Managing the Threats and Opportunities Afforded by Human Sociality

Steven L. Neuberg
Arizona State University

Catherine A. Cottrell
University of Florida

Group living offers humans substantial fitness-enhancing benefits, although it also affords significant fitness-decreasing costs. To enhance these benefits and reduce these costs, individuals use emotional, cognitive, and behavioral mechanisms designed to help them effectively manage the complexities of life in highly interdependent groups. The authors briefly outline their evolutionary, functional analysis of human sociality and summarize accumulating empirical support for various implications derived from this conceptual analysis. In particular, the authors focus on four questions central to intragroup and intergroup relations: (a) How do people manage the need to be selective in their choice of social affiliates? (b) how do people manage the impressions others form of them? (c) how do people manage the threats that fellow group members often pose? and (d) how do members of groups manage their own groups' welfare vis à vis other groups? In all, the authors present the outline of a broad theoretical framework built on a functional analysis of the universal nature of groups' social structures and processes.

Keywords: evolutionary psychology, groups, self-presentation, stigma, prejudice

People are born into families, engage in games with neighbors, work together to earn a living, celebrate community events, and join one another to defend against common enemies. Humans are social animals, and this feature of our nature permeates nearly all we think, feel, and do.

This article presents an evolutionary approach to thinking about human sociality that we believe provides a promising conceptual foundation for understanding a wide range of apparently disparate social phenomena. We illustrate the value of this approach by presenting conceptual analyses and research that touch on four questions long central to understanding issues at the core of the science of group dynamics: how groups form, how people behave as members of groups, and how groups interact with one another. Specifically, (a) how do people manage the de facto requirement that they

be selective in their choice of social affiliates? (b) how do people manage the impressions others form of them? (c) how do people manage the threats that fellow group members often pose? and (d) how do members of groups manage their own groups' welfare vis à vis other groups?

The Cost–Benefit Interplay of Human Sociality

Life was difficult for proto-humans, and theorists have compellingly argued that the fundamental features underlying the human form of sociality evolved because they enhanced individual fitness in the face of this harshness: By joining together in coalitions and interacting with one another in interdependent ways, our ancestors were better able to acquire and protect critical resources (e.g., food or mating partners) and accomplish fundamental goals (e.g., self-protection or child rearing) than was possible by facing these challenges alone (Brewer, 2001; Campbell, 1982; Richerson & Boyd, 1995). In evolutionary terms, those who lived in such coalitions and used the tools of interdependence likely gained significant survival and reproductive advantages over those who maintained a more solitary, independent lifestyle; over long

Steven L. Neuberg, Department of Psychology, Arizona State University; Catherine A. Cottrell, Department of Psychology, University of Florida.

Correspondence concerning this article should be addressed to Steven L. Neuberg, Department of Psychology, Arizona State University, Tempe, AZ 85287-1104. E-mail: steven.neuberg@asu.edu

periods of time, this created in humans a taste for sociality and for the processes and structures inherent to it. As such, these affinities for sociality and its associated processes and structures can be viewed as critical adaptations designed by natural selection to protect individuals from the environment's many dangers and to facilitate their ability to exploit the environment's many opportunities (Barchas, 1986; Brewer, 1997; Brewer & Caporael, 1990; Leakey, 1978).

Human sociality also carries potential fitness costs, however (e.g., Alexander, 1974; Dunbar, 1988). The mere presence of proximate others exposes one to physical harm and contagious diseases, behaving cooperatively with others makes one vulnerable to those who would free ride on one's material and energetic contributions, and so forth. For the fitness benefits of sociality to exceed its costs, then, mechanisms would have evolved to (a) attune individuals to the features or behaviors of others that could characterize them as being potentially valuable or threatening to effective sociality and (b) lead individuals to respond to such perceived opportunities and threats in functional, opportunity-enhancing, and threat-mitigating ways.

Our point of departure is thus simple and straightforward: People possess affective, cognitive, and behavioral mechanisms designed to help them effectively manage the complexities of life in highly interdependent groups so as to maximize potential fitness benefits and minimize potential fitness costs. Like other adaptationist approaches, then, we begin with a set of fundamental assumptions—in our case, about the structures and processes necessary (or near-necessary) for group living to enhance the reproductive fitness of individuals—and derive from them predictions about specific contemporary social preferences, beliefs, and behaviors.

In the sections that follow, we characterize some of the recurring opportunities and threats inherent to different aspects of human sociality, derive predictions regarding the specific functional responses individuals are likely to have to them, and summarize findings bearing on these predictions.

Managing the Challenge of Social Affiliation: Discriminate Sociality

Humans work, play, and defend together in highly interdependent groups and relationships.

