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### **Prosocial Behavior**

Chimpanzees are our closest living relatives, with 96% of our genetic code overlapping with theirs (Varki & Nelson, 2007). This deep genetic similarity produces profound physical similarities—and also behavioral ones. These behavioral similarities are nowhere better illustrated than in the realm of prosocial behavior. Chimpanzees, like humans from hunter-gatherer societies, hunt cooperatively. Like humans, they patrol their territories in groups and engage in coordinated group violence against other groups (Wrangham & Peterson, 1996). Within groups, they form coalitions to defeat individuals too powerful for either of the coalition members to defeat on their own (de Waal, 1982), and males join forces to prevent each others' mates from straying (Silk et al., 2005). Individuals also put effort into reconciling with valuable relationship partners with whom they have recently had conflict (Koski, Koops, & Sterck, 2007), and into comforting valuable relationship partners who have recently been the recipients of other individuals' aggressive behavior (Fraser, Stahl, & Aureli, 2008). In addition, chimpanzees can recognize when they need a partner to obtain a desirable food item, and they know which potential partners are likely to be most helpful to them (Melis, Hare, & Tomasello, 2006). Evidence also suggests that chimpanzees, like humans, will help others gain access to desired items even when they themselves have no opportunity to benefit immediately from a return favor (Warneken, Hare, Melis, Hanus, & Tomasello, 2007; Warneken & Tomasello, 2006).

96% genetic identity seems like a lot, but we can't overlook that 4% uniqueness, which implies approximately 80 million genetic differences between humans and chimpanzees due to base pair differences and nucleotide additions or deletions (Varki & Nelson, 2007). That uniqueness leads to important differences in human and chimpanzee prosocial behavior. For example, chimpanzees show no preference for behaviors that enable others to acquire food when

they themselves are attempting to acquire food (Jensen, Hare, Call, & Tomasello, 2006; Silk et al., 2005), but such behavior is common among humans to the point of banality: If I'm going out to get lunch, I just might offer to pick something up for you. Indeed, the acquisition of behavioral adaptations for food-sharing may have been a watershed for human evolution. Moreover, 12-month old human infants will point at objects to help ignorant individuals locate things they are looking for, and chimpanzees may not possess the requisite social-cognitive abilities for such simple-seeming forms of helping (Hare, Brown, Williamson, & Tomasello, 2002; Liskowski, Carpenter, & Tomasello, 2008). Likewise, even though both humans and chimpanzees help others in some instances, it is humans and not chimpanzees that raise armies for the common defense, seek out training so that they can render more effective emergency aid to others, and endure taxation in order to provide help for the poor and needy.

These are important differences, which may be due to fundamental qualitative differences in evolved cognitive capacities such as delay of gratification (Stevens, Cushman, & Hauser, 2005), the ability to infer other people's mental states from their behavior and to act empathically on the basis of that knowledge (Liskowski, Carpenter, & Tomasello, 2008), or the ability to generate and learn from culture (Richerson & Boyd, 2005). But in any case, there is little doubt that for humans and our closest non-human relatives, natural selection has been at work to create specific capacities for prosocial behavior based on the unique ancestral environments to which human minds are adapted (Cosmides & Tooby, 2005; Simpson & Beckes, in press). Of course, biologists have identified many other examples of prosocial behavior in non-human animals, such as blood-sharing among vampire bats (Wilkinson, 1984), the strict divisions of reproductive labor in the eusocial insects (Wilson & Wilson, 2007).

In this chapter, we will explore some of the more interesting features of humans' tendencies to engage in helping, sharing, and cooperating—that is, the behaviors collectively known as “prosocial behaviors” (Penner, Dovidio, Piliavin, & Schroeder, 2005). We will describe the classic concerns of social psychology, but also, some of the more important recent theoretical and empirical advances, beginning with the evolutionary models that are sometimes invoked to explain humans' signature set of prosocial tendencies.

### **Evolutionary Models of Prosocial Behavior**

Evolutionary researchers try to describe the body's (brain/mind included) present structures by searching for the functions those structures evolved to serve in the past: Their project is usually (although not always; Andrews, Gangestad, & Matthews, 2002) an adaptationist one (Tooby & Cosmides, 2005). Adaptationism relies on the fact that individual *organisms* within a population that vary on a trait due to genotypic diversity can incur differing rates of genetic propagation (i.e., *fitness*) if some variants of the *trait* (and therefore, the genes that contribute to their assembly during development) cause higher rates of reproduction than do others because of their ability to cause organisms to respond to specific adaptive challenges effectively. Because of these phenotype-dependent differences in fitness, small incremental changes in the genes that collectively give rise to the body's mechanisms (e.g., the heart, the fingernails, the brain's reward circuitry) that enhance the fitness of the bearer of those genes can gradually shape the species-typical structure of those mechanisms.

Because of natural selection's relentless favoritism for genes that enhance their bearers' fitness, prosocial behavior has been an evolutionary puzzle since Darwin (1952): Incurring costs (even small costs in the currencies of money, time, or energy should redound to fitness) that benefit *someone else's* fitness (e.g., when someone saves a drowning child or donates blood for

someone whom he or she will never meet) looks at first glance like bad evolutionary bookkeeping. Nevertheless, several evolutionary processes have been identified that can help to explain the evolution of mental mechanisms for prosocial behavior in humans (McAndrew, 2002; Nowak, 2006; Wilson & Wilson, 2007). Here, we focus on the models that have (we think) the greatest potential to inform social psychology: kin altruism, direct reciprocity, indirect reciprocity, signaling, and multilevel selection. What makes these theories useful to social psychology, we think, is that they imply that the mind possesses specific functional systems that were designed by natural selection for their efficacy in producing certain types of prosocial behavior. If we understand the selection pressures, then we can formulate hypotheses about the operation of the psychological systems that arose to help individuals respond adaptively to those pressures and the social factors that activate and condition the operation of those systems.

