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## **Developing a Comprehensive Social Psychology with Shared Explanations of Primate Social Behavior**

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Two primate social psychologies have developed in recent decades—one that focuses on the social behaviors of humans and the other on nonhuman primates. Despite the gains in knowledge in each field of social psychology, the two research traditions seem to be largely unaware of the other's existence. Our common evolutionary ancestry makes this ignorance about the "other" social psychology especially troublesome for both fields. This article explores possible points of mutual interest that might lead to shared explanations of social behavior. In particular, I discuss how the topics of sexual behavior, cooperation and conflict resolution, and culture could benefit both social psychologies with respect to theory and methodology.

One control group of neonatal monkeys was raised on a single wire mother, and a second control group was raised on a single cloth mother. There were no differences between these two groups in amount of milk ingested or in weight gain. The only difference between the two groups lay in the composition of the feces, the softer stools of the wire-mother infants suggesting psychosomatic involvement. The wire mother is biologically adequate but psychologically inept...A charming lady once heard me describe these experiments and, when I subsequently talked to her, her face brightened with sudden insight: "Now I know what's wrong with me," she said, "I'm just a wire mother." Perhaps she was lucky. She might have been a wire wife. (Harlow, 1958, p. 675)

As a social psychologist who has studied *human* social behavior exclusively in my career, I was naturally curious to learn a few years ago about an undergraduate course titled "Primate Social Psychology," which was being offered at a university where I was employed. I obtained permission from the professor of that course, who is a primatologist, to attend his lectures. As the weeks progressed, I quickly discovered that I knew very little about the social psychology of nonhuman primates, but I was just as surprised to learn how little primatologists appeared to know about the social psychology of humans. In fact, I have come to realize that few scientists in the fields of human social psychology and primate social psychology are familiar with the other's body of knowledge. (For the sake of brevity, I henceforth use "primate" in this paper to designate nonhuman primates.) Of course, an interest in comparative ties between human and primate social behavior, as evidenced by the above quotation from Harlow's (1958) presidential address to the American Psychological Association, has existed for much of psychology's recent history. In this article, I would like to argue for a greater integration of these two very separate literatures. With an increase of knowledge about the "other" literature, we should be able to develop more shared explanations of primate social behavior that depend on both ultimate and proximate causes. Although many of the

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examples in this article will emphasize the potentially rich contributions of the research on the social behavior of primates to the field of human social psychology, which reflects a bias stemming from my own proclivities, the goal of developing a comprehensive social psychology should yield great rewards to both fields—a point about which I will elaborate later in this article.

### **The Two Separate Social Psychologies of Today**

Before discussing how the integration of these two fields might come about, I would like to demonstrate first how deep the gulf between these two social psychologies is. In human social psychology, the *Handbook of Social Psychology* has been published in nearly every decade over the past fifty years. This handbook provides a comprehensive, nearly definitive, review of the field. The latest edition (Gilbert, Fiske, & Lindzey, 1998) is nearly 2000 pages long (divided in two volumes), and includes 37 chapters written by leading researchers on various topics of interests to social psychologists (e.g., small groups, social conflict, aggression, gender). Given the breadth of this handbook, I was surprised that I could find only two citations of research on primates. Therefore, my expectations were lowered when I next surveyed eleven current undergraduate social psychology textbooks. In these texts, ten did not mention any research on nonhuman primate social behavior, and the one exception focused on Harlow's pioneering work in the 1950s on emotional development (e.g., Harlow & Zimmerman, 1958). Finally, assuming that the rapidly growing interest in evolutionary social psychology would surely include consideration of the social behavior of our nearest evolutionary relatives, I examined recent major review articles on evolutionary social psychology (Buss, 1996; Buss & Kenrick, 1998) and texts on evolutionary psychology written or edited by social psychologists (Buss, 1999; Simpson & Kenrick, 1997). Again, there was no mention of primates in the review articles, and hardly any mention of them in the books, with the notable exception of a chapter by Haslam (1997) on "Four Grammars for Primate Social Relations."