But do we work, play, and protect with just *any* possible partners? The answer, we argue, is a resounding no. Because such arrangements often require great investments over long periods of time, each individual cannot meaningfully interact with every potential coworker, friend, or ally. As a result, humans display discriminate sociality, selecting their interaction partners carefully so as to maximize the returns on their investments in sociality (Kurzban & Leary, 2001; Kurzban & Neuberg, 2005; Tooby & Cosmides, 1996). On what grounds, however, do people select their business partners, friends, allies, and other social affiliates? What personal attributes do people value in others, thereby shaping human affiliation decisions?

From an evolutionary perspective, people should highly value—and seek out—those features in others that suggest that, as group members and relationship partners, they are likely to facilitate common goals. As social animals living in highly interdependent groups, our individual outcomes are significantly intertwined with those of the larger group. If the group is effective, the fitness of individual members is likely to be enhanced; if the group is ineffective, the fitness of individual members is likely to be reduced. What features of others, however, tend to facilitate group effectiveness?

At the core of human sociality is long-term, reciprocal cooperative exchange with fellow group members. Mutual cooperation—the contribution of personal resources (e.g., tangible goods, skills, efforts, and information) to shared group goals—affords great benefits to group living over solitary living. Indeed, the norm of reciprocal cooperation appears to be universal (e.g., Becker, 1956; Gouldner, 1960). Providing personal resources is costly, however, tempting individuals to free ride on others' contributions. Thus, for the fitness benefits of participating in group living to outweigh the fitness costs of doing so, there must exist a significant amount of trust among group members—the belief that others will live up to the (implicit or explicit) bargain and contribute their own resources to the common good—especially when exchanges are to be conducted over extended periods of time: I have to trust that you will follow through on your promises at some (often undetermined) point in the future, and you have to trust that I will follow through on my promises. In previous work (Cottrell, Neuberg, & Li, 2007), we

have argued that trust and cooperation are necessary for human sociality—a notion consistent with others' theorizing (e.g., Brewer, 1997).

Given the critical importance of trust and cooperation among group members for individual fitness—exchanging with uncooperative and untrustworthy individuals would have posed significant fitness costs—we expect that humans would have evolved a desire and ability to identify and differentiate between trustworthy and untrustworthy, and between cooperative and uncooperative, potential affiliation partners; such differentiations could be based on past personal interaction experience, reputation, and even physical cues (e.g., Boone & Buck, 2003; Brownlow & Zebrowitz, 1990). We also expect that humans, when contemplating highly interdependent interactions (but not necessarily when contemplating noninterdependent interactions), would have evolved a strong social preference for individuals so identified as trustworthy and cooperative. Such inclinations have likely been nurtured and reinforced over long periods of time via cultural evolution processes.

The value of trustworthiness and cooperativeness should extend to all types of interdependent groups and relationships (e.g., project team at work, athletic team, or family). Although groups and relationships vary greatly in their specific goals (e.g., to complete a work-related assignment, to defeat a rival sports team, or to raise children), these different goals nonetheless require each individual to have confidence that others will indeed contribute to the collective well-being of the relationship or group—features that demand trust and cooperation among members.

Our evolutionary analysis further predicts, however, that trustworthiness should hold a unique place in affiliation decisions. In a general sense, cooperation likely requires that others are seen as trustworthy (Brewer, 1999; Deutsch, 1960): An individual should only contribute resources to common goals right now if others can be reasonably expected to contribute resources in the future. Initiating—or maintaining—cooperative exchange without the underlying trust that others will later return the favor can place an individual at increased risk of never obtaining returns on the exchanged resources—a costly miscalculation, to be sure. On the other hand, engaging in cooperative exchange with others who are (ostensibly) likely to return the favor should involve less risk (on average). In this sense, then, trustworthiness could be viewed as a necessary precursor to fitness-enhancing cooperative exchange with others. We therefore predict that people will view others' traits indicating trustworthiness to be even more important than traits indicating cooperativeness within an interdependent relationship. This analysis leads to a general implication for understanding affiliation decisions: People should strongly desire trustworthiness (in particular) and cooperativeness (to a lesser extent) across qualitatively different interdependence contexts.

An adaptationist approach does not preclude the importance of other attributes for interdependent social relations. Physically adept individuals are needed to win basketball games; extraverted individuals are needed to establish a networked social group; and so on. What such examples illustrate, however, is that the importance of other valued attributes will depend on the relevance of the characteristic to the specific context. Physical skill—but not extraversion—helps win basketball games; extraversion—but not physical skill—helps create engaging social groups. The value of person characteristics such as these should differ greatly as a function of the particular tasks or goals served by a potential group member or relationship partner. This analysis thus suggests another implication for understanding affiliation decisions: Unlike trustworthiness (especially) and cooperativeness (somewhat less so), which should be valued in group members and social partners across interdependent domains, people should differentially desire other characteristics only to the extent that they have specific relevance to a particular interdependence context. Cottrell, Neuberg, & Li (2007) reviewed alternative conceptual approaches and concluded that they lack theoretical architectures able to generate this set of textured hypotheses.