### *Kin Altruism*

Humans regularly endure tremendous energetic costs (e.g., gestation, nursing, feeding, sheltering, clothing, paying for college) to help their offspring and other genetic relatives. The theory of kin altruism tries to explain such behaviors by exploiting the fact that one's fitness is not solely a function of the number of one's offspring who survive to reproductive maturity, but rather, a function of the number of offspring one has, plus the numbers of offspring that one's genetic relatives have (Hamilton, 1964). The theory of kin altruism specifies that certain forms of prosocial behavior that are beneficial to the recipient and costly to the helper can evolve when the benefit  $B$  to the individual being helped is greater than the cost  $C$  to the helper, discounted by a coefficient of relatedness  $r$  between the helper and the individual being helped (with  $r = 1.0$  being the degree of relatedness between identical twins,  $r = .5$  between first degree-relatives,  $r = .25$  between grandparents and their grandchildren, or uncles and aunts and their nieces and

nephews, and so on; Hamilton, 1964), which is equivalent to the likelihood that the recipient also possesses the helper's "altruism gene." That is, specific forms of kin altruism are evolutionarily plausible when  $C < rB$ . Hamilton's (1964) rule is valid because when it is true, the value to the helper's inclusive fitness of rendering a benefit to the person in need is larger than the fitness cost the helper incurs by providing the benefit.

In support of Hamilton's (1964) model, people report more willingness to provide help (particularly, biologically costly help) to closely related genetic relatives than to more distant ones (Bressan, 2009; Burnstein, Crandall, & Kitayama, 1994; Korchmaros & Kenny, 2001; Lieberman, Tooby, & Cosmides, 2007; Stewart-Williams, 2007). Estimates of migrant workers' remittances to their families back at home based on two factors—(a) the fitness costs the worker incurs by sending money back home, and (b) the fitness benefits the worker receives via the enhanced fitness of the relatives who benefit from the remittance—account for roughly one-third of the variance in the amounts that those workers actually send home (Bowles & Posel, 2005).

If humans' penchant for prosocial behavior really did evolve in part via kin altruism, then the selection pressure for kin altruism should have left its imprint on the mind's cognitive architecture: If ancestral humans had been unable to reliably identify their genetic relatives, then their prosocial behavior could not have produced beneficial fitness consequences for them via Hamilton's (1964) rule. Lieberman, Tooby, and Cosmides (2007) outlined the workings of a hypothesized "kinship estimator" that computes the likely degree of relatedness between a potential beneficiary and the benefactor. Among siblings, the kinship estimator appears to use two ancestrally reliable cues: (a) the degree of "maternal perinatal association" (i.e., the amount of time that the individual was in a long-term perinatal relationship with one's own mother) and the degree of sibling co-residence (i.e., the amount of time that the two individuals lived together

during childhood). When these cues imply a high degree of relatedness, the benefactor is more likely to help a person in need (Lieberman et al., 2007). The challenge of identifying one's kin only seems trivial here, by the way, because we are thinking here about humans—a species with which we all feel like experts rather than, say, lemurs (Charpentier, Boulet, & Drea, 2008).

The mind should also be sensitive to cues about the remaining reproductive potential of the potential beneficiaries of kin altruism, since it is in part through a relative's future reproductive potential that it becomes self-serving for people to provide costly help to genetic relatives (Bowles & Posel, 2005). Burnstein et al. (1994) found that Japanese and American participants were most likely to provide costly help (e.g., saving someone from a fire) to relatives who were healthy (i.e., with greater potential for future reproduction) than to relatives who were not healthy (and thus whose future reproductive potential might have been more limited).

### *Direct Reciprocity*

Direct reciprocity is a pattern of prosocial behavior in which an individual provides a benefit to another individual at some cost to the self because there is a likelihood greater than zero that the individual who receives the help will be in a position to help the benefactor at a later point in time (Nowak, 2006). Trivers (1971) first coined the term *reciprocal altruism* to describe this form of interaction, and demonstrated mathematically that under some conditions, behavioral systems for reciprocal altruism could evolve in social species.

A widely used paradigm for research on reciprocal altruism is the prisoner's dilemma (Rapoport & Chammah, 1965), in which two participants are presented with a binary choice: either cooperate with one's partner or defect against one's partner. The outcomes of this decision are dependent on the choice of one's partner. If both partners cooperate, they receive a moderate reward (the so-called "reward for mutual cooperation"). If both partners defect, both earn a small

payoff called the “punishment for mutual defection.” If one individual defects while the other cooperates, the defector receives a large boon called the “temptation to defect,” and the cooperator receives the smallest payoff—the “sucker’s payoff.” The prisoner’s dilemma is a dilemma because the economically optimal course of action cannot be decided without knowing how one’s partner will choose. Nevertheless, economists have concluded that unconditional defection is the rational course of action because it provides the best outcomes to individuals both when one’s partner defects and when one’s partner cooperates: Defection in this one-shot prisoner’s dilemma is a Nash equilibrium (Poundstone, 1992) because one has no incentive to switch from this strategy irrespective of one’s partner’s choice.

The prisoner’s dilemma becomes more interesting when the two individuals play multiple rounds of the game rather than a one-shot game, which allows them to make choices based on their partners’ behavior in previous rounds. In a landmark study in which players from around the world submitted computer programs that would execute strategies for playing this so-called iterated prisoner’s dilemma, Axelrod (1980) sought to determine which strategies would score the most points against all of the other strategies that were submitted.

A simple strategy called “tit-for-tat” emerged victorious. Tit for tat begins an iterated game with a cooperative move. If the partner cooperates as well, then tit for tat continues to cooperate. If the partner defects on a given round, however, tit for tat will defect on the successive round. If the defecting player ever returns to cooperating, then tit-for-tat will also return to cooperating on the next round. Tit-for-tat has several characteristics that make it effective in iterated games: (a) it is “nice” (i.e., it begins by cooperating); (b) retaliatory (it responds to defection with defection); (c) forgiving (i.e., when a defecting partner returns to cooperation, it returns to cooperation as well; and (d) clear (i.e., its decisions are honest and easy



to understand). It does well in iterated games with a wide variety of strategies not by dominating them, but by racking up relatively high tie scores in games with other opponents that are disposed to cooperate and by preventing more selfish strategies from getting the best of itself.

