentile for the other, the child is using predominantly one strategy and is classified as such (i.e., a prosocial or coercive controller). Children scoring below the 33rd percentile on both would be classified as a noncontroller, or a subordinate. Most of the children fall somewhere in between and are therefore classified as "typicals" and serve as a fitting comparison group.

Questions of the Study

First, which qualities are characteristic of the most successful resource controllers in the peer group? We believe these bistrategic controllers would have characteristics traditionally associated with social competence and popularity (e.g., agreeableness, social skills, conscientiousness) as well as characteristics often tied to social incompetence and peer rejection (e.g., hostility, aggression, willingness to cheat). In Hogan's terms, these children may be highly driven to "get ahead" as

well as concerned with "getting along." These children may have an aggressive stance that is psychologically adaptive because it is effective in achieving instrumental goals and executed in a way that inspires enough admiration to mitigate negative social fallout. These bistrategic children may not be the most liked (i.e., they may not be the most popular in a sociometric sense), but they may be perceived by the group to be the most popular (e.g., perceived popularity; LaFontana & Cillessen, 1998; Parkhurst & Hopmeyer, 1998). In addition, because of their social skills, their aggression may not be visible to adult observers (e.g., teachers).

This logic leads to the second question: Do the other subtypes of children differ in important ways and, accordingly, receive differential feedback from the peer group? Prosocial controllers—those who put "getting along" over "getting ahead"—would be agreeable/sociable, socially skilled, conscientious (i.e., able to delay gratification), and, as a consequence, enjoy the most favorable peer regard of all groups (actually be popular rather than only perceived as such). Children employing primarily coercive strategies (i.e., coercive controllers) would have the opposite profile to that of the prosocial controllers; they would be more concerned with getting ahead than getting along and would experience negative feedback from the social group for being so.

The last question concerns the subordinates (i.e., noncontrollers) who are neither oriented toward getting along nor getting ahead. These children employ no strategies of resource control, enjoy no resource control as a result, and as a consequence of their ineffectiveness in the environment, may be overlooked by their peers. This combination of ineffectiveness with social neglect would be associated with indicators of ill-being.

Method

Participants

Children from Grades 5 through 10 from five schools from Berlin, Germany, were recruited to participate (M age = 14.0 years, s = 1.63). Only children who provided written informed consent could participate in the study. A total of 75% schoolwide participation resulted in a total of 1,723 children, 913 of which were girls and 810 were boys. The socioeconomic characteristics of these children's families were generally lower to middle class and the schools served areas that had less than 18% ethnic minority representation (the sample is 12% Turkish, 82% ethnic German, and 6% other). Because not all teachers chose to participate in the study, the sample sizes on teacher-rated variables are

substantially lower than for data collected from the children themselves (i.e., $n = 733$).

Procedure

Data were collected in the fall of 1998. The participants filled out a battery of questionnaires during three 45-min sessions spanning approximately 2 weeks (the orders of presentation were counterbalanced). A proctor and at least one assistant were present in each session. All questions were read aloud to the 5th and 6th graders to facilitate comprehension.

Measures

The aggression instrument was codeveloped in English and German. The remaining measures were either translated into German (using back-translation and bilingual committee evaluation procedures) or adapted from established measures in the literature.

SELF-REPORTED STRATEGY USE

The self-report questionnaire response categories were on a 4-point scale (i.e., never, seldom, often, always). Participants were asked to rate the degree to which they employ prosocial strategies of control (e.g., "I influence others by doing something in return," "by explaining why it's a good idea," "by being really nice about it") and coercive strategies of control (e.g., "I often bully or push others to do what I want," "I often trick others to do what I want," "I usually force others to do what I want"). Each construct was measured as an average of six items. High scores indicate higher endorsement of employing the strategy. Overall, prosocial control had a higher average ($M = 2.16$, $SD = .57$) than coercive control ($M = 1.57$, $SD = .40$). Both had acceptably high alpha reliabilities (.79 and .78 respectively; see Table 1 for means, standard deviations, and alpha reliabilities for all constructs).

SELF-REPORTED PERSONAL CHARACTERISTICS, SOCIAL SKILLS, AND WELL-BEING

Participants additionally rated themselves on positive personal characteristics including agreeableness (e.g., "I am . . . mean-spirited/unsympathetic," "kind/agreeable," "generous/giving"; after John, Caspi, Robins, Moffitt, & Stouthamer-Loeber, 1994), conscientiousness (e.g., "I am . . . thorough/planful," "responsible/dutiful," "conscientious/hard-working"; John et al., 1994), and attention to social cues (e.g., "When I am talking to friends, I can tell when I make them feel bad," "When I am talking to friends, I can tell when I make

Table 1. Raw Means, Standard Deviations for the Subgroups and Overall Reliabilities for the Constructs

	Bistrategic		*Coercive*		*Prosocial*		*Typical*		*Subordinate*		*Combined information*		
Construct	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*alphas*
Self-report													
Prosocial control	2.90	.40	1.96	.29	2.69	.34	1.93	.28	1.51	.25	2.16	.57	0.79
Coercive control	2.11	.41	1.89	.27	1.39	.17	1.42	.15	1.14	.09	1.57	.40	0.78
Agreeableness	3.35	.51	3.08	.53	3.58	.36	3.28	.50	3.20	.58	3.29	.52	0.66
Conscientiousness	3.06	.54	2.81	.51	3.11	.49	2.91	.49	2.86	.53	2.94	.52	0.60
Attn. to social cues	3.21	.59	2.82	.63	3.20	.59	2.79	.60	2.43	.74	2.88	.68	0.86
Hostility	2.11	.69	2.13	.67	1.69	.54	1.83	.58	1.72	.64	1.73	.47	0.62
Cheating	1.87	.78	1.87	.71	1.54	.54	1.61	.57	1.51	.64	1.67	.66	0.79
Aggression	1.60	.46	1.59	.37	1.26	.23	1.33	.25	1.23	.23	1.37	.36	0.92
Resource control	2.29	.48	1.94	.34	1.94	.37	1.72	.29	1.48	.29	1.85	.43	0.63
Social self-concept	3.38	.48	3.12	.53	3.46	.46	3.21	.48	3.00	.65	3.23	.53	0.69
Positive affect	2.59	.69	2.46	.57	2.62	.66	2.41	.63	2.35	.63	2.47	.64	0.87
Peer nominations													
Resource control	.34	1.12	−.02	.80	.16	.99	−.12	.78	−.27	.60	0	1.0	0.81
Prosocial control	.33	1.06	−.06	.79	.24	1.09	−.13	.74	−.26	.64	0	1.0	0.79
Coercive control	.32	1.16	.11	.99	−.01	.91	−.14	.72	−.14	.74	0	1.0	0.86
Aggression	.22	.91	.09	.82	−.02	.76	−.09	.66	−.13	.60	0	1.0	0.91
Likeability	.04	.84	−.09	.86	.13	.87	.01	.88	−.11	.76	0	1.0	0.69

(continued)

Table 1. *(continued)*

	Bistrategic		*Coercive*		*Prosocial*		*Typical*		*Subordinate*		*Combined information*		
Construct	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*alphas*
Self-report													
Nominations cont.													
Perceived popularity	.23	1.06	−.08	.84	.28	1.08	−.09	.85	−.27	.66	0	1.0	0.89
Perceived neglect	−.11	.78	.05	.91	−.16	.66	−.03	.89	.31	1.25	0	1.0	0.89
Perceived rejection	−.05	.84	.10	.98	−.15	.78	−.04	.89	.20	1.18	0	1.0	0.91
Teacher ratings													
Aggression	2.84	1.15	3.07	1.21	2.71	1.19	2.76	1.26	2.41	1.03	2.77	1.20	0.87
Agreeableness	5.11	1.19	4.86	1.06	5.33	1.13	5.16	1.14	5.45	.97	5.17	1.13	0.87
Social acceptance	4.91	1.22	4.08	1.39	5.01	1.29	4.41	1.38	4.54	1.43	4.56	1.38	0.84

them feel good"; Edwards & Pledger, 1990). When appropriate, negative valence items were reverse coded so that a high score on the construct indicated that the participant held himself or herself to be highly agreeable, and so on. Participants also rated themselves on negative personal characteristics including hostility (e.g., "I am often angry at others," "I often pick on others," "I often argue with others"; Seitz & Rausche, 1992), cheating ("I copy my homework from others," "During tests I try to cheat," "In school I try to cheat"), and aggression ("I'm the kind of person who often fights with others," "I often start fights to get what I want," "To get what I want, I tell others I won't be their friend anymore"[1]). Finally, participants were asked to rate themselves on a number of personal outcomes including resource control (e.g., "I usually get what I need, even if others don't," "I get what I want," "I usually get the best roles in class activities"), social self-concept (e.g., "It is easy for me to be with others," "I often do things with others"; Harter, 1990), and positive affect (e.g., "I feel good," "I feel super," "I feel full of energy").

