

Aggression and Adaptation
The Bright Side to Bad Behavior

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improving the dispositions of peer ecologies, assertiveness training to ameliorate both aggression and passivity may be, these authors suggest, the highest road. Farmer et al. and Rodkin and Wilson draw out the implications of Cairns' original work by considering preventative interventions that concentrate on the social networks of aggressive children as a leverage point for behavioral change.

As the reader, you will doubtless find that a number of authors critique alternate (and predominant) approaches to aggression in no uncertain terms. Yet, the theoretical and empirical views expressed in the volume are morally agnostic regarding the "goodness" or "badness" of aggression. Instead, they offer thoughtful, reasoned reflections on aggression as one of the fundamental features of the human condition and entertain the perhaps seemingly counterintuitive notion that aggression and adaptation (ultimately and proximally) may not be an oxymoron after all.

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—*Patricia H. Hawley*

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SOCIAL DOMINANCE IN CHILDHOOD AND ADOLESCENCE: WHY SOCIAL COMPETENCE AND AGGRESSION MAY GO HAND IN HAND

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Evolutionary approaches to child behavior are rare breeds indeed. Certainly, the work of child ethologists (e.g., Bowlby, 1969) is often cited to exemplify the utility of applying (Darwinian) evolution to human behavior.¹ Theory development, however, was not a goal of old-school ethology (with attachment theory being a notable exception) because, according to its methodological philosophy (a legacy of Tinbergen, 1963), detailed observations and extensive behavioral catalogs (e.g., ethograms) take precedence over theory (Blurton Jones, 1972). Moreover, ethologists (like behaviorists), found intrinsic characteristics of individuals (e.g., intelligence, personality, and motivation) to be of dubious value. It thus comes as no surprise that ethology—although it is credited for bringing rigorous naturalistic observation to psychology—is better represented in historical overview sections of college texts than in later substantive chapters.

Nonetheless, ethological work has made sizable contributions to child development, especially on the topics of play, sex segregation,

¹As a significant signal of the changing tide, however, see Bjorklund & Pellegrini, 2002.

and social dominance. In light of these contributions, it is surprising that the early work on social dominance in children failed to attract sustained attention in child psychology. One possible reason concerns methodology. Although social dominance has long been recognized by animal behaviorists to be an aspect of a relationship (Bernstein, 1981; Maslow, 1936; Scott, 1956), innovations in social psychology designed to explicitly explore relationship dynamics (e.g., the social relations model; Kenny & LaVoie, 1984) failed to cross disciplinary lines (but see Hawley & Little, 1999). Thus, dominance hierarchies involved the examination of interpersonal exchange only in a limited sense, and as such fell out of step with modern approaches (Vaughn, 1999). In addition, characteristics and developmental outcomes of the child participants (beyond gender, age, and size) were ignored. Ethologists never asked, "who are the players?" or "how do winning and losing impact the development of individuals?"

Furthermore, zoologists and descendent ethologists aligned social dominance not only with resource attainment and defense (material, social, territorial), but also with "struggles," "contests," and "agonism." Consequently, dominance explicitly involved elements of aggressiveness, threat, or fear (e.g., Brown & Hunsperger, 1963; Harlow & Yudin, 1933; Hinde, 1966; McGrew, 1972; Strayer & Strayer, 1976). Interpreting Darwin's mechanism for evolution (i.e., natural selection) in strictly overt competitive and therefore aggressive terms effectively closes out a good deal of human behavior that similarly arose out of inherently competitive forces; namely, reciprocal altruism (Trivers, 1971) and cooperation (Charlesworth, 1996; Kropotkin, 1902). Personal goals can be achieved not only directly and aggressively, but also indirectly with the aid of others.

In this chapter, I present an evolutionary metatheoretical perspective as an organizational framework for interpreting children's social and resource-directed behavior. In step with theoretical advances of the 20th century, I discuss interpersonal competition in terms of aggressive as well as cooperative strategies in the context of Resource Control Theory (Hawley, 1999). Modern evolutionary approaches challenge us to consider and clearly differentiate form and function of behavior; interpersonal transactions that appear on the surface (i.e., form) to be enacted for the good of another (e.g., reciprocity) may be effectively self-serving in function. Doing so regarding children's social behavior requires the turning of the logic we typically apply to child development slightly on its ear. In the present approach to social dominance I emphasize the importance of competition as a central organizing feature of children's (and adults') social organization, provide justification for (and evidence to suggest) that competitive males and females are

more alike than different, and offer a theoretical rationale for why many aggressive youth not only are not rejected, but are socially central and liked. I also offer reasons to believe intervention programs would benefit by being informed by what may be a counterintuitive line of reasoning.

QUESTIONS ON HUMAN NATURE

In contrast to the turn of last century, the present views of human nature held by those currently involved in child development and education are largely dominated by the philosophies of Locke and perhaps more predominantly, Rousseau. Locke, one of the fathers of the empiricist movement (e.g., Locke: *An Essay Concerning Human Understanding*, 1690), denied the possibility of "innate ideas" and maintained that the identity of man and all knowledge is formed by experience. Locke's view on human nature meshed well with his political philosophy that is credited as the foundation of liberal democracy (Pinker, 2002) as well as the rise of behaviorism. From this view, negative behavior patterns are in large part consequent to inadvertent reinforcement or inappropriate modeling. Indeed, some of the most influential work in psychology on aggression stemmed from this philosophical bent (e.g., Bandura & Walters, 1959; Bandura, Ross, & Ross, 1961), and ultimately gave rise to effective interventions based on schedules of punishment and rewards and social learning principles (Bandura, 1969).