Axelrod and Hamilton (1981) demonstrated that the iterated prisoner's dilemma provides a game-theoretic model for the evolution of Trivers's (1971) reciprocal altruism. Nowak (2006) showed further that direct reciprocity (as modeled in the prisoner's dilemma) can favor the evolution of cooperation in social species when the probability of a successive round of interaction between two interactants exceeds the ratio of the costs of the altruistic act to the benefactor divided by the value of the benefit to the recipient. The fact that much, if not most, of human social life (especially the social life of small groups of hunter-gatherers and, by extension, our ancestors) is constituted not of single one-shot games but rather than iterated games, may explain why people in (as far as we know) every society studied to date tend to be considerably more generous and prosocial in economic games like the prisoner's dilemma than standard economic theories for the one-shot prisoner's dilemma predict (Henrich et al., 2005; E. Hoffman, McCabe, & Smith, 1998; Simpson & Beckes, in press).

Just as evolutionary psychologists interested in social behavior have deduced that the mind possesses specialized cognitive systems for computing kinship (Lieberman, Tooby, & Cosmides, 2007), they also have deduced that the mind possesses specialized cognitive machinery for detecting individuals who might cheat in the sorts of social contracts (i.e., "If you'll help me now, I'll help you later") that the prisoner's dilemma attempts to model (Cosmides, 1989; Cosmides & Tooby, 2005). Using a variant of the Wason Selection task (which illustrates that people are not very good at marshaling the right kinds of evidence to test the validity of logical statements of the form if  $P$ , then  $Q$ ) Cosmides and Tooby (2005) have

shown that people are much more accurate at testing evidence to determine whether particular individuals have cheated on a social contract. People's relatively good skill with detecting cheaters is as true of American undergraduates as it is of people from the Shiwiar, a remote society of hunter/horticulturalists in Amazonian Ecuador (Sugiyama, Tooby, & Cosmides, 2002).

Others researchers have proposed that gratitude might be part of the evolved psychological system that governs reciprocal altruism (McCullough, Kilpatrick, Emmons, & Larson, 2001; McCullough, Kimeldorf, & Cohen, 2008; Trivers, 1971). Gratitude is a reliable emotional response to receiving help from another person that was valuable to the self, costly to the donor, and intentionally rendered (Tesser, Gatewood, & Driver, 1968; Tsang, 2007). The experience of gratitude leads to reciprocation (Bartlett & DeSteno, 2006; Tsang, 2006) and strengthens relationships between benefactors and beneficiaries (Algoe, Haidt, & Gable, 2008).

Forgiveness may also be an important component of the evolved psychological apparatus that facilitates reciprocal altruism, and perhaps also kin altruism as well (McCullough, 2008; McCullough, Kurzban, & Tabak, In press). In the context of reciprocal altruism in particular, responding to defections by occasionally forgiving them rather than retaliating can help to preserve cooperation when there is a possibility that individuals might make mistakes in implementing their prosocial intentions, or might mistake their partners' prosocial intentions for selfish ones (Van Lange, Ouwerkerk, & Tazelaar, 2002). People who forgive their relationship partners for interpersonal transgressions experience greater restorations of positive relations (Karremans & Van Lange, 2004; Tsang, McCullough, & Fincham, 2006) and elicit prosocial behavior from partners who have transgressed (Kelln & Ellard, 1999; Wallace, Exline, & Baumeister, 2008). In support of the contention that the capacity to forgive was naturally selected on the basis of selection pressure for the maintenance of valuable relationships, people

are more forgiving of relationships in which transgressor and victim are close and committed (Finkel, Rusbult, Kumashiro, & Hannon, 2002; McCullough et al., 1998) and in which transgressors have communicated (e.g., through apologies or other expressions of remorse) their inability or unwillingness to harm the victim in the future (McCullough, Worthington, & Rachal, 1997), though these effects are more difficult to demonstrate experimentally between strangers in laboratory settings (Lount, Zhong, & Murnighan, 2008; Risen & Gilovich, 2007).

At the neural level, mutual cooperation during prisoner's dilemmas is supported by brain regions involved in motivating the pursuit of reward (e.g., nucleus accumbens, caudate nucleus, ventromedial frontal/orbitofrontal cortex, and rostral anterior cingulate cortex; Rilling et al., 2002; Rilling, Sanfey, Aronson, Nystrom, & Cohen, 2004), and is partially dependent on adequate levels of serotonin (Wood, Rilling, Sanfey, Bhagwagar, & Rogers, 2006).

Social psychologists have identified a variety of other factors that influence cooperation in prisoner's dilemma-type situations. For example, the ability to communicate (and therefore, coordinate) with an interaction partner fosters cooperation in prisoner's dilemma-like contexts (Kiesler, Sproull, & Waters, 1996; Steinfatt, 1973), especially in situations in which it is possible for people to make mistakes in implementing their prosocial intentions (Tazelaar, Van Lange, & Ouwerkerk, 2004). In addition, people cooperate more with ingroup members than with outgroup members when sharing limited resources (Van Vugt, Snyder, Tyler, & Biel, 2000), perhaps because ingroup members are seen as more trusting than outgroup members (Turner, Oakes, Reicher, & Wetherell, 1987).

### *Indirect Reciprocity*

The evolution of direct reciprocity requires that the individuals who are taking turns helping each other have a relatively high probability of future interactions, but there is a kind of

prosocial behavior that can evolve even when the benefactor and beneficiary have zero likelihood of meeting again. *Indirect reciprocity* occurs when a benefactor acquires a good reputation because of giving help to someone in need, which causes a third individual to help the benefactor in the future (Nowak, 2006). Experimental evidence shows that people tend to help, donate, or cooperate with others more frequently who have reputations for having been helpful or cooperative with others in the past (Seinen & Schram, 2006; Wedekind & Milinski, 2000).