Peer Nominations

To validate self-perceptions of key characteristics such as strategy use, resource control, and aggression, the participants were asked to nominate three peers they felt (a) were effective resource controllers (e.g., "Who is best at getting what they want?", "Who usually gets attention from others?"), (b) employed prosocial strategies (e.g., "Who do others choose to lead the group?", "Who has good ideas or suggestions that the others like to follow?"), (c) employed coercive strategies (e.g., "Who makes others do what they want?", "Who forces others to follow their plans?"), and (d) were aggressive (e.g., "Who starts fights to get what they want?"; see Footnote 1). In addition, to determine who was popular in the peer group versus who was simply perceived as being popular (i.e., popularity vs. perceived popularity), participants were asked to list three peers according to the questions, "Who do you like the most?", "Who do you like to hang out with?" (popularity; Coie

[1] The self-reported aggression measure is an average based on six aggression subscales, each with six items. At the construct level, we measured Overt Dispositional Aggression ("I'm the kind of person who often fights with others"), Overt Instrumental Aggression ("I often start fights to get what I want"), Overt Reactive Aggression ("When I'm hurt by someone, I often fight back"), Relational Dispositional Aggression ("I'm the kind of person who tells my friends to stop liking someone"), Relational Instrumental Aggression ("I often tell my friends to stop liking someone to get what I want"), and Relational Reactive Aggression ("If others upset or hurt me, I often tell my friends to stop liking them"). Supplemental analyses revealed that the five subtypes did not differ in their pattern of differences across these constructs. For this reason, they were aggregated into one aggression construct presented here.

& Dodge, 1983) as well as to the questions, "Who is the most popular?", "Who do others like the most?" (perceived popularity; LaFontana & Cillessen, 1998; Parkhurst & Hopmeyer, 1998). Participants were also asked, "Who gets ignored and left out by others?", "Who is not played with or hung out with by others?" (perceived peer neglect), and "Who do the others dislike the most?", "Who is the most unpopular?" (perceived peer rejection). Data derived from the peer nominations procedures were standardized within classroom to control for variability in classroom size (and therefore number of nominations possible; see Table 1).

Teacher Report

Teachers were asked to report on each participant's aggression (i.e., "S/he is the kind of person who gossips or spreads rumors," "S/he is the kind of person who says mean things to others"; see Footnote 1), agreeableness (e.g., "He or she is . . . impolite/disrespectful," ". . . understanding/forgiving," ". . . generous/giving"), and social acceptance by peers (e.g., "S/he finds it easy to make friends, gets along well with other students, can talk with others when personal problems arise," "S/he is an outsider; has few friends; finds it difficult to make friends"). Teacher ratings were standardized within rater. Negative valence items were reverse coded so that a high score implies high agreeableness and high social acceptance (see Table 1).

Resource Control Groups

Because social dominance and strategy use is by our definition a relative differential (see Hawley & Little, 1999), dominance groupings were defined by dividing the distributions of self-report responses of both the prosocial and coercive strategy-use constructs into thirds (rather than using absolute cutoffs or criteria). Self-report descriptions of prosocial and coercive strategies were used because presumably adolescents know at some level the functions of their behavior. Peers may see coercive strategies merely as aggression with little insight into its instrumentality.

The five groups were formed as follows: (a) *bistrategic controllers* (i.e., Machiavellians) scored in the top 66th percentile on both dimensions (n = 302), (b) *coercive controllers* scored in the top 66th percentile on coercive control but average or low on prosocial control (n = 283), (c) *prosocial controllers* by definition are those who scored in the top 66th percentile on prosocial control but average or low on coercive control (n = 266), (d) *typicals* scored less than the 66th percentile on both (but only in the lower 33rd percentile

on one or the other control strategies; $n = 614$), and(e) *noncontrollers* (i.e., subordinates) scored in the lower 33rd percentile on both dimensions ($n = 258$).

Results

Gender by Resource Control Subtype

Gender sample sizes by resource control subtype are presented in Table 2. Overall, there were significant differences in gender distribution by subtype (χ^2 (4, $n = 1723$) = 83, $p < .001$). Based on the fact that 53% of the sample was female and 47% male, there was no significant deviation from chance expectations in the gender distribution in the number of females and number of males classified as bistrategic controllers or as noncontrollers. In contrast, there were more males than females than expected falling into the coercive controllers subtype and more females than males in the prosocial and typical subtypes.

Grade by Resource Control Subtypes

Grade sample sizes by resource control subtype are presented in Table 2. Overall, there were significant differences in grade distributions by subtype (χ^2 (20, $n = 1723$) = 57.76, $p < .001$). This significant effect appears mainly to be due to the overrepresentation of 10th graders in the bistrategic classification and their underrepresentation in the typical group.

Table 2. Sample Size of Resource Control Types by Gender, Grade, and Ethnicity

	Bistrategic	*Coercive*	*Prosocial*	*Typical*	*Noncontroller*	*Total*
Gender						
Male	162	195	101	249	106	813
Female	140	88	165	365	152	910
Grade						
5th grade	21	28	20	60	22	151
6th grade	18	16	25	72	31	162
7th grade	49	44	50	133	63	339
8th grade	66	57	69	118	52	362
9th grade	61	76	63	136	51	387
10th grade	87	62	39	95	39	322
Total	302	283	266	614	258	1723

Intervariable Correlations

Because the sample size is large (i.e., $n = 1{,}723$), significance at the .0001 level is achieved with correlations as low as .10 (i.e., $r = .10$; $p < .0001$). For this reason, consideration of effect sizes (i.e., r^2) guides conclusions, and correlations are deemed significant if 10% of the variance in one variable is associated with the other (e.g., $r \geq .31$).

As can be seen on Table 3, self-reported prosocial strategies of control were positively associated with self-reported positive characteristics, such as social skills ($r = .41$, $r^2 = .17$) and social self-concept ($r = .33$, $r^2 = .11$). Self-reported coercive control was correlated with hostility ($r = .33$, $r^2 = .11$) and aggression ($r = .57$, $r^2 = .32$). In contrast, coercive control was unrelated to social skills ($r = .19$) and social self-concept ($r = .05$). Similarly, hostility ($r = .03$) and aggression ($r = .15$) were unrelated to prosocial control. Self-reported resource control was positively related to both strategies to an equal degree ($r = .55$, $r^2 = .30$).