The gulf that divides human and primate social psychology is just as great when seen from the other side—primatology. For example, consider de Waal's (1982/1989) detailed account of chimpanzee social behavior, *Chimpanzee Politics*, which had the distinction that Newt Gingrich put it on the required reading list for new members of the U.S. Congress in 1995. Although highly praised and widely read, de Waal cites none of the literature on the social psychology of humans in over 100 references that appear in the bibliography. Similarly, Chadwick-Jones's (1998) *Developing a Social Psychology of Monkeys and Apes* was advertised on the book jacket to be "...of particular interest to primatologists, ethologists, anthropologists, zoologists, social psychologists, and students of social cognition and social interaction." Despite these promising words, with the exception of a discussion of some comparative literature on facial expressions, this book also largely ignores the human social psychology literature.

### **Bringing the Two Social Psychologies Together**

Given the extensive genetic relatedness between humans and other primates, it is troubling that the two social psychologies of today have so little to do

with one another. Researchers in both the human and primate social psychologies ought to benefit from developing, at least *some* shared explanations of (human and nonhuman) primate social behavior. Granted, there are researchers who are knowledgeable about both the human and primate literatures pertaining to their research topic, but this comparative social psychological perspective is certainly not pervasive in human social psychology and is only rarely taught to researchers in either field, as evidenced by recent handbooks and reviews. Given that a more comprehensive social psychology has not yet developed in the past 50 years, it appears that such a synthesis of literatures will not happen without (a) more direct comparative work between humans and other primates, and (b) greater knowledge of the other social psychology's literature by each group of researchers. Several potential points for developing shared explanations exist today, as listed in Table 1. Each of these topics has a considerable literature already developed within the two social psychologies. Space limitations prevent a full discussion of these topics here, but I spend the remainder of this paper briefly discussing three of them—sexual behavior, cooperation and conflict resolution, and culture.

Table 1

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***Potential Points for Developing Shared Explanations***

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Sexual behavior—mate selection, functions of sex  
Deception  
Intragroup and intergroup processes  
Development of selfawareness  
Cooperation  
Bargaining  
Individualistic vs. collective "cultures"  
Psychological mechanisms that underlie culture  
Peacemaking and conflict resolution  
Aggression  
Facial expressions and emotion  
Empathy and altruism  
Social cognition  
Theory of mind

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**Possible Point of Shared Explanations #1: Sexual Behavior**

Within human social psychology, a great deal of attention has been given recently to sexual strategies theory (Buss & Schmitt, 1995), which attempts to account for sex differences in human mate selection. According to this theory, differences between men and women have evolved in the number of short-term sexual partners they seek. Men should devote a larger proportion of their total mating effort to short-term mating compared to women because, due to sexual selection, human males strive to increase their chances of offspring by passing their sperm to as many females as possible. In support of this hypothesis, Buss and Schmitt (1993) found in a survey of young adults a large difference between the number of sexual partners men desired ( $M = 16$ ) and the number of sexual partners women desired ( $M = 4$ ) in the next 30 years of their lives. It is interesting, therefore, to

consider how a primatologist might view this approach. For example, Dixson (1998), a primatologist studying sexual behavior, views humans, compared to other primates, as having a predominantly long-term mating system, which is either monogamous or polygynous. When compared to other primates, the human male's relatively small testicle size and low sperm count, as well as humans' low white cell counts associated with low rates of sexually transmitted diseases, appear to be at odds with sexual strategies theory. As an anonymous reviewer noted, long-term mating is relative. Humans have smaller testicles than chimpanzees, but larger testicles than gorillas, which do not exhibit predominantly long-term mating. In addition, Miller (2000) interpreted research demonstrating that men ejaculate more sperm in response to a partner's absence (Baker & Bellis, 1995) as evidence that humans are only moderately monogamous.

A group of social psychologists (Pedersen et al., 2002), recently reanalyzed the original Buss and Schmitt (1993) findings, but did so from a perspective that considered evidence drawn from samples of other primates (i.e., compared to other primates, humans are relatively monogamous and lack a short-term mating strategy). Using Buss and Schmitt's data set, Pedersen et al. found no sex differences for desired partners when the medians were analyzed rather than the means, which in the case of the males were greatly affected by a few extreme outliers. In fact, the *modal* response for "ideal number of sex partners" was *one* for both men (48%) and women (67%). In a second sample of respondents similar to Buss and Schmitt's, only 1.1% of the males and 0.8% of the females reported that they did not intend to "settle down with" a mutually exclusive sexual partner. Thus, Buss and Schmitt's original hypothesis regarding sex differences in the desired number of sexual partners was at odds with the perspective coming from studies of primate sexual behavior, and the data in fact appear to favor the primatologist's approach.