According to Nowak (2006), when the probability  $q$  of knowing an individual's history of helpfulness toward others exceeds the ratio of the costliness of an act of helping relative to its benefit to the recipient ( $c/b$ ), natural selection favors the evolution of mechanisms to promote indirect reciprocity (Nowak, 2006). Indirect reciprocity seems like a very important candidate for explaining prosocial behavior in a species such as humans, whose languages are replete with personality descriptors for conveying information about other people's generosity and stinginess. Moreover, evidence suggests that people are indeed more prosocial when their partners are given the ability to spread information to others about their generosity and selfishness (Piazza & Bering, 2008; Sommerfeld, Krambeck, Semmann, & Milinski, 2007). This potential function of gossip fits much of what is known about the distributions and content of gossip (Baumeister, Zhang, & Vohs, 2004; Dunbar, 2004), as well as with one theory of the selection pressures that gave rise to the evolution of language in humans (Dunbar, 1996, , 2003).

### *Signaling Theory*

Signaling theory seeks to explain the evolution of prosocial behavior by virtue of its ability to convey information to others about a benefactor's hidden (i.e., genotypic) qualities (McAndrew, 2002), such as his or her intelligence, physical strength, resourcefulness, mate value, or value as a coalition member (Gintis, Smith, & Bowles, 2001; E. A. Smith & Bleige

Bird, 2001). A differential preference for associating with individuals who have signaled such hidden traits might provide benefits to benefactors that offset the costs of the generous behavior itself. In a signaling account of prosocial behavior, signalers receive fitness benefits from sending information, and receivers benefit from decoding it and using it, and have evolved psychological systems that are dedicated to these purposes (Maynard Smith & Harper, 2003).

In support of signaling models of prosocial behavior, Iredale, Van Vugt, and Dunbar (2008) found that men were more generous in donating their earnings from a laboratory task to charity when a female observer was present than when a male observer or no observer was present, which led the researchers to propose that generosity in such contexts might result from a system design to advertise an otherwise hidden psychological quality (e.g., empathy or willingness to share), that was relevant to their mate value. Likewise, people are more cooperative with attractive than unattractive members of the opposite sex, and such cooperative behaviors makes cooperators seem particularly attractive (Farrelly, Lazarus, & Roberts, 2007).

#### *Group (Or Multilevel) Selection Theory*

Another evolutionary model that has influenced recent research on prosocial behavior is the theory of group selection, increasingly known as “multilevel selection theory.” For the first 60 years of the 20<sup>th</sup> century, many biologists assumed that natural selection took place at the level of both individuals and groups, but with the publication of Williams’s (1966) *Adaptation and Natural Selection*, the concept of group selection became anathema to evolutionary biologists on the grounds that, even if theoretically plausible, the assumptions governing its tenability were so restrictive as to make it ignorable in practice.

The assumptions of group selection have been revisited in recent years (Wilson & Wilson, 2007), and Williams himself (1992) went on to soften his position on the ignorability of

group selection as an evolutionary force. Wilson and Wilson (2007) summarized the foundational claim of multilevel selection in this way: “Selfishness beats altruism within groups. Altruistic groups beat selfish groups.” (p. 345). In the same way that individual-selection models of altruism posit that fitness benefits redound to individuals with prosocial phenotypes as a result of their prosocial behavior, group-selection or multilevel selection models posit that some fitness benefit redounds to *groups* with high levels of prosocial behavior relative to other groups. As a result, groups with higher levels of prosocial behavior will become more common whereas groups with lower levels of prosocial behavior will become less common.

Nowak (2006) explained that the mathematical feasibility of group-selection models of prosocial behavior require more restrictive assumptions than other models do (for example, one must assume that as soon as a group reaches a certain size, it splits in two and one of the two resultant groups replaces another group within a population, with the consequence that the number of groups within a population remains constant). Although critical tests of the utility of multilevel (or group selection) theory for explaining the evolution of prosocial behavior in humans are difficult to specify, group-selection accounts of altruism require that altruists (a) can identify each other; (b) tend to preferentially associate with each other, and (c) outcompete groups of non-altruists. These requirements appear to be fulfilled in social relations among children and adults (Gürerk, Irlenbusch, & Rockenbach, 2006; Pradel, Euler, & Fetchenhauer, 2009; Sheldon, Sheldon, & Osbaldiston, 2000).

### **Intermezzo on the Current Difficulty of Reconciling Functionalist and Non-Functionalist Accounts of Prosocial Behavior**

Research on prosocial behavior has a long history that predates psychologists’ more recent interests in applying evolutionary concepts to prosocial behavior. It can be jarring to move

from the tight selectionist and functionalist logic of evolutionarily informed research on prosocial behavior to the language and theoretical constructs that have historically driven social-psychological research on prosocial behavior, so readers should prepare for an abrupt transition to a rather different approach to the social psychology of prosocial behavior. Terminology is also used quite differently. For example, what biologists mean by *altruism* is utterly different from how that term is used in the mainstream social psychology literature.

It would be nice to see some reconciliation between these two approaches to studying prosocial behavior, but the difficulty of doing so is compounded by the fact that the research fields that have an interest in the evolution of prosocial behavior (which includes economics, anthropology, ecology, and evolutionary biology) have themselves not reached consensus on many basic issues. For example, there is no consensus how specific forms of prosocial behavior should be named and defined, how carefully the costs and benefits to interactants should be specified, the extent to which short-term benefits can be taken as proxies for lifetime fitness, and even the extent to which prosocial behaviors should be defined as such only if they evolved in response to specific selection pressures (S. A. West, Griffin, & Gardner, 2006). To wit, an elephant's production of dung (which dung beetles can then use to their great benefit), should qualify as prosocial behavior unless prosocial behavior is defined at the outset as referring to the outputs of behavioral systems that evolved to deliver benefits to others (S. A. West, Griffin, & Gardner, 2006). One can hardly criticize social psychologists for failing to make more incisive contributions to the interdisciplinary science of prosocial behavior when those more evolutionarily minded disciplines do not have their own conceptual house in order. We will not solve these issues here, but we will point out some places where more conceptual clarity might help social psychology increase its impact on the interdisciplinary science of prosocial behavior.

### **Reciprocity and Fairness: Two Norms for Prosocial Behavior**

One cannot get far in the history of research on the social psychology of prosocial behavior without encountering the concept of norms. Norms refer to written or unwritten rules for appropriate behavior that people tend to learn through social rewards, social punishment, and modeling (Batson, 1998; Gürerk, Irlenbusch, & Rockenbach, 2006; Weber & Murnighan, 2008), and they are regularly enforced in hunter-gatherer groups whose lives closely resemble those of ancestral humans (Boehm, 2008). Social psychologists have concentrated on two norms that help to explain many of the prosocial behaviors that are favored and for which violations are regularly punished cross-culturally: the norm of reciprocity and the norm of fairness.