Contrasting to Locke's view though ultimately leading to similar conclusions, Rousseau's doctrine of the noble savage (*Émile*, 1762/1955) maintained that uncivilized man is peaceful, egalitarian, and in possession of inborn moral instincts. The darker side of humanity (e.g., competition, greed, violence) stemmed from the corrupting influence of modern civilization.² Rousseau was of course reacting to the treatise of Hobbes, who took an alternate extreme view that perpetual struggle results from man's natural propensity to behave out of self-interest and that societal controls were necessary to enforce a collective will (Hobbes, 1651/1885). Although Hobbes' philosophy no doubt was well on the mind of Freud (1930/1961), as well as many other turn-of-the-century natural philosophers favoring Darwin's work, developmentalists throughout the century tended to focus their attention on bettering

²These myths of the noble savage were maintained in anthropological circles through much of the 20th century, yet soundly debunked in recent decades. Even "peace-loving" chimpanzees (Pan troglodytes) were found to form male-aggressive coalitional bonds giving rise to raids and "panicide" (Wrangham & Peterson, 1996).

potentially corrupting environments so that children could enjoy the enhanced intelligence, self-control, and morality they so richly deserve (see Smith, this volume for an extended discussion).

Contemporary Views of Social Competence

Predominant modern views of child behavior and development largely assume, like Rousseau, that with proper care (e.g., minimal corruption), children will grow to be well behaved, other-oriented, and non-aggressive. Antisocial tendencies (broadly defined) are held to arise from unsuitable models, suboptimal parenting, misguided peers, or inappropriate media influences.

Moreover, youth aggression clearly imposes tremendous cost to society. Not only are costs borne by victims, but aggression and antisocial behavior are associated with maladjustment and psychopathology in the perpetrator as well. Aggressive youth are at higher risk for peer rejection (Coie & Dodge, 1998; Coie, Dodge, & Kupersmidt, 1990), risk-taking behavior (Brook & Newcomb, 1995), low educational achievement (Brook & Newcomb, 1995), and later unemployment (Kokko & Pulkkinen, 2000). These well-supported relationships (see Coie & Dodge, 1998, for review) have led to the observation, "insofar as aggression is positively linked to a measure of incompetence, it is seen as an index of incompetence itself" (Bukowski, 2003; p. 391).

Aggression as incompetence suits well prevailing models (e.g., in the developmental and risk literatures) that implicitly if not explicitly assume that positive and negative behaviors are at opposite ends of some unidimensional continuum; that is, there is a strong prevailing belief (in the absence of consistent data) that they will be strongly negatively correlated. Even the terms "prosocial" and "antisocial" (a la Wispe, 1972) connote diametrical opposition. Adding to this impression of diametric division, prosociality and antisociality have long resided in distinct literatures (but see Krueger, Hicks, & McGue, 2001). Because of this disconnect, the theoretical and empirical relationship between these two broad categories invites rigorous examination.

At some level, however, this underlying message of aggression as maladaptation is confronted by common observation; namely, manipulation, deception, moderate hostility, and aggressive self-expression fit well our commonly held stereotypes of highly ambitious, successful, and powerful people (see also Christie, 1970; Feist, 1993; Hogan, Raskin, & Fazzini, 1990). Consistent with this casual observation, recent work has challenged expected relations between aggression and negative outcomes: Popular boys may be of the non-aggressive as well as aggressive varieties (Rodkin, Farmer, Pearl, & van Aker, 2000), aggressive children are no less

socially central than non-aggressive children (Bagwell, Coie, Terry, & Lochman, 2000), and aggressive behavior has been related to status improvement (Sandstrom, 1999; see also Luthar & McMahon, 1996).

This body of work suggests that human social competence is not so uncomplicated that it may be described by an intuitive set of linear relationships. Morally laden approaches (e.g., victim-centered perspectives) may align competence solely with positive behaviors and traits that are assumed to support and attract others ("prosocial"), rather than those behaviors or traits assumed to undermine and repel others ("antisocial"). In contrast, broader approaches that define competence more in terms of social outcomes and social success pave the way for more complex possibilities and intriguing developmental questions; namely, what predicts social success in humans and do these predictors vary over the lifespan? And, importantly, what is the role of aggression? Inherent to many of these latter viewpoints is the notion that the competent self successfully pursues individual goals in the presence of others, presumably without excessively thwarting the goal attainment of other group members (e.g., Bost et al., 1998; Rubin & Rose-Krasnor, 1992). Multiple paths to social success are thus allowed, including those paths that may be characterized by aggressive self-expression.

Indeed the ultimate human quandary of balancing the needs of the self against those of the other preoccupied many founding fathers and mothers of psychology (e.g., Freud, McDougall, James, Maslow, Horney). Personality psychologist Robert Hogan (e.g., Hogan, 1982) reasoned that the most important differences across individuals involve affiliation and status striving; or, in his words, "getting along" (being liked, accepted) and "getting ahead" (effectiveness, power). Social competence may entail balancing the two (Hawley, 2002); that is, a type of social competence may entail competing successfully in ways that foster social acceptance. After following a novel line of inquiry, Bukowski (2003) recently pointed out that the words "competence" and "compete" share a common linguistic lineage that reveals that competence originally conveyed successful competition in the presence of others. Successful competition in the presence of others is the hallmark of social dominance, the topic to which we turn next.

ASCENDANCE AND SOCIAL DOMINANCE IN THE EARLY 20TH CENTURY

Indeed broader approaches to competence were embraced in the first decades of the 20th century in various independently developing disciplines. Social and personality psychologists addressed ascendance and submission in terms of "instincts" (McDougall, 1908) and what Allport

referred to as a "prominent determining tendency in behavior" (Allport, 1928-1929; p. 119). Even early child developmentalists pursued ascendance in preschoolers in part because "the roles assumed by the children in the play groups were soon evident and distinctly apparent" (Jack 1934; p. 10).³ Even though these approaches did not focus on aggression *per se*, forcefulness, punitiveness, self-interest, persistent pursuit of one's own goals—even if these goals conflicted with those of others—were central identifying features of the ascendant individual (Allport, 1928-1929; Jack, 1934).

Important for this developing argument, submissiveness, the behavioral opposite of ascendancy (i.e., yielding, suggestible, conciliatory, passive; Allport & Allport, 1921), originally heralded a certain level of social incompetence. Submissive individuals were observed to be guided more by the desires and behavior of others and were accordingly seen as being at risk for "lack of self-confidence" (e.g., evident by children's appeals to adults, fear of companions, etc.; Jack, 1934, p. 40; see also Bühler, 1927). Jack additionally observed a previously submissive child to behave more like an ascendant child after his or her experience (and therefore self-confidence) in the experimental play situation was enhanced. In the end, she concluded that ascendant play was a function of the individual-context interface and that ascendant behavior could be learned.