Interrater Agreement

Correlations among peer nominations and self-rated prosocial strategies, coercive strategies, resource control, and aggression were minimally related (i.e., no correlations achieved the .31 cutoff; see Table 3). Although teacher-rated aggression and self-rated aggression were not correlated ($r = .17$, $r^2 = .03$), peer nominations for aggression and teacher-rated aggression were ($r = .40$, $r^2 = .16$). Additionally, teacher-rated social acceptance was consistent with perceived popularity ($r = .34$, $r^2 = .12$), perceived neglect ($r = -.43$, $r^2 = .18$), and perceived rejection ($r = -.36$, $r^2 = .13$), and marginally consistent with popularity ratings ($r = .27$; $r^2 = .07$). Furthermore, teacher-rated social acceptance was positively correlated with peer nominations for prosocial control ($r = .34$, $r^2 = .12$), and teacher-rated aggression was positively associated with peer nominations for coercive control ($r = .34$, $r^2 = .12$).

Positive Characteristics

A MANOVA with the three positive characteristics as dependent variables (agreeableness, social skills, and conscientiousness) revealed a multivariate effect of subtype, $F(12, 4540) = 30.91$, $p < .0001$. Univariate tests revealed that all three dependent variables differed significantly across the subtypes; agreeableness, $F(4, 1718) = 31.27$, $p < .0001$, social skills, $F(4, 1718) = 76.26$, $p < .0001$, and conscientiousness, $F(4, 1718) = 18.4$, $p < .0001$. All children who reported using

Table 3. Intervariable Correlations

	Self-report											*Peer nominations*								*Teacher ratings*	
	ProC	*CoerC*	*Agree*	*Consc*	*SocSk*	*Host*	*Cheat*	*ResC*	*Aggr*	*SelfC*	*PosAf*	*ProC*	*CoerC*	*Aggr*	*ResC*	*Pop*	*PrcPop*	*PrcNg*	*PrcRj*	*Accpt*	*Aggr*
Self-report																					
CoerC	.46																				
Agree	.26	−.14																			
Consc	.21	−.04	.45																		
SocSk	.41	.19	.38	.20																	
Host	.03	.33	−.21	−.17	−.05																
Cheat	.09	.28	−.16	−.27	.10	.20															
ResC	.55	.55	.03	.11	.24	.21	.18														
Aggr	.15	.57	−.30	−.16	−.00	.58	.34	.37													
SelfC	.33	.05	.24	.12	.20	−.23	.06	.18	−.16												
PosAf	.17	.05	.16	.24	.14	−.09	−.04	.17	−.06	.25											
Peer report																					
ProC	.26	.13	.10	.05	.14	.00	.01	.20	.05	.13	.02										
CoerC	.14	.22	−.04	.01	.03	.14	.09	.21	.24	.01	−.02	.31									
Aggr	.11	.20	−.04	.00	.03	.17	.11	.17	.26	−.00	−.03	.31	.85								
ResC	.23	.19	.04	.02	.11	.07	.07	.22	.15	.11	.03	.73	.61	.61							
Pop	.08	.01	.03	−.01	.04	−.02	−.01	.03	−.05	.17	.02	.38	−.02	.00	.24						
PrcPop	.22	.08	.10	.03	.13	−.01	.02	.15	.01	.18	.04	.76	.24	.22	.67	.47					
PrcNg	−.18	−.06	−.08	−.01	−.10	.04	−.08	−.10	−.00	−.30	−.07	−.19	.03	.09	−.13	−.27	−.23				
PrcRj	−.13	.00	−.06	.02	−.08	.06	−.05	−.03	.04	−.25	−.04	−.15	.20	.27	−.02	−.25	−.20	.85			
Teacher report																					
Accpt	.18	−.03	.16	.00	.03	−.03	−.09	.11	−.06	.17	.07	.34	.05	.08	.27	.27	.34	−.43	−.36		
Aggr	.03	.14	−.11	−.05	.05	.15	.11	.11	.17	−.08	.02	.07	.34	.40	.20	−.14	−.03	.07	.19	−.24	
Agree	.02	−.14	.20	.10	−.06	−.13	−.20	−.05	−.17	.05	.02	.06	−.25	−.26	−.10	.15	.11	−.10	−.18	.44	−.78

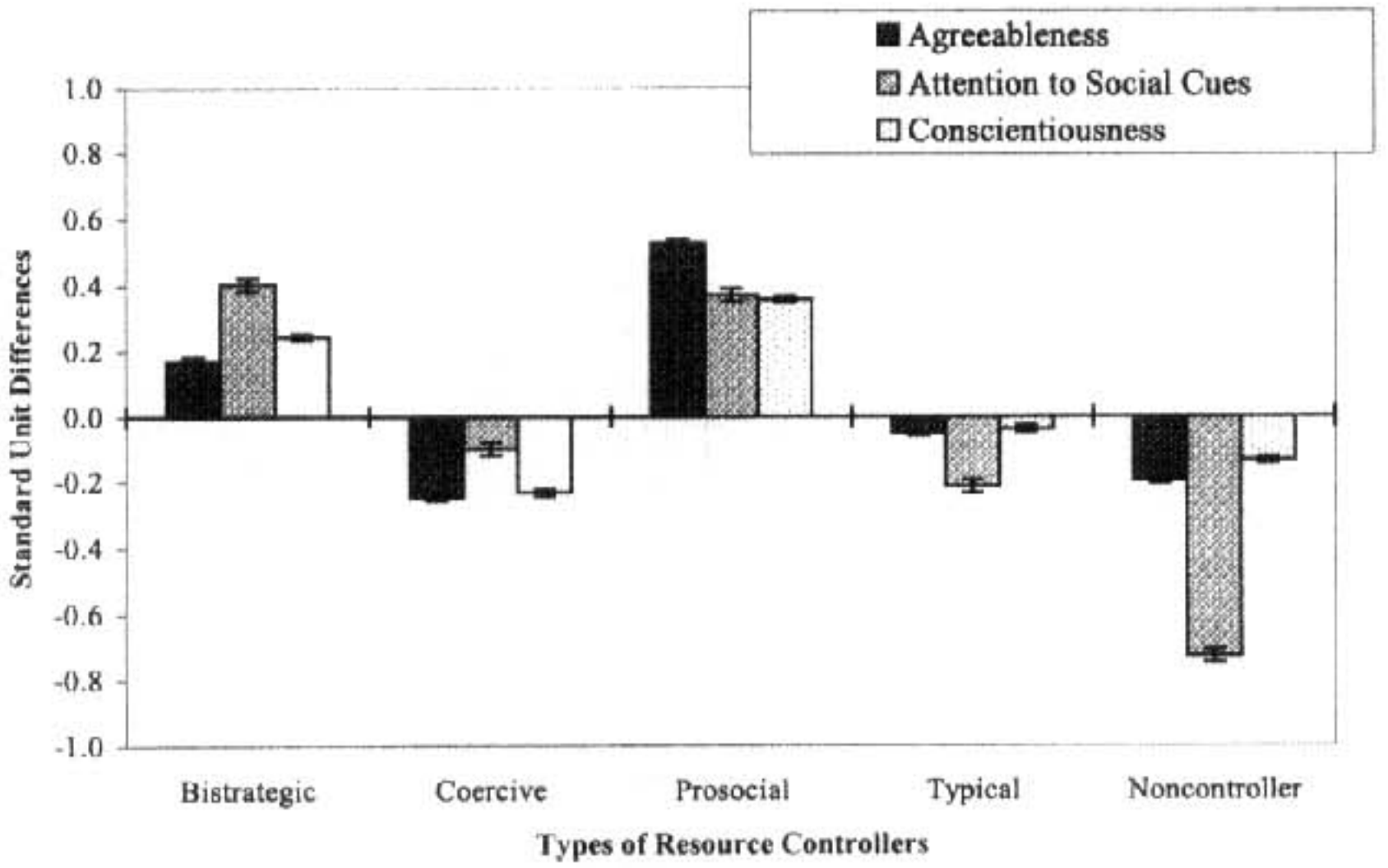

Figure 1. Standardized mean levels of self-reported positive characteristics by resource control strategy type.

prosocial strategies of control (i.e., bistrategic and prosocial controllers) rated themselves as above average on agreeableness, skills with peers (attention to social cues), and conscientiousness (see Figure 1). Scheffe's contrasts indicated that prosocial controllers reported themselves to be significantly more agreeable than the other types, with bistrategics being equal to the typicals. Bistrategics rated themselves as being as conscientious and attuned to social cues as the prosocial controllers. In contrast, noncontrollers rated themselves lower than average on agreeableness, equal to the coercive controllers and significantly lower than the other groups on social skills.