The point here is not whether sexual strategies theory is right or wrong, but instead that it was originally proposed as a result of solid reasoning based on studies of human social behavior with apparently little consideration of other primates' sexual behaviors. As such, the theory's proponents may have considered relevant evidence incompletely while theorizing. In the realm of sexual behavior generally, this is an area that human social psychologists could potentially benefit a great deal by considering work in primate social psychology. For example, chimpanzees (and other primates) regularly use sex as a commodity for protection and/or coalition building and bonobos frequently exhibit homosexual behavior in their social relations (de Waal, 1989). In contrast, human social psychology is basically mute on both issues, despite a surge in interest in close relationships and sexuality by social psychologists in the past decade. Similarly, the primate literature might benefit from a consideration of some of the variables involved in human mate selection. Although male primates can vary in their physical appearance, little is known about the physical characteristics preferred by females, and more psychological variables such as personality and intelligence are typically ignored by primatologists when they consider other influences (besides status) on mate preference (Miller, 2000).

## **Possible Point of Shared Explanations #2: Cooperation and Conflict Resolution**

Among nonhuman primates, social grooming is ubiquitous. For example, baboon and macaque species spend approximately 15-18% of their day grooming others (Dunbar, 1993). Social grooming is believed by many primatologists to be an important component of affiliation (Cords, 1993). Recently, investigations of primate social behavior have focused on whether grooming behavior can also serve as a commodity—something that can be traded with another for other social purposes. Chimpanzees, in particular, seem to be particularly good at keeping track of whom they have received grooming from, not only in recent hours but across days (de Waal, 1992). Grooming another may mean that the other will be more likely to intervene during a fight (de Waal & Luttrell, 1988). Keeping track of such reciprocal relationships over an extended period of time requires advanced cognitive abilities, which is perhaps why chimpanzees are unique among the nonhuman primates in this respect (Byrne & Whiten, 1988; Haslam, 1997).

Of course, when faced with similar social situations, humans typically follow a norm of reciprocity—a moral code that (a) we should help those who have helped us, and (b) those whom we have helped are expected to help us (Gouldner, 1960). This norm perhaps reflects an evolved “reciprocal altruism,” according to Trivers (1971). Research on reciprocal altruism in humans is perhaps best exemplified by Axelrod’s (1984) work on the repeated prisoner’s dilemma, in which two people participate across several turns in a fictional scenario where they can choose whether or not to implicate their partner in a crime. As a result of testing several possible winning strategies with computer modeling, Axelrod determined that the best strategy, dubbed Tit-for-Tat, was also one of the simplest: Cooperate with the partner the first time and then, on the next turn, do the same thing the partner did on the last turn. Although no study of the Tit-for-Tat strategy with non-human primates has been reported, it is remarkably similar to the reciprocation observed in some species. As Haslam (1997, p. 305) noted, “de Waal (1991) went so far as to ascribe prescriptive rules to chimpanzees, corresponding to rudimentary justice or fairness norms, thereby significantly narrowing the gap between human and primate implementations of reciprocity.”

Among humans, instances of reciprocity, whether immediate or delayed for many years, are pervasive. In some societies, for example, it is considered to be beneficial to raise several children so that they can in turn help their parents in old age. Social dilemmas arise, however, when the needs of individuals begin to conflict with the need of the society as a whole (e.g., if everyone has many children, there will soon not be enough food to go around). When given such social dilemmas, people often “rationally” behave towards a doomed outcome (Kelley & Thibaut, 1978; Komorita & Parks, 1994; Pruitt & Kimmel, 1977; Rapoport & Cham-mah, 1965). For example, in one study (Edney, 1979) a group of students were seated around a bowl of ten metal nuts and were told that they should each accumulate as many nuts as possible. The students were also told, however, that every ten seconds the number of nuts remaining in the bowl would be doubled. Of course, the optimal strategy would be for each participant to wait a long time before taking a nut, but, in fact, 65% of the groups in this study never reached the first ten-second replenishment. Similar sorts of behavior have no doubt led to

many of the problems humans face today, such as freshwater shortages, pollution, destruction of forests, and overfishing. Explanations for what seems to be a uniquely human activity include social psychological concepts such as the fundamental attribution error (i.e., people tend to underestimate the power of the situation when explaining and predicting others' behaviors) and diffusion of responsibility (i.e., in large groups people are more likely to think that others, rather than themselves, are responsible dealing with the problem). Again, it is interesting to note that such explanations rely on advanced cognitive skills, and thus may explain why humans may be unique among the primates in their proclivity to destroy themselves (Diamond, 2003).