#### *The Norm of Reciprocity*

The norm of reciprocity is the obligation to benefit (and refrain from harming) people from whom one has received benefits in the past (Gouldner, 1960). There is also a norm of negative reciprocity, thought to be equally universal and equally influential in moral behavior, that compels people to return harm for harm (Eisenberger, Lynch, Aselage, & Rohdieck, 2004). Reciprocity norms are thought to be cross-culturally universal features of humans' moral sensibilities (D. E. Brown, 1991; Triandis, 1978), and may reflect how the evolved psychological processes that govern effective reciprocal altruism (Axelrod, 1984) give rise to culture.

In an early study of the role of the reciprocity norm, Pruitt (1968) showed that the amount of helping that people reciprocate in laboratory situations is (a) a direct function of the amount they had previously been given; (b) an inverse function of the total amount of resources the benefactor had to give; and (c) a direct function of how much resources the benefactor would have to give in the future. These findings suggest that people are motivated to provide benefits in



order to repay debts—in particular, especially generous ones—and also to maintain their standing as good candidates as future exchange.

### *The Norm of Fairness*

The norm of fairness also reflects a deep human aversion to unequal treatment. As Tabibnia, Satupute, and Liberman (2008) wrote, “anyone who has watched children negotiate how to share a piece of cake knows that humans are exquisitely sensitive to fairness” (p. 339). But even capuchin monkeys are sensitive to fairness. Brosnan and de Waal (2003) trained capuchin monkeys to exchange tokens for food, and they showed that after monkeys who had been trained to exchange tokens for pieces of cucumber witnessed another monkey who were able to trade tokens for grapes (a more highly valued food item) the monkeys either (a) refused to continue trading tokens; or (b) rejected the cucumber pieces completely. Likewise, people are much less cooperative in iterated prisoner’s dilemmas when their partners systematically receive better payoffs than they do (Sheposh & Gallo, 1973). Anger and resentment are associated with feeling underbenefited (Hassebrauck, 1986), as is increased disapproval of the overbenefited partner (Sheposh & Gallo, 1973). Conversely, enhancing people’s confidence that a public good will be distributed fairly among contributors increases contributions (Eek & Anders, 2003).

According to equity theory (Walster, Berscheid, & Walster, 1973; Walster, Walster, & Berscheid, 1978), people are motivated to preserve equity, which these theorists define as a state in which the ratio of outcomes to inputs is equal for all of the individuals involved in a relationship. A prediction from equity theory about Brosnan and de Waal’s (2003) capuchin monkeys trading tokens for money is that the monkey receiving cucumber (the worse outcome) instead of grapes (the better outcome) could potentially be satisfied with that arrangement if the experimenters reduced the number of tokens that he needed to trade per unit of cucumber so that

the two monkeys' ratios of outcomes (value received) to inputs (number of tokens traded) were equal. Things can be equitable even if they aren't identical.

When people's cost/benefit ratios become markedly lower than those of their partners, people often feel guilty (Austin, McGinn, & Susmilch, 1980), and become motivated to reduce the inequity. One prosocial thing a partner who is feeling over-benefited might do to reduce inequity is to try to help his or her partner to increase his or her benefits or reduce his or her inputs. They might also engage in indirect prosocial behavior. Wayment (2004), for example, found that people who reported higher levels of survivor guilt and grief following the September 11<sup>th</sup> terrorist attacks engaged in collective helping more so than people who reported less survivor guilt and grief. Relatedly, Berscheid and Walster (1967) showed that people are motivated to provide benefits to people they have inadvertently harmed in proportion to the amount of harm done. The motivation to maintain equity is so strong, equity theorists argue, that when an over-benefited partner cannot act directly to reduce inequity, he or she might blame an under-benefited partner for their situations to reduce perceived inequity (Lerner & Simmons, 1966). Conversely, people who feel under-benefited in a social arrangement relative to their inputs may respond to the perceived inequity in many ways, including reducing their effort, trying to re-negotiate a better deal, or exiting the relationship and trying to find a new one.

Equity theory has been modified substantially since its initial formulation and has well-known limitations. For example, the motivation to maintain equity is less salient in relationships with high degrees of interpersonal commitment and self-other overlap, and in relationships for which partners have poor alternatives (Buunk & Bakker, 1997; Medvene, Teal, & Slavich, 2000; Rusbult, 1980, , 1983). Nevertheless, equity retains *some* degree of importance even in highly committed relationships (Sprecher, 2001), especially when partners have an exchange orientation

to the relationship or to relationships in general (Buunk & Van Yperen, 1991). It is also clear that people differ in the extent to which they are oriented toward a communal view of relationships (Clark, Ouellette, Powell, & Milberg, 1987), and these individual differences should be considered as important moderators of people's responses to inequity. Recently, Tabibnia, Satpute & Lieberman (2008) made some progress in identifying brain regions that support calculations of fairness and unfairness in social exchange (viz., areas involved in reward computation and emotion regulation).

### **Motives for Prosocial Behavior**

Social psychologists often study prosocial behavior by examining the motives that stimulate it. One of the biggest distinctions is between prosocial behavior that is motivated by so-called egoistic concerns, and those that are motivated by so-called altruistic concerns (and it is here we see the term "altruism" used very differently from its usage in biology). Batson, Ahmad, Powell, and Stocks (2008) described three types of egoistic motivations for prosocial behavior: (a) the motivation to receive material, social, and self-administered rewards (such as payment, gifts, credit for future helping from one's reciprocal altruism partners, enhanced self-esteem, or imagined religious rewards); (b) the motivation to avoid material, social, and self-administered punishments (e.g., fines/imprisonment, attacks, social sanctions for violating norms, or shame); and (c) the motivation to reduce aversive arousal (including distress associated with witnessing other people's pain and suffering).