Negative Characteristics

A MANOVA with the three negative characteristics as dependent variables (aggression, hostility, and cheating) revealed a multivariate effect of subtype, $F(12, 4540) = 28.72$, $p < .0001$. Univariate tests revealed that all three dependent variables differed significantly across the subtypes; aggression, $F(4, 1718) = 89.67$, $p < .0001$, hostility, $F(4, 1718) = 29.89$, $p < .0001$, and tendency to cheat, $F(4, 1718) = 16.91$, $p < .0001$. Children who reported using coercive strategies of control (i.e., bistrategic and coercive controllers) rated themselves as above

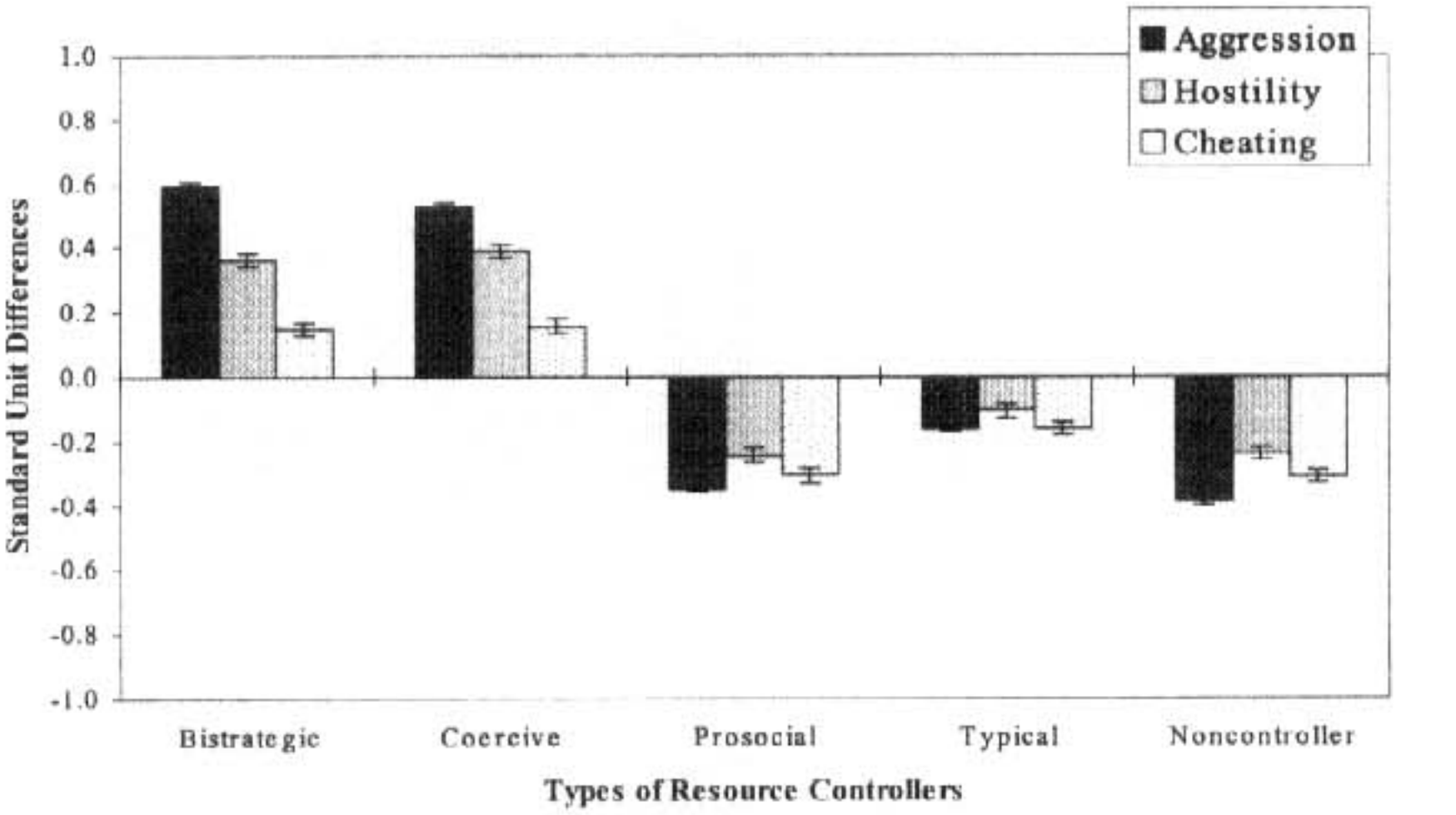

Figure 2. Standardized mean levels of self-reported negative characteristics by resource control strategy type.

average on aggression, hostility, and the tendency to cheat (see Figure 2). Scheffe's contrasts indicated that these characteristics did not differentiate the bistrategic and coercive controllers. Both the prosocial controllers and noncontrollers rated themselves the lowest on these characteristics with noncontrollers rating themselves significantly lower on aggression than all other types.

Personal Outcomes

A MANOVA with the three personal outcomes as dependent variables (resource control, social self-concept, and positive affect) revealed a multivariate effect of subtype, $F(12, 4540) = 66.90$, $p < .0001$. Univariate tests revealed that all three dependent variables differed significantly across the subtypes; resource control, $F(4, 1718) = 195.22$, $p < .001$, social self-concept, $F(4, 1718) = 34.77$, $p < .001$, and positive affect, $F(4, 1718) = 9.3$, $p < .001$. Bistrategic controllers reported themselves to be the most effective at resource control (see Figure 3). Also above average on resource control are the prosocial controllers and coercive controllers, shown to be equal as indicated by the Scheffe contrast. Noncontrollers rated themselves the lowest on being able to get what they want in the presence of others. Both bistrategic and prosocial controllers rated themselves above average on social self-concept and positive affect to an equal degree. In contrast, both coercive controllers and typical children are near average