At the same time, though apparently independently (i.e., one finds very few cross-citations), animal behaviorists were zealously setting their sights on social dominance (i.e., ascendancy). The concept of the linear social dominance hierarchy is most often credited to Schjelderup-Ebbe (1922) for his early work on the peck-order (literally) of domestic fowl. Shortly thereafter, Robert Yerkes energized primatologists by proclaiming that, "dominance and subordination are evident in every group of primates. Apparently there is no such thing as equality of status and opportunity ... each individual secures in its social group the degree of opportunity for control and self expression to which its characteristics and stage of development entitle it" (Yerkes, 1925; p. 155).

Social dominance was (and continues to be) most typically assessed by the number and direction of physical attacks and/or threats directed at conspecifics or peers. In other words, "dominance is inferred whenever one individual is able to chastise another with impunity" (Klopfer, 1974; p. 154). Because the outcome of such contests was clearly related to priority access to resources, priority access was deemed the *raison*

d'être of social dominance. The work in the ensuing decades addressed the complexity of such hierarchies and how they were related to much more than material resources (e.g., sexual behavior, physical health, grooming patterns, social preference, etc.; see Hawley, 1999 for review; Maslow, 1936; Scott, 1956; Zuckerman, 1932) and as such, hierarchies were seen as a central organizing feature of group living primates. From this work, it is clear that dominant individuals (in humans and animals) play highly central and visible roles in groups and consequently are targets of others' gazes, attention, and imitation. I refer to this phenomenon here and elsewhere as the social centrality hypothesis (Hawley, 1999; see also Chance, 1976).

Although early-century child developmentalists worried about how to alter ascendant behavior (e.g., enhance it; Jack, 1934; Page, 1936), or reduce the aggression associated with it (e.g., Woolley, 1925), ethological approaches designed for studying animal behavior (and only later human behavior) were characteristically less judgmental and more objective in variable choice and interpretation (a hallmark of ethology; Hinde, 1982; Tinbergen, 1963). Furthermore, ethologists were far less reticent than early child developmentalists about linking dominance squarely with aggression: In fact, when ethology seized social dominance and claimed it as its own, aggression was clearly key and central (e.g., struggles, fights, agonism). Yet at the same time, the psychologists would have agreed with the ethologists that characteristics associated with submissiveness (Allport, 1928-1929) or subordination (Maslow, 1936) would be associated with poor psychological health. That is, socially dominant apes or monkeys, or ascendant humans might be annoying or frightening, but relative to lower ranking others, aggressive dominants fare quite well. In fact, it was from his early work on primate social dominance that Maslow developed his model of self-esteem and, ultimately, self-actualization.

The Work of Abraham Maslow

Maslow is primarily remembered for his hierarchy of needs (1943) and self-actualization (1950). Yet he started out as a student of Harry Harlow, the legendary primatologist who made the study of "mother-infant love" a respectable scientific endeavor (e.g., Harlow, 1958). During those early years under Harlow's tutelage, Maslow made some important contributions to the work on social dominance.

Social psychologists contemporary to Maslow regarded ascendancy-submission either as dual instincts (McDougall, 1908) or independent "enduring dispositions" (e.g., Allport, 1928-1929). Maslow broke away from similar language used by his mentor (e.g., Harlow & Yudin, 1933) and

³In light of Jack's observation that ascendant behavior of children was immediately evident even to the casual observer, it seems incongruous that influential ethologist, Blurton Jones, would suggest that the concept of dominance would not be useful for understanding the social organization of preschool children (Blurton Jones, 1967).

argued for the terms dominance and subordination to (a) characterize the hierarchical nature of a relationship rather than enduring attitudinal aspects of the individual, (b) explicitly make the case for a universal dominance drive, that is (c) expressed more or less successfully depending on the social context. As a consequence, he made subordination less of a personal proclivity, but rather an unfortunate outcome of being in the presence of a dominant other. As such, Maslow put dominance and subordination at opposite ends of a "common impulse" (Maslow, 1936).

In Maslow's observations of captive primates, the dominant animal first and foremost had priority access to resources (e.g., food and females; see also Zuckerman, 1932). Furthermore, he observed the dominant animal to be sexually assertive, by far the most aggressive (both proactively and reactively), more likely to initiate play, and to have freedom of movement. Interestingly, he found these characteristics to hold whether the dominant was male or female (see also Hawley, Little, & Card, 2005). Subordination, in contrast, was evidenced by lack of access to food, passivity, withdrawal, and the absence of aggression (Maslow & Flanzbaum, 1936). Maslow further viewed the dominant animal as "one whose behavior patterns ... are carried out without deference to the behavior patterns of his associates" (e.g., autonomy; Deci & Ryan, 1985). In contrast, subordinates were "... limited, or inhibited by the behavior patterns of its more dominant associates" (Maslow, 1936; p. 263). Furthermore, this dominant behavior was highly dependent on social context in that "subordinates" would repeatedly behave like dominants when the opportunity arose. Thus we can see already in Maslow's work, like Jacks, the understanding of dominance clearly being associated with individual-level characteristics, but also inherently highly context-dependent.

Maslow and Flanzbaum (1936) observed that dominance was less due to size and age, but rather an "attitude of aggression or confidence" (p. 308). In part, consequent to dominance status (a relationship) and dominance behavior (e.g., bursts of temper, hostility), dominant individuals were more likely to enjoy "dominance feeling" (or "self esteem"; 1942) which he viewed as the evaluation of the self in terms of feelings of capability or superiority. In terms of Maslow's hierarchy of needs, esteem needs (desire for strength, prestige, and autonomy) follow physiological, safety, and love needs (for most, but not all) and are followed by the need for self-actualization (striving to achieve one's unique potential). The thwarting of need fulfillment at any level, Maslow observed, is met with an emergency response and ultimately significant emergence of the higher need. Thus, in the case of thwarted self-esteem/dominance needs, self-actualization tends not to be pursued.