We tested these hypotheses in a series of recent studies (Cottrell, Neuberg, & Li, 2007; Cottrell & Neuberg, 2006). In each, we asked university students a straightforward question: What characteristics do you value in others? Using assorted characteristics (e.g., trustworthiness, cooperativeness, intelligence, and extraversion), these participants then "designed" their ideal members of social groups (e.g., basketball team, final exam study group, and soror-

ity or fraternity) and relationships (e.g., family member, close friendship, and employee).

Our hypotheses were strongly supported. Trustworthiness, in particular, was indeed highly valued across different interdependent groups and relationships (but, it is important to note, was not always valued for low interdependent groups, as anticipated). Cooperativeness also emerged as important, although less so than trustworthiness. Moreover, and also as predicted, the importance of other typically valued characteristics depended on their relevance to the specific interdependence context. For instance, physical health was highly valued for athletic teams (e.g., basketball and golf teams), but not for work-related contexts (e.g., project team at work or study group); conscientiousness was highly valued for work-related settings (e.g., project team at work or employee), but not for social-focused associations (e.g., sorority, fraternity, or close friendship); and extraversion was highly valued for socially oriented contexts (e.g., sorority, fraternity, or close friendship), but not for athletic teams (e.g., basketball and golf teams). Moreover, when we constrained participants' choices—by forcing them to select the most important characteristic or by incorporating a "cost" to emphasizing the value of a characteristic—trustworthiness especially emerged as important across different social contexts; no other attribute showed such a pattern of cross-domain importance. In all, we are inclined to regard trustworthiness (in particular) as a necessity for human sociality, whereas other characteristics may better be considered luxuries (Li, Bailey, Kenrick, & Linsenmeier, 2002)—assertions derived from our evolutionary approach and supported by these recent data.

Given the need for people to be discriminately social, the question of what characteristics people desire in others is a fundamental one for understanding human sociality. Whereas the extant social psychological approaches are generally unable to offer theoretically guided answers to this question (see Cottrell, Neuberg, & Li, 2007), our evolutionary approach clearly offers meaningful insight into the person characteristics valued in others—insight that should benefit investigations of friend and family networks, organizational settings, and other contexts involving affiliation decisions and the formation of groups.

Managing Public Impressions: Self-Presentation

Seeking others who facilitate effective interdependence helps individuals reduce the fitness costs of human sociality and increase the fitness benefits. An adaptationist approach also presents implications for the flip side of this issue: Given the significant fitness benefits of being an accepted and valued member of an effective group, people should also seek to communicate to others that they themselves possess these desired attributes. Just as this approach provides conceptual traction for understanding what people need to know about other members of their groups, it also provides conceptual traction for understanding what people need to present about themselves to these other members of their groups.

Our perspective suggests that self-presentational attempts can be better understood when viewed within the context of a detailed, functional analysis of human sociality. The findings we reviewed above indicate that people highly value trustworthiness and cooperativeness (to a lesser extent) in all others with whom they may be interdependent, whereas they differentially value other characteristics depending on the relevance of these characteristics to the specific interdependence context. One might reasonably extend this analysis of valued characteristics to an analysis of desirable self-presentations. That is, just as individuals may value specific qualities in others, they may also engage in specific impression management strategies designed to display these valued attributes to fellow coalition members. That is, people should especially desire to express those characteristics most relevant to group success (i.e., trustworthiness and cooperativeness) to others with whom they may be interdependent, regardless of the specific group task or relationship type, whereas they should differentially desire to express additional nonfundamental characteristics to others (e.g., conscientiousness or extraversion), depending on the specific group task or relationship type.

Cottrell (2006) tested these hypotheses in a set of studies modeled after those described above. When instructed to rate the importance of conveying assorted impressions (e.g., trustworthiness, extraversion, or intelligence) in various interdependent groups (e.g., basketball team or sorority) and relationships (e.g., close

friendship or employee), undergraduate students indicated that impressions of trustworthiness were highly valued across different groups and relationships involving interdependence with others. An image of cooperativeness, to a lesser extent, was also highly valued across all groups and relationships. Also as predicted, the importance of other images (e.g., extraversion and intelligence) was sensitive to qualitative changes in the interdependence context (e.g., athletics, work, or social task), such that people especially wanted to convey images of physical health within basketball teams, extraversion within fraternities, physical attractiveness within sororities, and the like.