Finally, given the extent of the conflict that frequently occurs between individuals and between social groups, human social psychology has had much to say about techniques that are likely to lead to conflict resolution. For example, based on an analysis of international conflicts, Osgood (1962) proposed a strategy to deescalate international tensions called graduated and reciprocated initiatives in tension-reduction, or GRIT. GRIT involves a series of steps that consist of conciliatory acts that one side makes so as to induce the other side to reciprocate. It was formulated by Osgood as a plan to reverse the arms race, and some support, from both in the laboratory and at the international level, has been found for parts of it. Other social psychologists (e.g., Kelman & Cohen, 1976) have emphasized the role of third-party mediation in conflict resolution, and again have developed strategies for resolving conflicts. Therefore, it is interesting that social psychologists generally do not focus on *naturalistic* conflict resolution. That is, they do not tend to describe how humans naturally resolve their disputes, but instead derive logical solutions to conflict resolution that then need to be taught to the parties involved.

In contrast, in the nonhuman primate literature, several studies have been conducted on how apes and monkeys naturally resolve conflicts (cf. Aureli & de Waal, 2000b). For example, chimpanzees will kiss and embrace after fights (de Waal, 1989) and specific gestural, tactile, and vocal signals used in reconciliation have been identified in baboons (Cheney, Seyfarth, & Silk, 1995). Chimpanzees have been also observed consoling losers, which is often performed by third-party chimpanzees (de Waal & van Roosmalen, 1979); consoling losers has been reported for gorillas as well (Watts, 1995), but not for macaques. Chadwick-Jones (1998) has noted that because consolation appears to exist only in apes (and humans), it may reflect emotional and cognitive abilities found in apes but not monkeys. Again, the main point here is to contrast the work of primatologists, who describe the natural ways primates reconcile their conflicts, with the work of social psychologists, who prescribe ways that humans ought to reconcile their conflicts. A synthesis of these two literatures would be fruitful for both fields, and is already moving in that direction with the publication of an edited volume on naturalistic conflict resolution (Aureli & de Waal, 2000a), which includes chapters about both human and animal research on conflict resolution.

### **Possible Point of Shared Explanations #3: "Culture"**

Consider the differences between two macaques species—the rhesus and the stump-tail. In captivity studies, both macaques organize themselves along

dominance hierarchies that are typically matrilineal. Differences between the rhesus and the stumptail appear in the relationships between individual monkeys. Among rhesus monkeys, the hierarchy is emphasized in all relationships with its associated privileges (e.g., escape of harassment by higher ranking members). The individual rhesus monkey's goal is to move up the hierarchy, and once there, to stay on top. In contrast, stumptails appear to emphasize group cohesion. All members will get involved in the reconciliation process between two conflicting monkeys. The individual stumptail monkey's goal is to get along with others by avoiding conflicts.

The differences between rhesus and stumptail "cultures" are similar to the differences that social psychologists have noted between individualistic versus collectivistic (or interdependent) cultures (e.g., Markus & Kitayama, 1991). In individualistic cultures, exemplified by several North American and European countries, individuals are typically expected to have the goal of moving up the social ladder on their own accord. Self is defined by accomplishments achieved as an individual. In collectivistic cultures, exemplified by many Asian countries, individuals are typically expected to work for the common good. Individuals define themselves based on their relationships to others and their organizations. Again, interesting parallels between human and nonhuman primate social behavior exist, yet explicit comparative ties with respect to culture have rarely been made.