I outline Maslow not because I defer to him as the final authority on social dominance; he was ultimately guided by his desire to understand human motivation and psychological outcomes and was limited by the methods of his time. On the other hand, his view of human motivation and social organization had deep biological roots. Rather than resorting to simplistic genetically deterministic arguments and evolutionary implausibilities (e.g., postulating that subordination is an adaptation in and of itself), he understood that human fulfillment, happiness, and autonomy were at least in part a function of hierarchical social organization, and that chronic subordination would have clear negative psychological impact.

The psychological impact of a prolonged history of competitive losses should be borne in mind in the discussion below of "noncontrollers," a group of children that arise from a resource control theoretic perspective. Before introducing Resource Control Theory, however, the evolution of cooperation must be discussed because it bears directly on a proposed broad class of behavioral tactic; namely, prosocial strategies of resource control.

THE EVOLUTION OF COOPERATION

Historically, interpreters of natural selection have aligned it with overt aggressive competition (within and between species); that is, "the struggle for existence" (Darwin, 1859/1884, p. 48), and "... Creation's final law—'Tho' Nature, red in tooth and claw ...'" (Tennyson, 1892, p. 256). This alignment is especially clear in the social dominance literature that delights in the splendid morphological characteristics of some dominant males where the forces of sexual selection (male-male competition for females; Darwin, 1871; Trivers, 1972) have resulted in a sexual dimorphism for size, strength, and morphological weaponry (e.g., horns, antlers, tusks, canine teeth). Such an interpretative stance has made the evolution of altruism one of the greatest quandaries in theoretical biology (but see Hamilton, 1964; Trivers, 1971).

Early minority views had far less impact. For example, Kropotkin (1902) contended that under some conditions, cooperation would be a naturally selected alternative to aggressive competition, especially under harsh conditions and low population density (such as those of Siberian Russia; Kropotkin, 1902). That is, the "struggle for existence" not only meant intra- and intergroup competition, but organism against environment. This latter struggle could best be won, Kropotkin wrote, via mutual aid. Thomas Huxley's gladiatorial view ("... the strongest, the swiftest, and the cunningest live to fight another day"; Huxley, 1888,

p. 200) carried far more weight with European naturalists and early popular writings solidified it in the public's imagination (e.g., Lorenz, 1967).

It was not until Robert Trivers's seminal work on reciprocal altruism (1971) that individual-level selection (cf. group selection; e.g., Lorenz, 1967; Wynne-Edwards, 1962) was united with a viable theory of "altruism" (see also Hamilton, 1964). Here, "altruistic" behavior, according to Trivers, is not particularly self-sacrificing when one considers delayed benefits. That is, within the context of group living, social individuals perform altruistic acts with the implicit expectation that favors will be returned in the long run; hence the moniker, reciprocal altruism. Many of our social emotional responses, according to Trivers, probably evolved to navigate the complex economics of such exchanges. Mistrust, for example, alerts us to a potential partner that is unlikely to reciprocate. Thus, we are disinclined toward those we do not trust to reciprocate, and so on. Similar themes can be found in the Social Exchange Theories of Social Psychology that also postulate that humans are sensitive to inequities and balances in exchange processes in our social relationships (e.g., Walster, Walster, & Bersheid, 1978; see also de Waal, 1982). Both theoretical orientations would predict, for example, that the appeal of a potential social partner is in part a function of what that partner can bring to the relationship as a commodity for exchange (e.g., status, information, or wealth). Even though social exchange theories have not as a rule adopted an evolutionary metatheoretical orientation, I nonetheless draw on social exchange perspectives in the following section when I discuss why socially dominant preschoolers and adolescents win positive peer regard (one of the ultimate key points of this chapter).

Theories operating under an evolutionary metatheoretical umbrella typically recognize that the structure of a behavior may not clearly reveal function. Developmentalists, in contrast, have not traditionally been of the opinion that reciprocity, cooperation, and indeed prosociality in general, are essentially selfish (in terms of individuals' reproductive success).⁴ Here, cooperation, reciprocity, and prosociality in general are seen to be other-oriented and to naturally unfold in the absence of developmental insult (a Rousseau-inspired view). Exceptions are those rare theories that recognize that prosocial behavior or cooperation can be employed to achieve one's own goals rather than a way to help others achieve theirs. Bowlby (1969), for example, recognized that successful infants must elicit care from their caregivers, and they do this by smiling,

⁴Group life/communality is a self-serving strategy in that those who chose to live outside the group at best had a very hard time of it, and at worst were doomed to starve or be eaten. This is not to say group life is without cost. One may be at increased risk for pathogens, intragroup aggression, and competition.

gazing, and cooing in addition to the more urgent crying. Smiling has proven itself over human evolutionary history to be a good way to induce others to attend to you (and give you valued resources; Frederickson, 1998). This noncontroversial observation is not limited to infancy: Preschoolers, adolescents, and indeed adults more successfully enter reciprocal (resource-yielding) relationships (e.g., friendships) by being attractive to others via warmth, sociability, and willingness and desire to reciprocate. It should thus come as no surprise that these characteristics are typically viewed as indicators of social competence.

Dualism in Human Motivation and Behavior. This dualism—that competitive forces give rise to both antagonistic and other oriented behavioral strategies—underlies the present theoretical perspective. Resource Control Theory (Hawley, 1999). Specifically, the present theoretical orientation assumes that aggression and prosociality are functionally similar, yet phenomenologically distinct. A cry and a coo evolved to similar ends (they serve the same function, i.e., decrease distance between infant and caregiver), even though they have very different structures (negative vs. positive affect, which, like prosocial and coercive strategies discussed in the following section, are structurally independent; see also Charlesworth, 1996).

RESOURCE CONTROL THEORY

Resource control theory (RCT) was born out of an attempt to reconcile the social dominance hierarchies of nonaggressive female Asian elephants (Hawley, 1994) with children's social development within hierarchically organized peer groups. Unlike prevailing animal-based models of social dominance, RCT shifts the focus from the structure of behavior (i.e., form; "struggles," agonism, aggression), to the function of behavior (resource control; Hawley, 1999). Shifting the focus to function gives rise to questions about how resource control can be achieved. Although resource control is a common feature across species and within a species across the lifespan, how that control is achieved and/or maintained (i.e., strategies) may vary markedly across species, undergo significant transformation across developmental time (as Bowlby himself noted), and be sensitive to environmental cues.