Additional research has extended these findings beyond desired impressions to the more concrete behavioral tactics people use, such that the specific behaviors hypothesized to convey trustworthiness (e.g., telling the truth, following through on plans, and staying true to promises) were also viewed as extremely important across contexts (Cottrell, 2005).

Several important points emerge from our explorations of self-presentation. First, as predicted, people reported wanting to present images of trustworthiness and cooperativeness across qualitatively distinct group and relationship contexts, whereas the importance of presenting other desirable images varied greatly depending on the interdependence context. Second, these findings reveal that people are highly attuned to the presentational requirements of different social situations and that this attunement is sophisticated and textured. Third, there is a nice convergence between the attributes people say they desire in others and the images they say they desire for the self, highlighting the tightly linked nature of person perception and self-presentation (see also Jones, 1990). Fourth, we note the importance that was (again) placed on trustworthiness within human social interactions—a finding that emerges naturally from an evolutionary analysis. This has been an underappreciated point within the literature on self-presentation, which has tended to both underestimate the cross-situation importance of trustworthiness and overestimate the cross-situation importance of other characteristics (see Cottrell, 2005).

Finally, to make a broader point, we note that questions and predictions regarding the content of desired images emerge naturally from our evolutionary analysis, whereas this content has received relatively scant attention in other work, which tends to focus on the process of self-presentation (see Jones & Pittman, 1982, for an exception). Our theoretical analysis and recent data not only provide novel empirical insights into valued self-presentations but also underscore the potential of further investigation into content-focused models of self-presentation.

In sum, our evolutionary perspective suggests that the psychology of self-presentation can also be better understood when viewed within the context of a detailed, functional analysis of human sociality.

Managing Threats From Within the Group: Stigmatization

To protect their substantial investment in human sociality, individuals must be attuned to the threats posed to it. Some threats to group life (e.g., to physical safety, to health via contagious disease) emerge simply as a consequence of living in close proximity to others. Other threats emerge from the ability of group members to interfere with a group's operational integrity—the structures and processes that enable effective and efficient group operations. Effective groups tend to possess certain common features. We discussed above the importance of trust and reciprocal cooperation among members. Effective groups also tend to possess common values, authority structures for organizing individual effort and distributing group resources, and mechanisms for socializing members, among other features (e.g., Brown, 1991). As a result, individuals should be especially attuned not only to fellow group members who potentially threaten physical safety and health, but also to those who potentially threaten within-coalition trust, reciprocal cooperation, value systems, authority structures, socialization processes, and the like (Neuberg, Smith, & Asher, 2000).

Attunement to such threats, however, is not enough; people must also possess mechanisms for effectively responding to and reducing such threats. Here it is useful to take a step back and consider the nature of other evolved threat management systems, adapted to address nonsocial problems. One feature of a great many of these systems is the central role played by emotions: By helping to alert individuals to the presence of particular threats and by subsequently orga-

nizing and coordinating functionally relevant cognitive and behavioral processes, emotions enable us to respond more effectively to these threats (e.g., Carver & Scheier, 1990; Cosmides & Tooby, 2000; Ekman, 1999; Nesse, 1990; Plutchik, 1980, 2003; Simon, 1967; Tooby & Cosmides, 1990). Emotions are able to serve this role because they are functionally specific: Different emotions are elicited by different perceived threats and subsequently facilitate different functional patterns of cognitive and behavioral response (e.g., Frijda, 1986; Izard, 1991; Plutchik, 1980; Roseman, Wiest, & Swartz, 1994; Tomkins, 1963). We respond with fear (but not with anger, disgust, or guilt) to large, rapidly approaching objects, and this fear prepares us to escape (but not to aggress, avoid physical contamination, or offer compensation).

We believe this characterization of nonsocial threat management—threat detection and functionally specific emotionally mediated behavioral response—also characterizes how people manage the threats inherent to sociality. Although the most basic of these emotionally mediated threat-management systems (e.g., those using fear, anger, and disgust) are phylogenetically long-standing (e.g., they exist within other species, even nonsocial ones) and did not evolve for the purpose of managing human sociality, they likely were exploited by natural selection for the additional purpose of helping individuals enhance the benefits of sociality and reduce its costs.