Rather than assuming that every instance of helping has at its root an egoistic motivation, theorists from the altruistic tradition hypothesize instead that "at least some of us, to some degree, under some circumstances, help with an ultimate goal of benefiting the person in need" (Batson, Ahmad, & Lishner, 2009, p. 417). (Evolutionarily minded readers will notice too the

very different way in which the concept of “ultimate” is used in this quotation. Evolutionary thinkers would typically look for the “ultimate” causes of prosocial behavior in the selectionist models we enumerated earlier—all of which, ultimately, turn on the fact that evolved mechanisms for prosocial behavior can only have evolved because their ultimate cause was that they increased the fitness of their bearer, on average, during evolution.) The number of egoistic models for prosocial motivation that have been advanced over the years is quite overwhelming, so here we limit ourselves to describing two of the more influential ones, plus an altruistic alternative and some of the critiques that have been leveled against it.

*The negative state relief model.* Cialdini, Darby, & Vincent (1973) proposed a negative state relief model that specifies that people help others to reduce their own negative distress by experiencing countervailing positive emotions that come from successfully helping someone in need. There is considerable evidence that, under certain conditions, helping can improve one’s mood (Gebauer, Riketta, Broemer, & Maio, 2008; Midlarsky, 1991; Williamson & Clark, 1989). Several studies have also shown that inducing positive affect increases helping behaviors (Carlson, Charlin, & Miller, 1988), perhaps because people want to protect their good moods from being spoiled by someone else’s suffering (Batson, Ahmad, Powell, & Stocks, 2008).

*The arousal: cost-reward model.* Piliavin and colleagues (J. F. Dovidio, Piliavin, Gaertner, Schroeder, & Clark, 1991; Piliavin, Dovidio, Gaertner, & Clark, 1981) developed the arousal: cost-reward theory to explain when people are likely to help in emergency situations. Whereas the negative state relief model involves helping to enhance one’s positive mood, arousal: cost-reward theory conceptualizes emergency helping as the result of a motivation to eliminate the negative affect associated with witnessing someone’s physical distress.

The arousal: cost-reward theory specifies three conditions under which emergency assistance should be most likely. First, the more arousal people feel in an emergency situation, the more likely they will be to provide help (J. F. Dovidio, 1984; Gaertner & Dovidio, 1977), although it is important to note that in many of the studies measuring arousal and helping, the measured arousal that is representative of helping behavior may be confounded with the motor activity associated with the helping response itself (Batson, 1998). Second, people will be more likely to help when the victim and the helper share similarities, common group identities, or feelings of relatedness or closeness: Krebs (1975) proposed that people may be more aroused by those with whom they feel connected, which should increase helping behavior. Third, the model specifies that emergency helping will be more likely when the costs of doing so are low relative to the hedonic rewards that will come from helping. When the costs of helping become too high—for example, if the person in need is bleeding and the helper may have to come in contact with the blood (Piliavin & Piliavin, 1972), or when their levels of arousal are heightened by the fact that the person in need is of a different race than they are (Kunstman & Plant, 2008) people may choose other methods for reducing their negative arousal (e.g., trying to ignore the person's plight or leaving the scene (J. F. Dovidio, Piliavin, Gaertner, Schroeder, & Clark, 1991).

*The empathy-altruism hypothesis.* Batson and colleagues have repeatedly tested the hypothesis that there exists in human nature an “altruistic motivation” for helping that is reliably elicited by empathy for the person in need. Batson et al. (2009) define empathy as “an other-oriented emotional response elicited by and congruent with the perceived welfare of someone else.” (p. 418). Empathy for another person can be enhanced by observing or imagining the person's affective state (de Vignemont & Singer, 2006), by sharing emotions, feelings or sensations (Preston & de Waal, 2002), by valuing another person's welfare (Batson, Eklund,

Chermok, Hoyt, & Ortiz, 2007; Batson, Turk, Shaw, & Klein, 1995), and by recognition of kinship, similarity, or closeness (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). In the laboratory, empathy for complete strangers is elicited most commonly (and with the least apparent risk of confounding with other processes) through a two-step process: first, exposing a participant to someone else's need; and second, instructing the participant to imagine how the person in need is feeling (Batson, 1991; Batson, Turk, Shaw, & Klein, 1995). At the neural level the experience of empathy for someone in distress is supported by some of the same brain regions that are involved in the production of distress that people experience themselves when experiencing pain or discomfort (e.g., bilateral anterior insula and rostral anterior cingulate cortex; Singer et al., 2004).

Empathy reliably elicits helping (Coke, Batson, & McDavis, 1978), but this fact does not imply that the motivation underlying empathy-induced helping is to improve the welfare of the person in need: The underlying goal could be, for example, reducing one's own empathic arousal, or avoiding social or self-imposed punishments associated with failing to help, or gaining social or self-approval.

Batson and colleagues (and their detractors) have conducted more than 30 experiments to evaluate these motivations over the past several decades. In one of the earliest studies (Batson, Duncan, Ackerman, Buckley, & Birch, 1981), they induced empathy in participants by telling half of the sample that they had similar values and interests to a confederate named Elaine, who would be receiving random electric shocks as part of the experimental procedure. Before the study began, Elaine and the experimenter had a conversation (that they intended for the participant to overhear) in which Elaine described her apprehension about receiving the shocks

due to a traumatic event that she had experienced in the past. After two trials participants were then asked if they would be willing to trade places with Elaine to help her avoid more suffering.

To test an egoistic explanation derived from negative state relief theory, the researchers manipulated how difficult it was for the participants to escape the situation (easy escape = ability to finish the study after the first 2 trials; difficult escape = unable to leave until all 10 trials were completed). Participants in the low-empathy group were more likely to opt out when doing so was easy; however, when it was difficult, half of them agreed to trade places with Elaine. In support of the empathy-altruism hypothesis, the vast majority of those in the high-empathy group agreed to trade places with Elaine irrespective of whether it was easy for them to escape.