The notion of resource has been given considerable attention in behavioral ecology (another legacy of Tinbergen). For our purposes, we consider resources broadly to be material, social, and informational (Hawley, 2006a). Organisms require material resources for growth (e.g., food), survival (e.g., nesting sites), and cognitive and behavioral

development (e.g., environmental stimulants; White, 1959). Social resources serve as alliance partners (Pusey & Packer, 1997), mates (Darwin, 1871), and models for social learning (Giraldeau, 1997). Information facilitates the acquisitions of both social and material resources (Giraldeau, 1997).

Prosocial and Coercive Strategies of Resource Control

Some resource control strategies are rather peculiar (e.g., the blue-headed wrasse can morph from a female to a male and, as a result, enjoy much-improved reproductive outcomes) and thus fall outside of the present discussion. However, in light of the above sketch of agonism-based social dominance, but also considering cooperative behavior to be a viable strategy, the following line of reasoning is focused predominantly on two broad resource control strategies: coercive and prosocial.

Prosocial strategies and coercive strategies are related insofar as they are proposed to have a common function; namely, resource control. This implies that the two strategies may be positively correlated in contrast to negatively correlated as would be assumed by traditional developmental approaches that align prosociality with other-orientedness and antisociality with self-orientedness (i.e., that prosocial and antisocial behavior should be negatively correlated). Because all humans potentially have access to both strategy types, their relative employment is a source of important individual differences.

Within the context of my research program, we have assessed prosocial and coercive strategies observationally (Hawley, 2002), by way of self-report (Hawley, 2003a; Hawley, Little, & Pasupathi, 2002), peer nomination (Hawley, Card & Little, in press), and teacher report (Hawley, 2003b). Though the measurement tools have been evolving, prosocial strategies are generally indicated by goal attainment via socially acceptable behavior. Observationally, this means a toy is traded or politely requested, or unsolicited help is offered (the play material is thus effectively commandeered; Hawley, 2002). Questionnaire or rater items assess reciprocity, being nice, or promising friendship (Hawley, 2003b). Coercive strategies are indicated by taking, threatening, or bullying. These studies thus far have been based on children as young as 3 years through adolescence. Overall, we find that prosocial and coercive strategies vary from being mildly to strongly positively correlated, depending on how they were measured (the strongest relationship by way of observation of preschoolers was $r = .67$; Hawley, 2002). We have found no negative correlations between prosocial and coercive strategies. This state of affairs suggests common function (though not necessarily common origin; e.g., equifinality).

Variable Centered Approaches

Variable centered approaches, or those focusing on linear relationships among variables, generally find that "good things go together" to some degree. We have replicated these correlations as well (e.g., Hawley, 2003a, 2003b). For example, prosocial strategies are positively correlated with positive personality traits (e.g., agreeableness), social skills (e.g., attention to social cues), affirming self-evaluation (e.g., social self-concept), and positive peer regard (e.g., "liked most" nominations). Conversely, we would expect to find—and have found—coercive strategies to be associated with more negative characteristics such as hostility, aggression, and self-serving motives (e.g., extrinsic motives for pursuing relationships; power, popularity). These findings replicate others that are common in the literature thus are not considered a significant contribution of the present approach. We do not always find, however, significant negative relationships between prosocial strategies and less desirable traits such as hostility, cheating, and aggression (e.g., Hawley, 2003a). Nor were coercive strategies negatively related to positive traits such as agreeableness, conscientiousness, and social skill. This simply means that one cannot predict negative traits by the level of prosocial strategies employed by the individual, nor could one predict positive traits by the use of coercive strategies. To some, these patterns seem counterintuitive. We find that they are significantly illuminated and explained by adopting a person-centered approach derived from resource control theory.

Resource Control Subtypes: A Person-Centered Approach

Person-centered approaches are by no means unfamiliar to developmentalists (e.g., Ainsworth, 1967; Ainsworth, Blehar, Waters, & Wall, 1978). We have found a person-centered approach to social dominance to be highly and uniquely informative. Specifically, individuals can employ one or the other strategy, neither strategy, or both. We have defined being "high" on prosocial and coercive strategy employment as scoring in the top 33% of the respective distributions, and scoring "low" on said distributions to be in the lower 33%.

Some individuals clearly favor prosocial strategies over coercive strategies. In terms of measurement, they are evident behaviorally in a laboratory set-up, individuals report their endorsement of them, or others (teachers, peers, friends) describe participants in these terms. One earns the moniker "prosocial controller" when one scores in the upper 33rd percentile of prosocial strategies of resource control observed in agemates and the lower 66th percentile on coercive strategies. Others

employ coercive strategies over prosocial: They become "coercive controllers" when they score in the upper 33rd percentile on coercive control and the lower 66th percentile on prosocial control. "Bistrategic controllers" (Machiavellians; Hawley, 2001, 2003a, 2006b), employ both strategies in the upper 33rd percentile, "noncontrollers" score in the lower 33rd percentile of both strategies. "Typical controllers," the largest group, comprise the remainder. Although the cut-offs for the group membership are arbitrary, results from the typology have proven to be well in line with what has been predicted from this evolutionary metatheoretical perspective.

Prosocial controllers, for example, are highly skilled, agreeable, and socially appealing. They report intrinsic motivations for pursuing friendships with others (e.g., joy, personal fulfillment; Hawley et al., 2002), and appear to enjoy friendships that are high in intimacy and low in conflict (Hawley, Card, et al., in press). They are above average on resource control that confers them (by definition) higher than average social dominance status.