Consider the process of stigmatization—the act of "marking" individuals as being problematic and then responding to them in marginalizing ways (e.g., Crocker, Major, & Steele, 1998; Goffman, 1963; Jones et al., 1984). From our evolutionary perspective, stigmatization and its subclasses (e.g., ostracism, exclusion, etc.) are usefully viewed as mechanisms of informal social control designed to keep the social coalition functioning in such a way as to maintain its ability to confer fitness benefits on its members (Neuberg et al., 2000). By stigmatizing group members who ostensibly act to impede the group's ability to provide desired resources to its members, people reduce the impact of those detrimental actions in not only the immediate, short term, but in the longer term as well: Stigmatization may serve to rehabilitate offenders, separate them from the group if necessary, and provide a lesson to other group members who

might be tempted to pose similar threats in the future. Commonalities in stigmatization across cultures and relevant group-living species (e.g., chimpanzees)—for example, of those who violate the norm of reciprocity or who possess cues that heuristically signal contagious disease (e.g., morphological abnormalities; de Waal, 1989; Goodall, 1986)—point to tangible, material benefits of stigmatization for group members and render less compelling alternative rationales for it (e.g., to enhance one's self-esteem or to justify an in-group's preferred societal status).

Our evolutionary approach goes beyond merely recasting the phenomenon of stigmatization as serving to reduce tangible threats to individuals and their groups. Rather, it also predicts that the manner in which apparently threatening group members are stigmatized should be far more textured than what is suggested by traditional theories of stigmatization (see Cottrell & Neuberg, 2005, for a review). To the extent that qualitatively distinct threats elicit qualitatively distinct emotions and behaviors, as we have suggested, one should predict that group members posing different threats should be stigmatized in different ways.

Findings from our labs strongly support this prediction (e.g., Cottrell & Neuberg, 2005). Consider, for instance, the responses reported by European Americans when asked to think about gay men in American society. Gay men are seen to pose relatively great threats to public health (apparently because of the presumed link between anal intercourse and disease), elicit relatively high levels of physical disgust (the emotion elicited by cues signaling disease), and evoke enhanced inclinations toward health-protective actions (e.g., getting more frequent medical checkups or avoiding a water fountain if it's just been used by a gay man); note the functional connection linking the perceived threat (disease), the experienced emotion (physical disgust), and the resulting behavioral inclinations (anticontamination efforts). In contrast, fundamentalist Christians are perceived to pose special threats to values and personal freedoms, elicit relatively high levels of moral disgust and anger, and evoke enhanced inclinations toward values-defending behaviors such as removing children from classrooms in which fundamentalist Christians are teaching and protesting appointments of such individuals to government

committees that make legal and social policy. Moreover, gay men and fundamentalist Christians are each viewed and reacted to in qualitatively distinct ways than are African Americans, Native Americans, and Asian Americans—who also elicit distinct patterns of threat perceptions, emotional responses, and behavioral inclinations from one another. Different people and groups, because they are perceived to pose different patterns of threats, are stigmatized in different ways.

Three other points are especially noteworthy. First, traditional measures of stigma focus on the evaluative valence of affective and behavioral reactions to marked individuals and groups—on whether such groups are liked versus disliked or approached versus avoided. Our findings reveal, however, that such measures may actually obscure the underlying texture of people's reactions, such that stigmatized individuals and groups that are viewed as equivalently negative and are similarly avoided nonetheless elicit quite different profiles of emotional and behavioral reactions. We have argued that, by masking the actual texturing of people's responses to others, much traditional research has hindered the development of stigma and prejudice theory.

Second, our findings reveal that after controlling statistically for the specific threats ostensibly posed by stigmatized groups, the groups themselves predicted little of our participants' emotional reactions; in contrast, perceived threats continued to predict emotional reactions after controlling for groups (Cottrell & Neuberg, 2005). These findings support the idea that rather than stigmatizing particular groups or individuals per se, people stigmatize the constellations of threats they perceive these groups and individuals as posing—implying a continuity between social stigmatization and more fundamental mechanisms that evolved to manage nonsocial threats to fitness.

Finally, our evolutionary approach, along with other threat-based functional approaches to understanding stigma and prejudice (e.g., Kurzban & Leary, 2001; Navarrete & Fessler, 2006; Schaller, Park, & Faulkner, 2003), makes novel predictions about the circumstances that should moderate the extent to which potentially threatening individuals should be stigmatized. Simply put, circumstances that enhance a person's felt vulnerability to a particular threat should also enhance the likelihood that he or she will stigmatize individuals and groups stereotypically believed to pose that threat. Space considerations preclude a discussion of research testing this hypothesis, but the curious reader will be interested in findings demonstrating that ambient darkness influences perceptions especially of stereotypically dangerous ethnic groups, that disease sensitivity influences reactions especially to obese and disfigured individuals, and so forth (e.g., Park, Faulkner, & Schaller, 2003; Park, Schaller, & Crandall, in press; Schaller & Duncan, 2007; Schaller, Park, & Mueller, 2003). The functional specificity of these findings makes this line of work especially compelling.