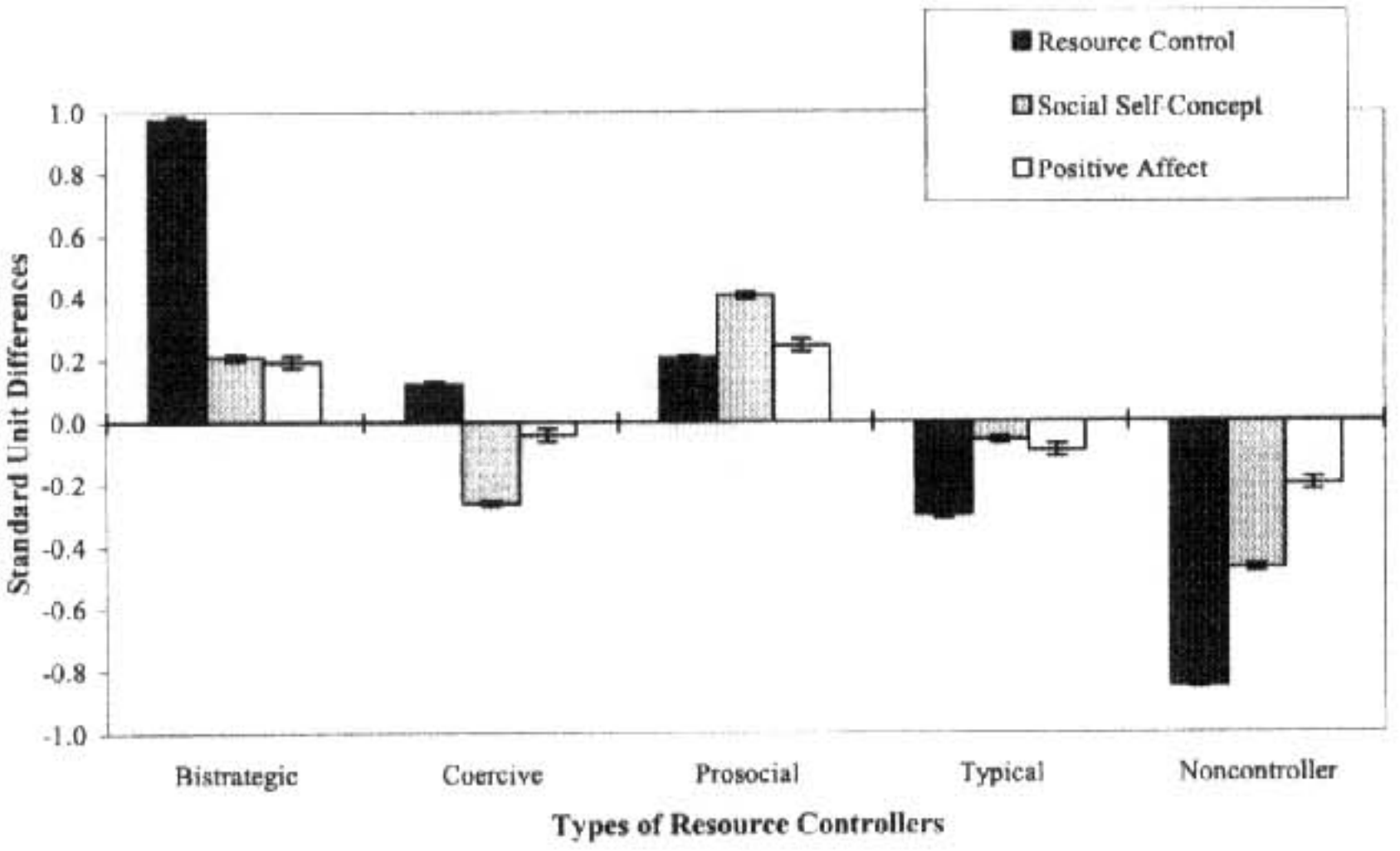

Figure 3. Standardized mean levels of self-reported positive self-assessments by resource control strategy type.

or below average on these characteristics. Noncontrollers are well below average on their self-ratings of social self-concept and positive affect.

Peer Ratings of Strategy Use

A MANOVA with peer ratings of strategy use and effectiveness as dependent variables (resource control, prosocial strategies, coercive strategies, and aggression) revealed a multivariate effect of subtype, $F(16, 5240) = 8.59$, $p < .0001$. Univariate tests revealed that all three dependent variables differed significantly across the subtypes; peer-nominated resource control, $F(4, 1718) = 21.82$, $p < .001$, prosocial strategies, $F(4, 1718) = 25.19$, $p < .001$, coercive strategies, $F(4, 1718) = 12.95$, $p < .001$, and aggression, $F(4, 1718) = 9.95$, $p < .001$. As shown in Figure 4, peers viewed bistrategic controllers consistently with the way they view themselves; to be the most effective controllers (statistically equal to prosocial controllers), to use prosocial strategies (equal to prosocial controllers), to use coercive strategies (more so than all other types), and to be quite aggressive (but statistically equal to coercive controllers). Coercive controllers received more nominations than average on coercive control and aggression, while prosocial controllers received above average nominations on effective resource con-

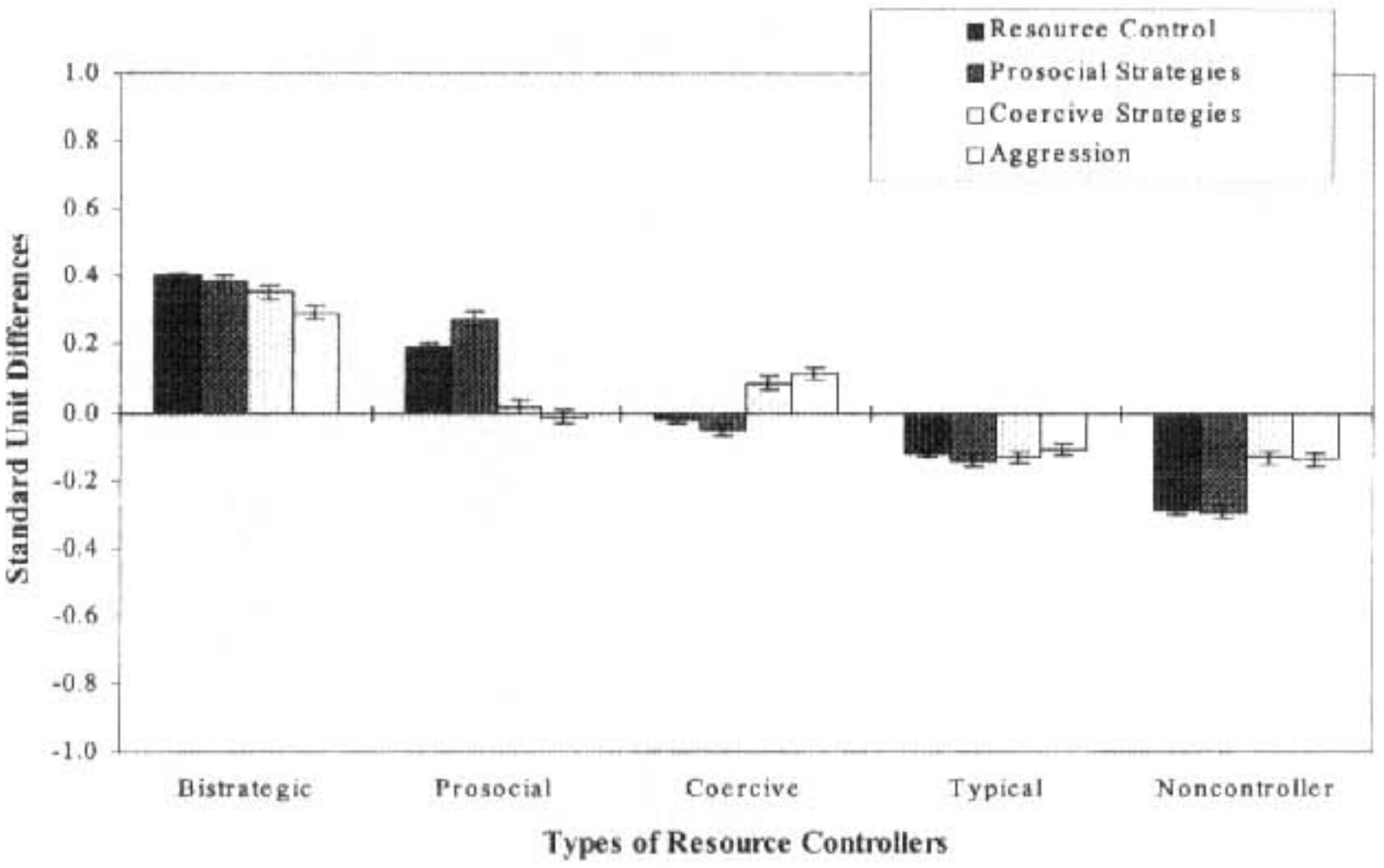

Figure 4. Standardized mean levels of peer-reported characteristics by resource control strategy type.

trol and prosocial strategies. Typical children were rated below average on all four constructs, as were noncontrollers.