Other experiments using perspective-taking manipulations of empathy (for review see Batson, 1991) have likewise demonstrated that inducing empathy causes people to help even when escape is easy, which suggests that participants are only able to accomplish their empathically induced goal by helping the participant (rather than by escaping the situation). These results cast doubt on the tenability of the hypothesis that the motivation underlying empathically induced helping is the escape of aversive arousal (Batson, Ahmad, Powell, & Stocks, 2008). Batson et al. (2009) likewise concluded that experiments testing the possibility that empathy-induced helping was motivated by the goal of avoiding social or self-administered punishments for failing to help have consistently supported the empathy-altruism hypothesis.

Research on the possibility that empathically induced helping has as its goal the rewards (either self-administered or from other people) associated with helping someone else has been a bit more controversial, with some researchers claiming confirmation (Cialdini et al., 1987; Schaller & Cialdini, 1988; K. D. Smith, Keating, & Stotland, 1989), and others claiming refutation based on methodological limitations in the studies that supposedly supported the

egoistic alternative, along with experimental data that surmount those methodological limitations (Batson et al., 1991; Batson et al., 1988; J. F. Dovidio, Allen, & Schroeder, 1990; Schroeder, Dovidio, Sibicky, Matthews, & Allen, 1988). Nevertheless, even Cialdini and colleagues (1997) have acknowledged that the argument for the existence of an altruistic motivation in human nature “does appear to have won the war in important respects.” (p. 482).

### **Who Provides Help?**

Some people are more prosocial than others. Some stop at the scene of accidents to try and render first aid, or donate to charities, or volunteer in their communities. Others don't. Researchers have tried to explain these individual differences in terms of (a) prosocial personality traits; (b) sex differences; and (c) genetic and neuroendocrine factors.

#### *Prosocial Personality Traits*

Research has demonstrated that individual differences in trait empathy are associated with individual differences in prosocial behaviors (Davis et al., 1999) and that empathy and other prosocial traits are stable over time (Eisenberg et al., 2002). Based on findings such as these, Penner, Frisvold, Craig, and Freifeld (1995) proposed that the prosocial personality consists primarily of a small suite of personality traits, including (a) a sense of responsibility (b) empathy, and (c) the self-perception that one is capable of being helpful. In addition, believing in a “just world” (Furnham, 2003)—that is, the idea that people ultimately get what they deserve—may influence prosociality. People who believe in a just world may help others when they believe that the person deserves their help (Zuckerman, 1975)—though they may be less likely to help people whose plights they perceive to be largely self-created (Lerner, 1970, , 1980).

Bierhoff, Klein, and Kramp's (1991) study illustrates some of these points. They studied the personality differences between a group of 34 people who had stopped to render aid at traffic



accidents and a group of 36 other people (matched on age, sex, and socioeconomic status) who had witnessed similar accidents but had not stopped to help. Helpers described themselves as having more internal loci of control, stronger beliefs in a just world, and higher empathy.

Similarly, Oliner and Oliner (1988) and Fagin-Jones and Midlarsky (2007) found that non-Jews who had aided or rescued Jews during the Holocaust reported more empathy and feelings of social responsibility (and were more likely to see all people as equal) than did a group of age- and sex-matched non-Jews who did not aid or rescue Jews during the Holocaust.

The prosocial traits proposed by Penner et al. (1995) overlap to some extent with the “Big Five” (John, 1990) or “Five-Factor” (McCrae & Costa, 1987) personality dimension known as Agreeableness (Penner et al., 1995), which itself is a reliable predictor of prosocial behavior (Graziano, Habashi, Sheese, & Tobin, 2007). Agreeableness, which can be conceptualized as a generalized positive (vs. negative) orientation toward maintaining relationships with others (Graziano & Eisenberg, 1997), is characterized by adjectives such as “warm,” “kind,” “appreciative,” “cooperative,” and “trusting.” Highly agreeable people tend to be more aware of the mental states of others, which may be one of the mechanisms responsible for their prosociality (Nettle & Liddle, 2008). Agreeable people tend to have more friends (Jensen-Campbell et al., 2002), and appear to navigate interpersonal conflict more productively (Jensen-Campbell & Graziano, 2001; McCullough & Hoyt, 2002). Graziano and colleagues (2007) found that in people high in agreeableness tended to offer more help across a wider range of situations and victims. Agreeable people also engage in more active implicit emotion regulation when confronted with aggressive or antisocial stimuli, which helps them to respond more prosocially to such stimuli (Meier, Robinson, & Wilkowski, 2006).

People can also be classified as selfish (i.e., highly sensitive to one's own outcomes), altruistic (i.e., highly sensitive to other people's outcomes), or egalitarian (i.e., highly sensitive to equality between one's own outcomes and the outcomes of another person) based on their stated preferences for payoffs that tradeoffs between self-interest and concern for others. These individual differences also predict differences in prosocial behavior (Van Lange, 1999, , 2008; Van Lange, De Cremer, Van Dijk, & Van Vugt, 2007).

### *Sex Differences*

Men render more aid in social psychology experiments (when helping is measured in terms of behaviors such as giving money to a stranger, stopping a man from stealing someone's calculator, or helping someone who has dropped some envelopes) than women do. In a multivariate meta-analysis of the extant studies, which evaluated 12 different predictors of between-study variation in effect size, Eagly and Crowley (1986) found that a medium-sized gender difference favoring men ( $d = .52$ ) could be expected in a study with typical values on all 12 moderators. They also found that this effect would be expected to be even larger in experiments conducted outside university campuses and when participants' needs for help were "directly presented" rather than simply inferred from requests for help. The mean effect size favoring men was slightly lower in studies conducted in laboratories and when others were not observing, but even in such studies, men would still be expected to help more than women would. In a multivariate regression that included two-way interactions among study characteristics, men were expected to manifest small-to-medium increases in helping relative to women ( $d = .44$ ), but this mean effect size was expected to soar to  $d = .98$  in studies in which men believed themselves to be particularly competent to help and in which other helpers were

available. It was also expected to climb to  $d = .99$  in studies in which women rated the type of helping required as more dangerous than men did, and in which other helpers were available.