In fact, it is illuminating to consider the differences in how the very definition of "culture" is discussed (or not) by human social psychologists and primatological counterparts. It may surprise primatologists to learn that "culture" is taken for granted by social psychologists. That is, as already noted, there has been a growing interest by social psychologists in cross-cultural comparisons. The evolutionary processes involved in the formation of culture, however, are rarely discussed, as is what it is that exactly constitutes a culture. These vague assumptions can lead to the problem of where one culture ends and another begins when making cross-cultural comparisons. For example, Russell (1994) has noted the difficulties in interpreting support of the hypothesis that humans universally recognize a set of basic facial expressions. He argued that most of the "cross-cultural" studies conducted on this problem have employed university students and others as subjects who, despite the residence of their continent, have had extensive contact with western cultures via the mass media. The question arises then whether unique cultures still exist in this modern world, or, put another way, what is "culture" anyway?

Many social psychologists would be surprised to learn that this last question has received a great deal of attention by primatologists, who have been engaged in a debate for several years about whether humans uniquely have culture. Examples of apparent cultural transmission among primates include tool use by chimpanzees who use twigs to get termites or stones in nut cracking (Inoue-Nakamura & Matsuzawa, 1997; Whiten et al., 1999), orangutans building sun covers for nests or, during rain, bunk nests above the nests used for resting (van Schaik et al., 2003), potato washing by Japanese macaques (Kawai, Watanabe, & Mori, 1991), and the propagation of handclasp grooming by chimpanzees (de Waal & Seres, 1997). Each of these examples involved isolated groups that developed a unique pattern of behavior that was transmitted to all members of the group, including their descendants. But do these behavioral patterns constitute a culture?



McGrew (2001), among others, has argued that this is evidence of culture if one considers criteria such as innovation (a new pattern of behavior is invented or modified), dissemination (the pattern is acquired by others in the group), durability (the pattern is performed when the demonstrator is gone), and tradition (the pattern persists from one generation to another). On the other hand, Tomasello (2000), who is a comparative psychologist, has argued that the formation of culture is perhaps uniquely human. Arguing that much of the evidence cited in favor of cultural transmission in chimpanzees may be better described as examples of learning (for a review, see Tomasello, 1994), he posits that humans' ability to recognize the intentions of others is the key ingredient to "culture," and much of human cognition comes from what we learn from our culture. It is interesting that he also gently chides cultural and social psychologists for not paying more attention to the cognitive abilities that allow humans to create culture. As I have already stated, such discussions about what culture is, whether humans uniquely have it, and what are the underlying psychological mechanisms that enable it are topics rarely, if ever, considered by social psychologists, but generate a great deal of discussion among primatologists and comparative psychologists.

### **Conclusions**

In this paper I have only briefly sketched out three areas of possible mutual interest to those who study the social behavior of humans and nonhuman primates. These are just a few examples of points where shared explanations might be developed that could benefit either field. I do believe that developing shared explanations for primate social behavior is possible. Already, some primatologists have begun to recognize that the wall that separates the two social psychologies can be breached, as evidenced by a recent edited volume on how primate social behavior might inform research on the evolution of human social behavior (de Waal, 2001). Such a synthesis should begin by gaining knowledge about what the other side has already learned. Not every social psychologist is going to be fortunate enough to be able to sit in on a lecture by a primatologist and vice versa, but there are several texts and articles that might constitute a common reading list for both fields.

Developing shared explanations of primate social behavior will be theoretically and methodologically fruitful for researchers in both the human and nonhuman primate camps. Theoretical models based on evolutionary models lend themselves particularly well to being tested across human and nonhuman species. Why would humans have developed so many analogous social behaviors, yet have completely different underlying mechanisms and functions? Social psychologists studying humans have not really considered this question. Further, as noted in this article, there undoubtedly will be certain social behaviors that apes but not monkeys can emit, and an understanding of the differing emotional and cognitive abilities that underlie differences in social behaviors should be especially informative. Methodologically speaking, social psychologists probably do not do enough observing of naturalistic behaviors, whereas primatologists have often shied away from experimentation in favor of naturalistic settings. Awareness of, and inclusion of, some of the methods that the other field of primate social psychology employs should again benefit both groups of researchers. I envision a comprehensive pri-

mate social psychology university course being offered in the not-so-distant future, which would be cotaught by researchers of humans and nonhuman primates. When completing that course, a student would have a much better idea of not only what it is that we share with our evolutionary relatives, but also what it is that makes social behavior unique to each primate species.

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