Coercive controllers, although also higher than average on resource control, are aggressive, hostile, and unskilled relative to other youths (Hawley, 2003b). They do not win positive attention in preschool nor in adolescence. Their motivations for friendship are extrinsic (power and popularity) and their friendships are marked by high conflict and low intimacy. Their behavior, personalities, and social reception suggest that they are comparable to unskilled, socially rejected aggressors. Bistrategic controllers have characteristics in common with both prosocial and coercive controllers. Like their coercively controlling counterparts, bistrategic preadolescents and adolescents cheat, have a very high desire for recognition of their accomplishments, and score among the highest on traditional measure of aggression (i.e., overt and relational; Hawley, 2003a). At the same time, like prosocial controllers, they attract peers, impress teachers, are socially skilled, open to experience, extroverted, and morally astute (Hawley, 2003a, 2003b). They are even rated as among the most physically attractive by teachers who know them (Hawley, Napientek, Mize, & McNamara, 2005). They are even appear to be extremely effective resource controllers in their own opinion and in the opinion of their peers (i.e., socially dominant), but they can also effectively achieve and maintain high-status reputations (e.g., Cilllessen & Rose, 2005). Because they reign supreme in terms of resource control, they are considered highly socially dominant from this view.

Most developmental theories predict that such high levels of "antisocial" behavior would be associated with social skills deficits and, consequently, peer rejection (see Coie & Dodge, 1998, for a review). Indeed, such characteristics describe well coercive controllers. Children

as young as 3 to 5 years old discriminate between these two types of aggressors in that they gravitate toward bistrategic controllers (e.g., choose them as friends) and away from coercive controllers (e.g., choose them as nonfriends; see also, Vaughn, this volume).

In stark contrast to bistrategic controllers, noncontrollers are the lowest by far on resource control thus earning them very low social dominance status. Overall they report feeling socially ineffective, lonely, and unable to attain goals. Noncontrolling preschoolers are described as the least assertive and aggressive by teachers, yet are among the lowest on positive peer regard (Hawley, Napientek, et al., 2006). Noncontrolling adolescents are among the lowest on positive affect, social self-concept, social skills, and, through low on aggression and hostility, are unpopular and perceived as rejected by their peers (Hawley, 2003a).

Thus, in summary, we, like others (e.g., Bierman, Smoot, & Aumiller, 1993; Cole, Dodge, Terry, & Wright, 1991; Newcomb, Bukowski, & Pattee, 1993; Rodkin, Farmer, Pearl, & van Aker, 2000) find that aggressive children and youths (and likely adults) do not compose a homogenous group. Bistrategic controllers, despite their aggression, are socially skilled in ways coercive controllers (and noncontrollers) are not.

Social Centrality

In a review of the social dominance literature (Hawley, 1999), I suggested that, with the broadening of the social dominance construct to include prosocial strategies (in addition to traditional agonism-based notions of social dominance), human patterns of social organization would converge with those documented in animal groups; namely, that social dominants would attract positive attention from the group. As high-status individuals, the social centrality hypothesis suggests that bistrategic controllers should be well regarded by peers, sought out by them, and, for those who are less able to compete for their attention (e.g., because of their lower status), a target of their social aspirations. This hypothesis, however, faces competing hypotheses that would suggest that their aggressive behavior would be ultimately repellent to others, except perhaps for those drawn together by "common deviance" (e.g., Dishion, Andrews, & Crosby, 1995; Moffitt, 1993).

My colleagues and I have repeatedly found support for the social centrality hypothesis; bistrategic controllers are among the most sought out and socially prominent. Data gathered from thousands of participants from 3 to 17 years of age fails to support suggestions that the aggression employed by these children significantly negatively impacts their social standing among peers. On the contrary, it appears to enhance it (see also Cilllessen & Mayeaux, 2004).

Are "Mean" Social Dominants Liked?

The term "status" currently holds multiple meanings, thus creating a vibrant yet somewhat confusing literature landscape. Ethnographic studies (e.g., Adler & Adler, 1995; Eder, 1995; Merten, 1997), for example, provide detailed accounts of adolescent "status hierarchies" characterized by competition for and defense of "popularity." Of the several contributions of this work, two are particularly relevant here. First, females' relational, social, or indirect aggression appears to be associated with popularity rather than unpopularity. Second, this literature highlights the fact that popularity and being liked (sometimes also referred to as sociometric status) are not identical. Thus, being socially prominent does not necessitate being beloved.

Currently, the relationship between social prominence (popularity) and social preference (being liked) is being explored to clarify these apparently overlapping yet distinct constructs (e.g., Cillessen & Mayeux, this volume). Recent work has shown that relational aggression appears to be positively associated with social prominence and becomes more so as children age. On the other hand, early positive associations between social preference and social prominence reduce over time. Thus, these two measures of peer status become more distinct as children grow older (Cillessen & Mayeux, 2004) suggesting that aggressive socially prominent adolescents are not in fact well liked.

This variable-centered work on social prominence, like the person-centered work stemming from resource control theory, attempts to address what we refer to as the peer regard-aggression paradox⁵ (Hawley, Little, et al., 2005; Hawley & McNamara, 2006) by teasing apart two dimensions of status (social preference and social prominence) and exploring their relationship longitudinally (e.g., Cillessen & Mayeux, 2004; Rose, Swenson, & Waller, 2004). The distinction between social prominence and social preference is critical because socially preferred youth enjoy present and future positive outcomes such as emotional adjustment and high quality friendships. It is not presently clear from these variable centered approaches, however, whether socially prominent youths also enjoy these outcomes, or whether immediate status advantages are followed by long-term adjustment difficulties because of the lower quality friendships these children are believed to bear (Cillessen & Rose, 2005).

In contrast, our work from resource control theory arrives at very different conclusions. Recent work has shown (Hawley, Card, et al., in

⁵The apparent social attractiveness of aggressive individuals which, from some perspectives, is unexpected.

press) that bistrategically controlling adolescents enjoy as many reciprocal best friendships as the other resource control groups, but receive more nominations for best friendship than average (that is, they are named by their peers as being the peers' "best friend"). Moreover, detailed analyses of their bidirectional relationship processes (i.e., where both parties of the reciprocal best friendship describe the quality of that relationship) showed that the friendships of bistrategic controllers are among the highest in terms of positive features (i.e., high on intimacy, companionship, and fun). These same relationships, however, also have high levels of conflict. Where such a relationship stands on the "quality continuum" when characterized by positive and negative features is open to debate. It is useful to note, however, that prominent marital researchers as well as primatologists have made the case that the amount of conflict is less important than the ways this conflict is resolved (de Waal, 2000; Gottman, 1994; but see Brendgen, Markiewicz, Doyle, & Bukowski, 2001). At this time, however, we have little reason to believe that bistrategic controllers suffer from poor quality relationships. Thus, we do not believe they necessarily carry any long-term risk associated with low-friendship quality.