Peer Status

A MANOVA with the perceived peer status and peer status variables as dependent variables (perceived popularity, perceived neglect, perceived rejection, popularity) revealed a multivariate effect of subtype, $F(16, 5240) = 7.27$, $p < .0001$. In terms of the status variables, peers perceived differences in the groups in terms of popularity, $F(4, 1718) = 18.8$, $p < .001$, peer neglect, $F(4, 1718) = 11.56$, $p < .001$, and peer rejection, $F(4, 1718) = 6.13$, $p < .001$. The effect for being liked (popularity), however, was not significant, $F(4, 1718) = 2.94$, $p = .02$. As shown in Figure 5, bistrategic and prosocial controllers were rated as above average on perceived popularity and did not differ from each other significantly. Additionally, both groups were rated below average on peer neglect. Coercive controllers were rated around the average on all four indices, as were the typical children. Noncontrollers received the fewest nominations for perceived popularity and the most nominations for neglect and rejection (significantly more than the other groups). Although not significant across groups, being liked followed a

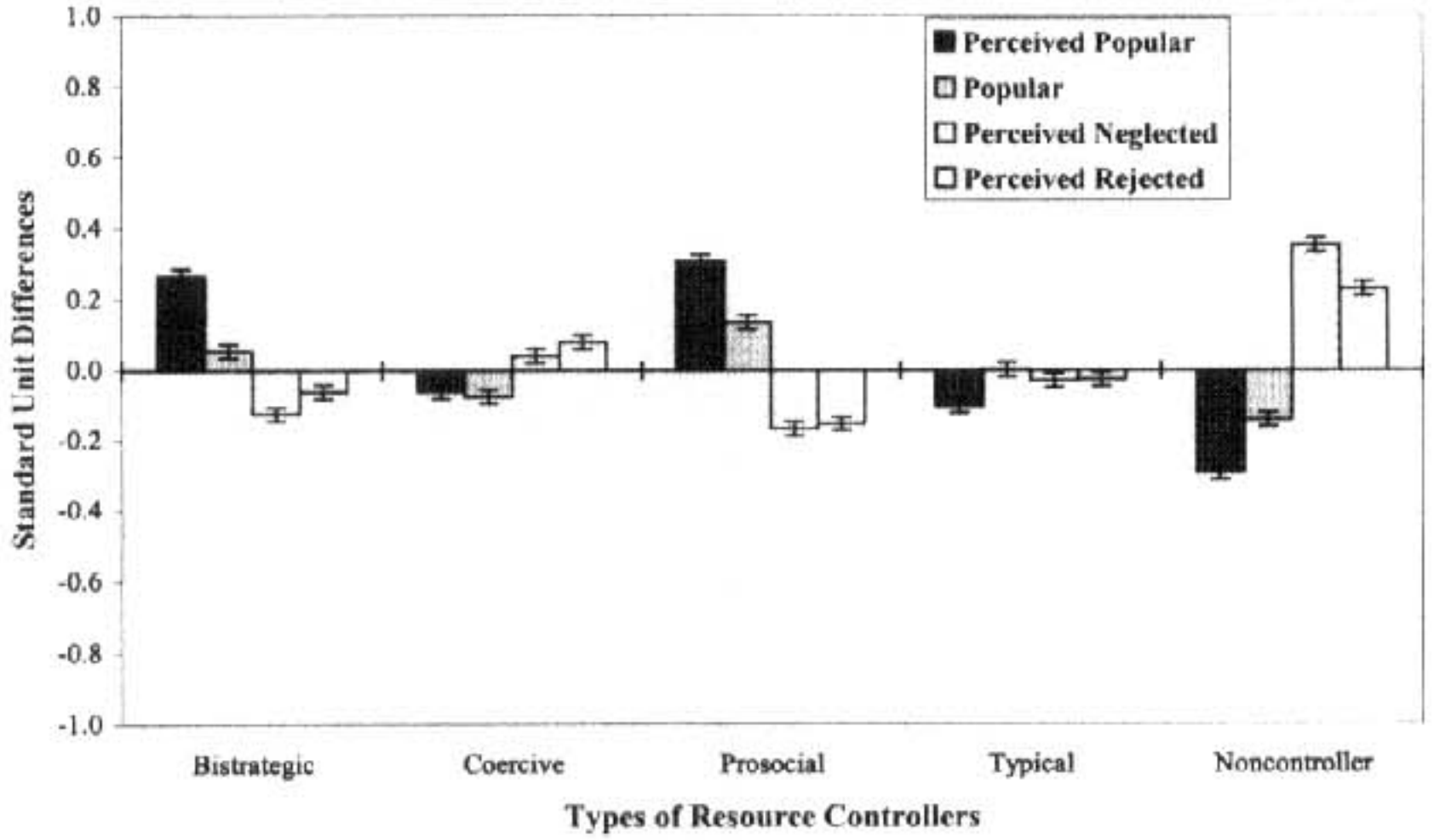

Figure 5. Peer nominations by resource control strategy type.

similar overall pattern as perceived popularity, with prosocial controllers being rated as liked the most and noncontrollers as receiving the fewest nominations.

Teacher Perspectives

A MANOVA with the teacher-rated variables as dependent variables (aggression, agreeableness, social acceptance) revealed a multivariate effect of subtype, $F(12, 1913) = 4.98, p < .0001$. The groups did not significantly differ on teacher-rated aggression, $F(4, 725) = 2.11, p = .07$, or teacher-rated agreeableness, $F(4, 725) = 2.18, p = .07$ but did significantly differ on teacher-rated social acceptance, $F(4, 725) = 12.12, p < .0001$. Teachers rated bistrategic and prosocial controllers to be the most accepted by their peers, and equally so, and coercive controllers as the least accepted, but not significantly less than noncontrollers and typicals. Although the groups did not significantly differ across teacher-rated aggression, teachers viewed bistrategic controllers, prosocial controllers, and typical children as being average on aggression (see Figure 6), viewed coercive controllers as the most aggressive, and noncontrollers the least. Noncontrollers were seen as the most agreeable, followed by the prosocial controllers, and coercive controllers as the least agreeable.