We have been brief, but the broader implication should be clear: The adaptationist approach we take here, focusing as it does on the management of threats to sociality, generates highly textured predictions and makes novel contributions to the understanding of within-group stigmatization.

Managing Threats From Other Groups: Prejudice and Discrimination

The human affinity for the constituent elements of sociality provides survival and reproductive benefits to individuals. One by-product of these mechanisms may be an increase in intergroup conflict (e.g., Boehm, 1999; Brewer, 2001; Campbell, 1967). Our earlier discussion of discriminate sociality, for instance, pointed to the importance of trustworthiness as the critical feature desired in all manner of affiliation partners. Of course, members of other groups are less likely than in-group members to be viewed as trustworthy, given our (typical) lack of familiarity with them and, in particular, our (typical) lack of previous prosocial interaction with them. Lacking such cues and experiences, we might expect people to be wary of engaging in cooperative interactions with out-group others. Of course, in the absence of salient threats, in-group preference need not become out-group derogation or hostility (Brewer, 1979).

But groups do at times threaten one another and, even more so, are readily perceived as threatening one another. In the face of such perceptions, we suspect that the same psychology that serves to address threats posed by in-group members may also serve to address parallel threats posed by out-groups. Just as group members perceived to threaten a group's

values elicit moral disgust and the desire to keep them away from impressionable members, out-groups perceived as holding incompatible values should be responded to similarly; just as group members seen to free ride on others' efforts evoke anger and the desire to punish, so too should out-groups perceived to illegitimately take what is not theirs.

Our findings are highly consistent with this. People exhibit few out-group prejudices in the absence of perceived tangible out-group threats, but considerable prejudices in the presence of such threats (e.g., Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002). Moreover, these prejudices exhibit the same functional specificity observed when assessing the stigmatization of in-group members. Consider our European American respondents, for instance. They view African Americans as posing relatively greater threats to physical safety, their emotional reactions contain a greater fear component, and they report enhanced safety-enhancing inclinations such as voting to increase police patrols. Moreover, although they hold similarly negative simple evaluations (i.e., general prejudice) of Asian Americans and Native Americans, the particular threat, emotion, and behavioral inclination profiles elicited by these other groups differ greatly from one another and from the profiles elicited by African Americans.

Note that these basic findings—of threat-based prejudices, their functional specificity, and so forth—are not limited to European American undergraduates. Rather, recent research from our lab reveals that these principles seem to hold also for African, Hispanic, and Asian American undergraduates and representative national samples of European, African, and Asian Americans (Cottrell & Neuberg, 2007; Cottrell, Neuberg, & Richards, 2007). And ongoing explorations in various locations around the world are further exploring the cross-cultural stability of mechanisms in which specific threats are associated with functionally specific emotions and discriminatory inclinations.

Final Comments

We view the human form of highly interdependent sociality to involve extremely critical human adaptations. Along with its substantial fitness-enhancing benefits, however, sociality also carries the potential to impose significant fitness-diminishing costs. The essence of our evolutionary approach is to characterize the "near-necessary" features of human sociality and then derive from them the emotional, cognitive, and behavioral mechanisms that would likely have evolved to help people effectively manage the complexities of social life so as to enhance these potential benefits and reduce these potential costs. We find useful an analogy related to the evolution of vision: Just as eyelids, blink reflexes, eyelashes, and tear ducts evolved to protect the eye and its important functions, mechanisms related to, for instance, discriminate sociality, self-presentation, stigmatization, and intergroup prejudices may have evolved to protect human sociality and its important functions.

This evolutionary approach has demonstrated its usefulness by generating novel, and empirically supported, predictions about a wide range of social phenomena. Our aim in this article, however, has not been to delve in great detail into the particular issues we have raised. Moreover, we have not focused here on contrasting our adaptationist approach with specific nonadaptationist ones, although doing so illustrates not only that our approach generates novel, textured predictions beyond the scope of other frameworks but also that it addresses domains of cognition and behavior (e.g., intergroup prejudice and self-presentation) usually treated as theoretically unrelated by predominant theories in the field. Rather, we have aimed to sweep across a few issues central to human social life and of interest to those exploring issues of group dynamics, so as to illustrate the scope of our evolutionary approach; the interested reader will find more thorough expositions and applications of the approach, as well as comparisons to more traditional approaches, elsewhere (e.g., Cottrell & Neuberg, 2005; Cottrell, Neuberg, & Li, 2007; Neuberg et al., 2000; Neuberg & Cottrell, 2002; Cottrell, Neuberg, & Richards, 2007).