In the end, we come to similar conclusions as those early ascendancy and dominance researchers: individuals with very high social dominance status appear to fare quite well.

GENDER DIFFERENCES AND SIMILARITIES

Because we align social dominance with competitive success, we, in contrast to those who align social dominance more closely with aggression and physical aggression, expect fewer gender differences because we do not believe competition for resources is any less important for females than males. Indeed, resource competition may well be more important and have more long-term, cross-generational implications for females (Hawley, Little, et al., 2005, Hrdy, 1999). Although my colleagues and I have documented that males overall report higher levels of dominance motivations and aggression than females (Hawley, Little, et al., 2005), we find that by comparing males and females within the resource control types, gender differences reduce considerably and in some cases disappear altogether. For example, there are as many bistrategic girls as there are bistrategic boys, even though they are derived by identical criteria (i.e., girls were not normed separately from boys). Like bistrategic boys, bistrategic girls report high levels of motivations associated with social dominance, as well as high levels of overt and relational aggression (a finding anticipated by Maslow). Also like bistrategic boys,

bistrategic girls are liked more than average, their aggressive behavior (both overt and relational) notwithstanding. Likewise, bistrategic boys exhibit behaviors typically associated with girls (emotion-decoding skills, high levels of relational aggression). Thus it appears to us that high status individuals utilize all manner of behaviors associated with status pursuit rather than operating solely within gender normative expectations.

Not only do gender differences reduce considerably when looking at within status gender variability, we find that differences even reverse in direction from that which is predicted from other perspectives. For example, high-status/aggressive females experience social backlash in occupational contexts where they are punished socially (i.e., judged negatively) for their agency (e.g., Rudman & Glick, 1999). Resource control theory would predict that high-status females in general would be highly socially attractive for the same reason that high status males would be (i.e., the social centrality hypothesis); namely, they have demonstrated competency with material, social, and informational resources and as such make for highly valued alliance partners (Walster et al., 1978). In this work, bistrategic females were found to be equally socially attractive as bistrategic males and more socially attractive than prosocially controlling males. Additionally, those not already friends with bistrategic females aspired to be (Hawley, Little, et al., 2005). This suggests that others recognize that these high status individuals bring much to relationships and wish to engage in reciprocal exchange with them (i.e., forge a friendship). In other words, we generally wish to affiliate with those of higher status, if only we could compete successfully for their attention.

SOCIAL DOMINANCE: A FUNCTION OF GENES AND ENVIRONMENT

Contextual factors are fundamental to social dominance from the present approach. First, from the previous discussion, we see that aggressiveness alone is a suboptimal strategy. The bistrategic profile encourages us to broaden our understanding of context to include other characteristics of the individual such as the presence of social skills and proclivities: Aggression coupled with more positive qualities make for social and material success in ways that aggression alone does not.

Second, social dominance (i.e., competitive superiority) is an aspect of a relationship asymmetry. Though recognized early on, this point was not adequately addressed by ethnological studies of social dominance

that emphasized hierarchies over complex dyadic relationships (Vaughn, 1999). We now know that social behavior, including that involving a contested resource, is highly dependent on the identities of the players, their personal characteristics, and the unique history of their interactions. By employing a social relations paradigm (i.e., Kenny & Lavoie, 1984), for example, and observing multiple dyadic interactions in a controlled laboratory setting, my colleagues and I (Hawley & Little, 1999) found high ranking preschoolers more likely to engage in social play (see also Maslow, 1936) and issue directives (see also Jack, 1934), whereas social subordinates were more likely to defer to dominants and imitate them (see also Bühler, 1927). Importantly, like Jack and Maslow, we found children of middle rank to modify their behavior according to the rank of their social partner. In the presence of social dominants, middle-ranking children deferred and imitated. In the presence of subordinates, however, they confidently engaged the play material. When given the opportunity, subordinates behaved like dominants.

It follows then that social dominance cannot be solely a genetically encoded trait because competition transcends the individual to encompass relationships. Thus, it would be inappropriate to speak of a "gene for dominance." Resource-directedness is very likely the underlying evolutionary adaptation of which we speak. It would not be a stretch to claim that those who were not resource directed are not our ancestors.

Yet there is clearly variability in the manner in which resource directedness is expressed and, accordingly, the genetic underpinnings of several traits predicting social dominance can also be considered. For example, in defining social dominance in terms of competition rather than agonism, we have not found social dominance to be strongly related to size or gender. Instead, we find stronger associations with temperament, personality, and motivational features. In preschoolers, for example, we have found social dominance to be predicted by persistence, extroversion, and openness to experience, all of which may be heritable to some extent.

Furthermore, in addition to the well-substantiated fact that aggressive behavior can be learned (e.g., Bandura et al., 1961), there is also undoubtedly a conditioned component to relative success or failure at competition and therefore also the form and intensity of future attempts (see also Pusey & Packer, 1997). When there are "winners" of competition, there sadly must also be "losers." Experiencing early losses repeatedly in competitive interactions could intensify individual differences in persistence or effectance motivation. For Maslow (1937), this feature was "dominance feeling" or later, "self-esteem" (Maslow, 1942). Some might call it "hope" (e.g., Snyder, 2002), others, "agency" (e.g., Hawley & Little, 2002; Skinner, Chapman, & Bales, 1988). Because the noncontrolling strategy

can be created experientially, genetic mechanisms need not be invoked for explaining losing strategies. Deferring to others can be considered simply making the best of a bad situation.