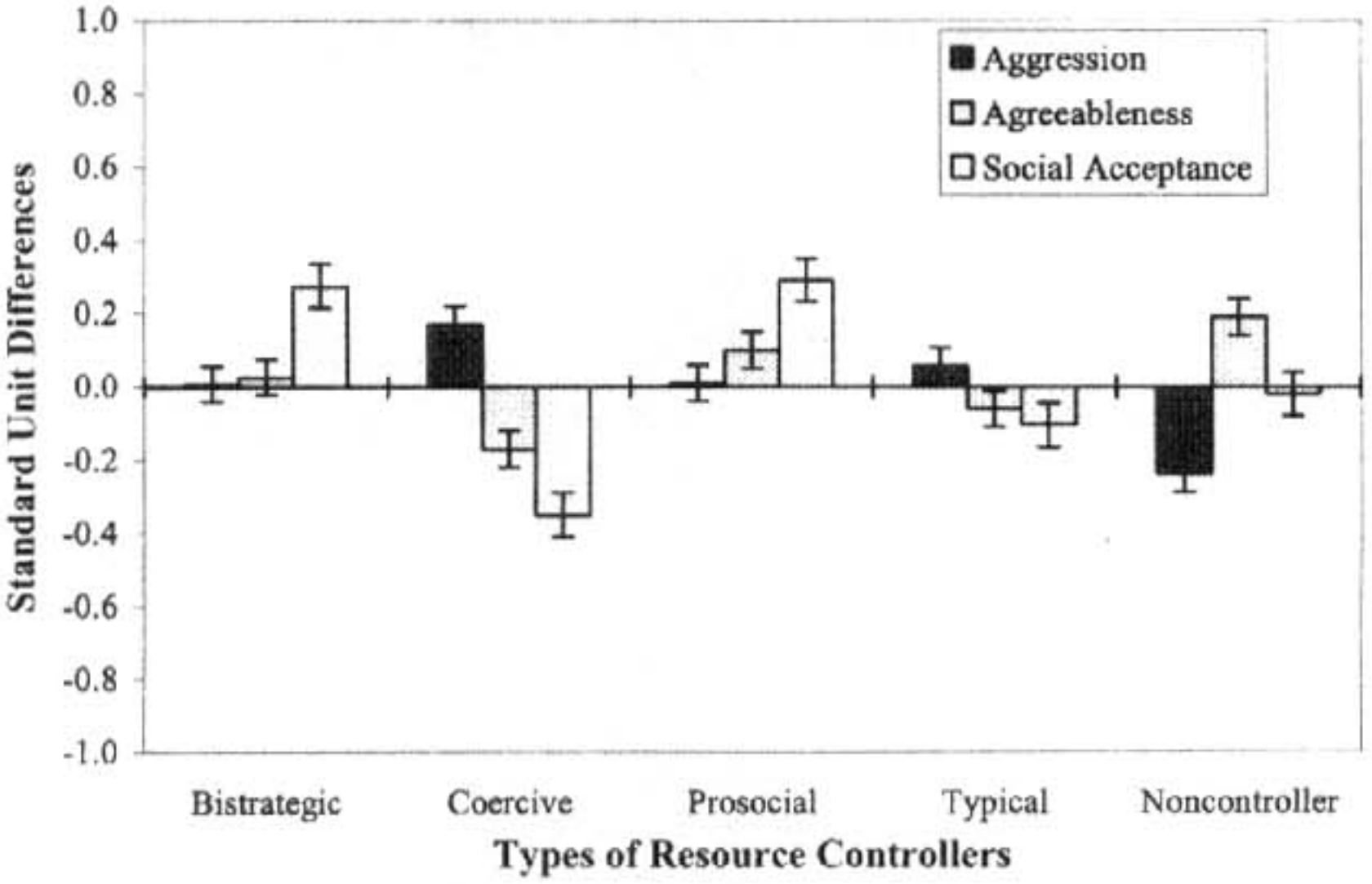

Figure 6. Teacher ratings by strategy type.

Discussion

The theoretical orientation adopted for this study suggests that competent behavior may be well served by modest aggression and manipulation. It was proposed that coercive behavior balanced with prosociality would be linked to instrumental effectiveness (e.g., resource control), and, in turn, to a positive self-image, well-being, and positive peer regard. Specifically, it was hypothesized that a group of children would emerge who are both coercive and prosocial and that these children would be overall well adapted and highly effective. Because these children resemble descriptions of effective leaders outlined by Niccolo Machiavelli, they have been referred to here as Machiavellian.

Much of this study reiterated findings that are already well known. The pattern of correlations presented in Table 3, for example, complements well-known findings that prosocial strategies are generally associated with positive characteristics (e.g., agreeableness, conscientiousness, social skills) while coercive behavior is associated with negative characteristics (e.g., aggression and hostility). At first glance, bivariate correlations suggest that all good things go together. The profiles of prosocial and coercive controllers provide further evidence for these patterns. Yet, coercive control is not related to conscientiousness, social

self-concept, positive affect, popularity, nor perceived rejection, even though common sense or a skills deficit perspective would suggest negative correlations should emerge. A child's score on these variables cannot be predicted based on knowing the degree to which he or she employs coercive strategies. Nor can one speak to a child's hostility or tendency to cheat by knowing his or her employment of prosocial strategies because these variables are uncorrelated as well.

A clearer and more complex pattern emerges when a typological approach is adopted. A sizeable subgroup of children who report themselves to be aggressive, and who are seen as such by their peers, enjoy positive characteristics and positive outcomes if their coercion is balanced by prosociality. That is, aggression and deception can be associated with positive outcomes. Is this evidence for the well-adapted Machiavellian?

> The first hour on the island I stepped into my strategy and thought, "I'm going to focus on how to establish an alliance with four people early on." I spend a lot of time thinking about who people are and why they interact the way they do, and I didn't want to just hurt people's feelings or do this and toss that one out. I wanted this to be planned and I wanted it to be based on what I needed to do to win the game.
>
> Richard Hatch, winner of *Survivor* I (2000)

Richard Hatch was referred to as Machiavellian in the post-*Survivor* press (e.g., James, 2000). Even though the term *Machiavellianism* evokes images of social pathology due to its previous applications (e.g., Christie & Geis, 1968), children who employ both prosocial and coercive control strategies are not viewed as pathological from the evolutionary perspective adopted here. Here Machiavellianism refers to an apparently effective approach that entails the (perhaps) careful balancing of "getting along" and "getting ahead." These children admit that they are aggressive (the most aggressive), claim to be hostile, and confess that they cheat in school (Figure 2). Peers also cast them in a similar light and report them to be the most aggressive children in the schoolyard (Figure 4). Yet they are also seen as effective, socially central, and are reasonably well liked (Figure 5). Coercive controllers also own up to these negative characteristics. Yet the coercive controllers lack key attributes that may distinguish the skilled from the unskilled (i.e., agreeableness, social skills, and conscientiousness; Figure 1). Due to the differential evaluation of these two groups by their peers, together with the fact that bistrategics rate themselves supreme on

effective resource control (Figure 3), it should come as no surprise that bistrategic children enjoy a higher than average social self-concept and positive affect.

Importantly, bistrategic controllers report being able to read their effect on their peers. This anticipated finding contradicts the "subordination hypothesis" that suggests that low ranking individuals should skillfully attend to social cues in order to accommodate to the will of superiors (LaFrance & Henley, 1993). The evolutionary perspective, in contrast, suggests that social skills allow one to ascend the hierarchy, in part because such skills pave the way for successful alliance formation (a strategy employed by Richard Hatch). Do the social skills of the bistrategics hide their aggressive behavior from their teachers? Bistrategic controllers claim they are the most aggressive, and peers see them as such. Yet, the teachers do not see them as any more aggressive than average. In contrast, the aggression of coercive controllers is more visible to the teachers (but the differences were not significant). Additionally, teachers rated bistrategic controllers as socially accepted as the prosocial controllers. It appears as though teachers may not be able to differentiate prosocial controllers and bistrategic controllers in this age group, perhaps because bistrategics are skilled at hiding their aggression from authority figures.

Bistrategic controllers confront our understanding of qualities often associated with aggressive behavior in children. The conscientiousness of these children suggests that they are neither hyperactive nor impulsive (Pope, Bierman, & Mumma, 1991). Their skill at reading social cues suggests that they are not deficient in perspective taking (Chandler, 1973; Piaget, 1965). They enjoy high standing in the social group and are seen as socially accepted by teachers and peers, which suggests they are not at particular risk for loneliness (Asher, Hymel, & Renshaw, 1984, but see Hawley et al., 2002). These nonrejected aggressive children contrast to rejected aggressive children who tend to be more disruptive and less attentive (Bierman et al., 1993).

Machiavellians are not model citizens nor are they the shining example of social competence. By their own admissions, they, at least on occasion, behave badly. In contrast, the prosocial controllers stand out as the most agreeable, socially skilled, and conscientious (Figure 1). In addition, prosocial controllers report that they generally follow society's rules (e.g., they rate themselves well below average on aggression, hostility, and cheating; Figure 2). Accordingly, they are rated as popular by their peers (Figure 5). It should thus come as no surprise that friendly, competent children with leadership skills are visible to

their peers and seen in a positive light by their teachers (Newcomb et al., 1993).

The Machiavellian profile highlights the other extreme as well; that is, the subordinate group of children who are rated by teachers as very low on aggression, high on agreeableness, and average on social acceptance. Based on these characteristics, it would seem that they would fare well with their peers. Yet, these subordinate children who are evidently reasonably attractive to teachers do not see themselves in this positive light, nor do their peers. Like coercive controllers, these children rate themselves as lower than average on agreeableness and conscientiousness, and very low on knowing how they make others feel (Figure 1). Additionally, like prosocial controllers, they rate themselves as very low on aggression, hostility, and cheating (Figure 2). Yet, they experience none of the positive outcomes that the resource-controlling children do (i.e., social self-concept, and positive affect; Figures 3, 4). Furthermore, subordinates are rated by their peers as the least popular, the least liked, the most neglected, and the most rejected (Figure 5). The profile of these children is consistent with predictions linking resource control, personality, and social centrality, and, according to this study, appear to be at the highest risk in the peer context of this age group (see also Hawley et al., 2002).