In closing, we have attempted to illustrate the value of an analytic approach that, like other evolutionary approaches, has the ability not only to generate novel hypotheses but also to provide an integrative frame within which many different aspects of human behavior can be better understood. The value of this approach is extended by its cross-species, cross-cultural,

and historical scope: Because its predictions derive from an analysis of the fundamental features of human sociality, these predictions should hold to the extent that these features characterize the groups of interest, regardless of the specific species, society, or era. Finally, contrary to many theories of social behavior that focus on process, our evolutionary approach instead focuses on the content of social life: What characteristics do we value in others? What impressions do we want them to have of us? What types of individuals and behaviors do we stigmatize, and in what ways? What forms do our prejudices take, and under what circumstances do we experience these different forms? The human social animal not only acts, but acts in specific ways. It is toward understanding the content of such actions that an adaptationist approach like ours can make its greatest contributions.

References

Alexander, R. D. (1974). The evolution of social behavior. *Annual Review of Ecology and Systematics, 4,* 325–384.

Barchas, P. (1986). A sociophysiological orientation to small groups. In E. Lawler (Ed.), *Advances in group processes* (Vol. 3, pp. 209–246). Greenwich, CT: JAI Press.

Becker, H. (1956). *Man in reciprocity.* New York: Praeger.

Boehm, C. (1999). *Hierarchy in the forest.* Cambridge, MA: Harvard University Press.

Boone, R. T., & Buck, R. (2003). Emotional expressivity and trustworthiness: The role of nonverbal behavior in the evolution of cooperation. *Journal of Nonverbal Behavior, 27,* 163–182.

Brewer, M. B. (1979). Ingroup bias in the minimal intergroup situations: A cognitive motivational analysis. *Psychological Bulletin, 86,* 307–324.

Brewer, M. B. (1997). On the social origins of human nature. In C. McGarty & S. A. Haslam (Eds.), *The message of social psychology: Perspectives on mind in society* (pp. 54–62). Cambridge, MA: Blackwell.

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love or outgroup hate? *Journal of Social Issues, 55,* 429–444.

Brewer, M. B. (2001). Ingroup identification and intergroup conflict: When does ingroup love become outgroup hate? In R. Ashmore, L. Jussim, & D. Wilder (Eds.), *Social identity, intergroup conflict, and conflict reduction* (pp. 17–41). New York: Oxford University Press.

Brewer, M. B., & Caporael, L. R. (1990). Selfish genes vs. selfish people: Sociobiology as origin myth. *Motivation and Emotion, 14,* 237–242.

Brown, D. E. (1991). *Human universals.* New York: McGraw-Hill.

Brownlow, S., & Zebrowitz, L. A. (1990). Facial appearance, gender, and credibility in television commercials. *Journal of Nonverbal Behavior, 14,* 51–60.

Campbell, D. T. (1967). Stereotypes and the perception of group differences. *American Psychologist, 22,* 817–829.

Campbell, D. T. (1982). Legal and primary-group social controls. *Journal of Social and Biological Structures, 5,* 431–438.

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review, 97,* 19–35.

Cosmides, L., & Tooby, J. (2000). Evolutionary psychology and the emotions. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (pp. 91–115). New York: Guilford Press.

Cottrell, C. A. (2005). *The pursuit of functionally adaptive goals via impression management strategies.* Unpublished dissertation, Arizona State University, Tempe.

Cottrell, C. A. (2006). [Valued self-presentations within different social contexts.] Unpublished data, Arizona State University.

Cottrell, C. A., & Neuberg, S. L. (2005). Different emotional reactions to different groups: A sociofunctional threat-based approach to "prejudice." *Journal of Personality and Social Psychology, 88,* 770–789.

Cottrell, C. A., & Neuberg, S. L. (2006). [Valued characteristics within different social contexts.] Unpublished data, Arizona State University.

Cottrell, C. A., & Neuberg, S. L. (2007). *Measuring intergroup affect in survey research: General prejudice versus discrete emotions.* Unpublished manuscript, University of Florida.

Cottrell, C. A., Neuberg, S. L., & Li, N. P. (2007). What do people desire in others? A sociofunctional perspective on the importance of different valued characteristics. *Journal of Personality and Social Psychology, 92,* 208–231.

Cottrell, C. A., Neuberg, S. L., & Richards, D. A. R. (2007). *A sociofunctional approach to understanding the intergroup milieu: Textured threat perceptions and prejudices in the interethnic matrix.* Unpublished manuscript, University of Florida.

Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 504–553). Boston: McGraw-Hill.

Deutsch, M. (1960). The effect of motivational orientation upon trust and suspicion. *Human Relations, 13,* 123–139.

de Waal, F. (1989). Food sharing and reciprocal obligations among chimpanzees. *Journal of Human Evolution, 18,* 433–459.

Dunbar, R. I. M. (1988). *Primate social systems.* Ithaca, NY: Cornell University Press.