Patterns of deferring to social dominants emerge already before preschool (Bühler, 1927; Hawley & Little, 1999). Indeed, it is the possibility of a persistent pattern of deference that raises concern for the development of social subordinates, those who employ neither coercive nor prosocial strategies (i.e., noncontrollers). What if a socially subordinate child seldom has the opportunity to play the dominant role or to behave like dominants (à la Maslow and Jack)? Anecdotally, I have observed nonverbal and withdrawn noncontrollers blossom into agentic extroverts within weeks of dominant peers graduating to kindergarten. What of the noncontroller who enjoys no such contextual transformation; is his or her learning opportunities thusly restricted? Are they learning they can have little effect on the world? From the present perspective, these noncontrolling youths are most at risk for psychopathology because, as just described, they apparently make few control attempts, do not know their impact on the social world, and find themselves rejected, victimized, and depressed.

IMPLICATIONS FOR INTERVENTION

The material and social success of bistrategics resource controllers are due at least in part to their elevated levels of aggression because this feature sets them apart from prosocial controllers. By virtue of the fact that they are well-regarded by many in the peer group, it appears that developing humans do not find aggression quite as repellant as conventional wisdom might suggest.

On the other hand, every act of aggression presumably has a victim. We should bear in mind, however, the distinction between repeated victims of aggression (e.g., whipping boys, etc.; Olweus, 1993) from those who are aggressed against by their powerful peers within their friendship circles. In our studies, we have seen no evidence that bistrategic controllers wantonly wound others for pleasure, or even repeatedly target those weaker than themselves (i.e., they do not appear to be the classic "schoolyard bullies"). Indeed, the targets of their aggression appear to be their very own best friends (Hawley, Card, et al., in press; see also Vaughn, this volume).

Coercive controllers, in contrast to bistrategic controllers, are undercontrolled, have poor social skills, and low peer acceptance. These characteristics presumably bring these aggressive children to the attention of school personnel for referral to interventions targeting aggressive behavior (Burke, Loeber, & Birmaher, 2002). Teachers

even rate these children as the least physically attractive, perhaps consequent to dealing with these deficits on a daily basis (Hawley, Napolentek, et al., 2005). Therapeutic interventions could be viewed as a form of skill-building whereby these children are taught the prosocial skills they need to balance their shortcomings that emerge from purely coercive attempts (e.g., Fraser et al., 2005).

Interventions that have proven effective for unskilled aggressors like coercive controllers are likely to be less effective with bistrategic controllers. Recall that despite their high levels of aggression (relational and overt), they are socially attuned and morally developed (and in adolescence, their aggression may not be detected by teachers; Hawley, 2003a). Thus, the moral education, skill-building, perspective taking enhancements, and sensitivity training would likely be of little value to youths who are already excelling in these domains. Does this work suggest the targets of our interventions should be noncontrollers and they should be taught to behave more like bistrategics? A related question was similarly posed by Helen Woolley (1925) in her description of Agnes, a 4-year-old girl who stood out her "desire to manage," her "intense interest in her fellowmen," an ability to anticipate the needs and emotions of others (including adults), persistence, sympathy towards other children, as well as her capacity for aggression. Woolley asked whether we should extinguish the "executive skills" of a developing girl or nurture them. The answers are far from clear and are unlikely to draw consensus.

CONTROVERSY AND MORALITY

Resource control theory gives rise to testable predictions about profiles of strategy employment in social groups. Specifically, we would expect that social dominance (i.e., successful resource control) to be well served by aggression balanced with social skills and, moreover, that such effective balancing would win both material and social rewards. Yet our expectations and findings about socially dominant bistrategic males and females strike some as "controversial" and "unexpected." Why? Perhaps, because Rousseauian philosophies and derivative theoretical perspectives generally consider aggression to be a key marker of incompetence and pathology. To claim that such "psychopathology" can be beneficial and therefore "good" would be controversial indeed. However, these claims have not been made anywhere.

First, it is not at all clear that aggressive self expression is "pathological," particularly when accompanied by prosocial skills and strategies. The bistrategic profile has made this point abundantly clear. They are

extroverted and open to experience, have well-developed social skills, and experience friendships more than most. Rather than being limited by few behavioral options for a given situation (e.g., "only defer," or "only reciprocate"), they appear to have more options than most (e.g., reciprocate, dominate, retaliate). Additionally, they may stand superior in their ability to size up situations and predict the behaviors, goals, and motivations of others (Sutton, Smith, & Swettenham, 1999a, 1999b; see also Hawley, 2006b, for an extended discussion from evolutionary and game theoretic perspectives). The concern about the bistrategic profile appears to be one of relative values derived ultimately from moral treatises.

By taking an evolutionary stance and pointing out that aggression appears to be employed effectively with benefit by some, do we conclude that "aggression is good"? Beginning students of evolutionary theory commonly fall into the trap of concluding that what is "natural" is "good." Infanticide is "natural" insofar as it occurs with great regularity in many taxa, including humans. Do we therefore conclude that "infanticide is good"? Of course not. The issue is not merely academic. Some of the most mean-spirited and inhumane social policies derived from this naturalistic fallacy (e.g., Spencer, 1855).

For centuries, natural scientists struggled to see God's benevolence in nature (to "... infer God's essence from the products of his creation"; Gould, 1983, p. 38). Nature, it was recognized offered profound beauty and evidence of design. Yet on closer inspection, nature also proved to be extremely cruel. Nature in fact is amoral and therefore cannot give rise to ethical principles (Gould, 1983; Moore, 1903). I am no theologian, philosopher, or ethicist and thus am ill-qualified to comment on the nature of "goodness." Suffice it to say that one should not simplistically conclude that "aggression is good" based on the preceding presentation.

CONCLUSIONS

Those wishing to align social competence with "goodness" are unlikely to find solace in these final comments. Just as Freud did not see happiness as a realistic outcome of societal constraints, Darwin did not imply that the successful group-living individual would embody moral righteousness. I agree with Bukowski (2003) who pointed out that "univariate claims" linking positive behavior with positive outcomes and negative behavior with negative outcomes are not likely to adequately capture the complexity of human behavior. Though we are by nature gregarious, we are also acquisitive. A unique brand of social competence may very well be found where these two independent forces collide.

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