Machiavellianism as outlined here has some interesting communalities and divergences with the Machiavellianism of the personality literature. Machiavellianism has been described as unmitigated dominance; that is, dominance without nurturance (Fehr, Samsom, & Paulhus, 1992). As such, Machiavellians are described as aggressive, hostile, and see interpersonal relationships as a struggle for supremacy. The perspective adopted here, in contrast, views Machiavellians as pursuing dominance with characteristics consistent with nurturance. Both approaches agree on some basic characteristics of these individuals including hostility, endorsing unethical behavior, and desiring high control in the interpersonal domain. However, previous studies of bistrategic children (e.g., Hawley et al., 2002) suggest that while these children are extrinsically motivated to pursue relationships (e.g., for power, popularity), they are also equally intrinsically motivated to pursue these relationships (e.g., for pleasure and self-fulfillment). Whereas the personality literature emphasizes psychopathic tendencies (low emotionality, manipulation, etc.), the perspective adopted here allows that these children are fully capable of positive, reciprocal relationships with peers. As a side note, the perspective adopted here is more in the spirit of the philosophy of Niccolo Machiavelli, whose controversial

ideas may have been much misunderstood through the ages (see Berlin, 1980).

In some respects, Machiavellians may be similar to controversial children, whose moniker arises from receiving both liked most and liked least nominations from their peers (Coie & Dodge, 1983). Controversial children have not on their own been extensively studied, perhaps in part due to their relative infrequency and the instability of the classification (Cairns & Cairns, 1994). Nonetheless, they have been described as being sociable, having friendship skills, and yet aggressive (Newcomb et al., 1993). Also like bistrategics, the aggression of controversial children emerges from peer report, but may not be particularly visible to adults (e.g., teachers; Newcomb et al., 1993). Unlike controversial children, however, bistrategic children may not be particularly disruptive and they may be skilled at interacting with adults. Supplemental analyses (not reported here) revealed only modest overlap between the groups. The utility of comparisons between the resource control and sociometric classification schemes are limited in part because subordinates have no apparent counterpart in the sociometric scheme (i.e., the neglected sociometric status is not associated with risk of depression, etc.; Newcomb et al., 1993).

Machiavellians challenge our proclivity to see aggression and deception as maladaptive social deviance. Prevailing views on aggression highlight social and cognitive inadequacies of aggressive individuals (e.g., Crick & Dodge, 1994; Ellis, 1982; Lochman & Dodge, 1994; Olweus, 1993). Sutton and colleagues (Sutton, Smith, & Swettenham, 1999), however, have suggested that at least some bullies may possess superior social cognitive skills and that these skills underlie instrumental and social success. Perhaps the clever aggressor is not especially rare; indeed the popular press has recently reported how relationally aggressive girls can easily manipulate intervention programs to revictimize their targets and improve their own social status (Talbot, 2002). Such manipulation suggests that they are well aware of the sensitivities of their victims and the importance/vulnerability of their victims' social contacts.

Limitations of the Study

Using two self-reported dimensions to create types raises a number of important issues. First, much like the peer relations literature with its sociometric status classification (Coie & Dodge, 1983; Newcomb et al., 1993), the present classification scheme uses statistically derived cutoffs for group membership rather than meaningful psychological

criteria. Furthermore, the present study is organized around several self-reported constructs, the validity of which can be legitimately questioned. One may argue that response patterns reflect consistency in self-presentation. In addition to peer-reported corroboration of key constructs, however, this classification schema has been explored using structural equations modeling procedures that inherently address issues of validity (Hawley et al., 2002). Also, the guiding theoretical model is essentially causal and therefore directional. The data described here are cross-sectional and therefore cannot adequately address causation. Long term longitudinal studies are required to address these issues fully.

Lingering Questions

In addition to these methodological considerations, this study leaves many issues wholly unclarified. We do not know, for example, how prosociality and coercion are executed by the bistrategic controllers. Are these children prosocially controlling with allies and coercive with adversaries? Are they prosocial with high status others and coercive to noncontrollers? Are they prosocial until they are obstructed? Are Machiavellians victimizers (are targets "victimized"?), or do they exert their influence largely on those in their immediate social circle of children of like rank? These are all questions worthy of further exploration.

Additionally, known moderating contextual factors were not explored. Aggression can be viewed positively by peers depending on the norms of the group (e.g., Boivin, Dodge, & Coie, 1995) and whether it is for self-protection (Olweus, 1977). Furthermore, this study leaves the complex relationships among different forms and functions of aggression unaddressed (but see Little, Jones, Henrich, & Hawley, 2003; Little et al., this issue). Work within the last 15 years has suggested that the form of aggression adopted by females differs from that of males, with females favoring more indirect forms (e.g., Crick & Grotpeter, 1995; Lagerspetz, Björkqvist, & Peltonen, 1988). For this study, both relational and overt forms of aggression were aggregated. Nonetheless, coercive controllers were overrepresented by males and prosocial controllers by females. Females were also more likely to be typical and subordinate. However, the Machiavellian group had equal numbers of males and females as did the noncontrolling group (i.e., subordinates). Examining the subgroups further by disentangling form and function (à la Little et al., 2003) would certainly be a worthwhile endeavor.

Furthermore, curious findings emerged regarding grade differences by strategy type. More detailed analyses were precluded by space constraints. At this point it is unclear why there is an unequal distribution for the 10th graders for the typical and bistrategic groups. Perhaps this cell reflects an age where peaks in prosocial responding (Eisenberg & Fabes, 1998) collide with the social acceptability of aggression in some peer groups (e.g., Coie, Terry, Zakriski, & Lochman, 1995).

Finally, the issue of self-presentation (vis-à-vis self-report) may be of special concern for this study in light of research showing that aggressive children are more likely to report idealized self-perceptions than nonaggressive children (e.g., aggressive children tend to overrate themselves in terms of competence and acceptance; Hughes, Cavell, & Grossman, 1997). In the present study, however, only the bistrategics viewed themselves in a positive light (e.g., in terms of self-concept, positive affect, etc.) while the *other* group of aggressive children (i.e., coercive controllers) did not. Furthermore, the bistrategic children did not consistently describe idealized selves; they confessed to being hostile, aggressive, and willing to cheat. While Hughes et al. suggest that "aggressive children's positive self-perceptions are neither credible nor serviceable" (p. 88) because these perceptions are not warranted and put the child at additional risk, the Machiavellian profile along with its reception in the peer world suggest that the positive self-perceptions of these youths may be justified.

Conclusions

Aggressive children are not a homogeneous group (e.g., Bierman et al., 1993; Hawley et al., 2002; Little et al., 2003; Rodkin et al., 2000). Aggressive children differ in terms of the way they use aggressive behaviors (e.g., in terms of function), in the manifestations of aggressive behavior (i.e., form), in the degree to which they attract positive attention and/or are shunned, and in the other social skills they possess. This study is yet another perspective on the puzzling relationships among aggression, indices of social competence, and peer regard.

Evolutionary theory provides a useful lens through which to interpret human behavior. While evolutionary theory itself is not tested, it gives rise to specific subtheories that in turn give rise to testable predictions (Buss, 1996). Here, resource control theory (Hawley, 1999a; 1999b) suggests that competition unavoidably arises in social groups, and that personal characteristics are associated with the degree to which they are pursued, the success that one has, and the strategies that

one employs. Accordingly, it provides yet another orientation from which we can view prosociality and coercion.

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