Ekman, P. (1999). Basic emotions. In T. Dalgleish & M. Power (Eds.), *The handbook of cognition and emotion* (pp. 45–60). Sussex, England: Wiley.

Frijda, N. H. (1986). *The emotions.* Cambridge, England: Cambridge University Press.

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity.* Englewood Cliffs, NJ: Prentice Hall.

Goodall, J. (1986). Social rejection, exclusion, and shunning among the Gombe chimpanzees. *Ethology and Sociobiology, 7,* 227–236.

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review, 25,* 161–178.

Izard, C. E. (1991). *The psychology of emotions.* New York: Plenum Press.

Jones, E. E. (1990). *Interpersonal perception.* New York: Freeman.

Jones, E. E., Farina, A., Hastorf, A. H., Markus, H., Miller, D. T., & Scott, R. A. (1984). *Social stigma: The psychology of marked relationships.* New York: Freeman.

Jones, E. E., & Pittman, T. S. (1982). Toward a general theory of strategic self-presentation. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1, pp. 231–262). Hillsdale, NJ: Erlbaum.

Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin, 127,* 187–208.

Kurzban, R., & Neuberg, S. L. (2005). Managing ingroup and outgroup relationships. In D. M. Buss (Ed.), *Handbook of evolutionary psychology* (pp. 653–675). New York: Wiley.

Leakey, R. E. (1978). *People of the lake: Mankind and its beginnings.* New York: Avon.

Li, N. P., Bailey, J. M., Kenrick, D. T., & Linsenmeier, J. A. W. (2002). The necessities and luxuries of mate preferences: Testing the tradeoffs. *Journal of Personality and Social Psychology, 82,* 947–955.

Navarrete, C. D., & Fessler, D. M. T. (2006). Disease avoidance and ethnocentrism: The effects of disease vulnerability and disgust sensitivity on intergroup attitudes. *Evolution and Human Behavior, 27,* 270–282.

Nesse, R. M. (1990). Evolutionary explanations of emotions. *Human Nature, 1,* 261–289.

Neuberg, S. L., & Cottrell, C. A. (2002). Intergroup emotions: A sociofunctional approach. In D. M. Mackie & E. R. Smith (Eds.), *From prejudice to intergroup relations: Differentiated reactions to social groups* (pp. 265–283). New York: Psychology Press.

Neuberg, S. L., Smith, D. M., & Asher, T. (2000). Why people stigmatize: Toward a sociofunctional framework. In T. F. Heatherton, R. E. Kleck, M. R. Hebl, & J. G. Hull (Eds.), *The social psychology of stigma* (pp. 31–61). New York: Guilford Press.

Park, J. H., Faulkner, J., & Schaller, M. (2003). Evolved disease-avoidance processes and contemporary anti-social behavior: Prejudicial attitudes and avoidance of people with physical disabilities. *Journal of Nonverbal Behavior, 27,* 65–87.

Park, J. H., Schaller, M., & Crandall, C. S. (in press). Pathogen-avoidance mechanisms and the stigmatization of obese people. *Evolution & Human Behavior.*

Plutchik, R. (1980). *Emotion: A psychoevolutionary synthesis.* New York: Harper & Row.

Plutchik, R. (2003). *Emotions and life: Perspectives from psychology, biology, and evolution.* Washington, DC: American Psychological Association.

Richerson, P., & Boyd, R. (1995, January). *The evolution of human hypersociality.* Paper presented at the Ringberg Castle Symposium on Ideology, Warfare and Indoctrinability.

Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology, 67,* 206–221.

Schaller, M., & Duncan, L. A. (2007). The behavioral immune system: Its evolution and social psychological implications. In J. P. Forgas, M. G. Haselton, & W. von Hippel (Eds.), *Evolution and the social mind: Evolutionary psychology and social cognition* (pp. 293–307). New York: Psychology Press.

Schaller, M., Park, J. H., & Faulkner, J. (2003). Prehistoric dangers and contemporary prejudices. *European Review of Social Psychology, 14,* 105–137.

Schaller, M., Park, J. H., & Mueller, A. (2003). Fear of the dark: Interactive effects of beliefs about danger and ambient darkness on ethnic stereotypes. *Personality and Social Psychology Bulletin, 29,* 637–649.

Simon, H. A. (1967). Motivational and emotional controls of cognition. *Psychological Review, 74,* 29–39.

Tomkins, S. S. (1963). *Affect, imagery, consciousness: Vol. 2. The negative affects.* New York: Springer.

Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology, 11,* 375–424.

Tooby, J., & Cosmides, L. (1996). Friendship and the banker's paradox: Other pathways to the evolution of adaptations for altruism. *Proceedings of the British Academy, 88,* 119–143.