The fact that men tend to provide more help in social-psychological experiments, however, should not be taken as evidence that men are more prosocial across the board than women are. Women have more empathy for others than men do (Eisenberg & Lennon, 1983), and longitudinal studies also indicate that girls demonstrate higher levels of prosocial behavior than boys do (Gregory, Light-Hauserman, Rijdsdijk, & Eley, 2009; Zahn-Waxler, Schiro, Robinson, Emde, & Schmitz, 2001). Women provide more emotional and instrumental social support to people in their social networks (including family and friends) than do men—particularly under times of stress (Taylor et al., 2000). They also perform more caregiving (particularly in terms of personal care and household tasks) for older adults than do men (Miller & Cafasso, 1992). On the basis of gender differences such as these, Taylor and colleagues (Taylor, 2002; Taylor, Dickerson, & Klein, 2002; Taylor et al., 2000) have hypothesized evolved sex differences in biological systems designed to mobilize nurturance and social support, which arose due to selection pressure for women to provide care for their offspring during stress.

Women are also more likely to provide heroic, life-threatening forms of care to strangers than the laboratory experiments let on. Although men are overwhelmingly more likely to engage in life-threatening acts of heroism of the sort that might win one a nomination for a Carnegie Hero Fund Award (these awards are given to civilian adults who voluntarily, and outside of job responsibilities, knowingly risk their lives to rescue unrelated individuals from life-threatening situations such as fires, drownings, and attacks by animals or criminals) relative to any conceivable base rate for their presence in the settings that give rise to such emergencies, Becker and Eagly (2004) demonstrated that there are several forms of risky helping behaviors for which

women are overrepresented. For example, among unmarried people in Poland, the Netherlands, and France during World War II (i.e., when married couples were excluded from the calculations), unmarried non-Jewish women were approximately 10% more likely than were unmarried non-Jewish men to risk their life, freedom, or safety to rescue Jews from the Holocaust (these and all comparable statistics below are adjusted for men's and women's representation in the general population). Becker and Eagly also documented that women are approximately 13% more likely than men to donate kidneys, approximately 16% more likely than men to serve in the Peace Corps, and about twice as likely to serve as physicians with *Doctors of the World* relative to their representation among all physicians in the United States.

From these data, Becker and Eagly made the point that even though men's physical strength, capacity for fast action, (possibly) better training for informal lifesaving (e.g., through the Boy Scouts or military training), and differential responsiveness to the reputational incentives associated with being publicly acknowledged as heroes might lead them to engage in more emergency helping in many public settings, women's tendency to help more than men in the other risky situations that Becker and Eagly documented might reflect women's higher levels of empathy or (we take them to mean, as a by-product of) a female-specific adaptation for providing nurturance to offspring during times of stress (see also Taylor et al., 2000).

#### *Genetic and Neuroendocrine Factors*

Behavioral-genetic studies indicate that prosocial behavior (at least as measured by self-reports and informant reports of traits such as trust, empathy, cooperation, and altruism) has a substantial genetic component (Gillespie, Cloninger, Heath, & Martin, 2003; Gregory, Light-Hauserman, Rijdsdijk, & Eley, 2009; Matthews, Batson, Horn, & Rosenman, 1981; Rushton, Fulker, Neale, Nias, & Eysenck, 1986). Additive genetic factors appear to account for roughly

40-70% of the variation in adults' prosocial behavior, with the remainder largely attributable to nonshared environmental factors (Gregory, Light-Hauserman, Rijdsdijk, & Eley, 2009).

With the widened availability of genomic methods to behavioral scientists, researchers have begun to identify several genes that are associated with prosocial behavior. In a sample of 354 multi-sibling families, Bachner-Melman and colleagues (2005) found associations between selflessness (e.g., concern for one's own needs, attendance to the needs of others) and the dopamine D4 and dopamine D5 receptor polymorphisms.

Researchers have also examined the role of vasopressin receptor gene and the oxytocin receptor gene in human prosocial behavior. Knafo et al. (2008) found that participants with two long alleles on the RS3 promoter region of the vasopressin receptor gene AVPR1a sent more money to their partners in a dictator game (in which participants are given an amount of money which they can split between themselves and a partner in any proportions they please). Israel and colleagues (in press) also used the dictator game and a task for measuring social values orientation to examine the association between the oxytocin receptor gene OXTR and altruism. Results revealed associations between the amounts participants sent to their partners, and their social orientations, with variability in several regions of the OXTR gene. In support of the role of oxytocin in prosocial behavior, research involving the exogenous administration of oxytocin has also found that oxytocin increases the ability to infer another person's mental state (Domes, Heinrichs, Michel, Berger, & Herpertz, 2007), trustworthiness (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005), and the maintenance of trust following betrayal (Baumgartner, Heinrichs, Vonlanthen, Fischbacher, & Fehr, 2008).

Who Receives Help?

In social psychology experiments, women in need receive more help than do men in need. Based on a meta-analysis of data from 36 experiments, Eagly and Crowley (1986) estimated that women receive .46 standard deviations more help than do men in similar need situations. For male participants, the opportunity to help a woman raised their degree of helpfulness by .41 standard deviations; for female subjects, the opportunity to help a woman raised their degree of helpfulness by a smaller .14 standard deviations. However, when controlling for 11 potential moderators of between-study variability in these results, Eagly and Crowley found that women could be expected to receive a whopping 1.69 standard deviations more help than men receive. Furthermore; men and women gave equal amounts of help to men in need, but men gave .38 standard deviations worth of help to women in need than women did.

People also tend to help people with whom they are similar (Park & Schaller, 2005). In addition, people are more likely to give help to members of groups to which they belong. For example, white people wait longer to provide emergency help to a black person than they do to a white person—particularly in high-emergency situations (Kunstman & Plant, 2008).

Finally, it has been long known that both men and women provide more help to attractive people than to unattractive people (Benson, Karabenick, & Lerner, 1976; J. F. Dovidio, & Gaertner, S. L., 1983; Farrelly, Lazarus, & Roberts, 2007; S. G. West & Brown, 1975). Stürmer, Snyder, and Omoto (2005) found that the attractiveness of the target of helping was a particularly important mediator of helping when the target of helping was a member of a group to which the participant did not belong (e.g., when the potential helper was heterosexual and the potential target of helping was homosexual, and vice versa). When the helper and target of helping were from the same social group (i.e., when both were either heterosexual or homosexual) empathy was a better predictor of helping than attractiveness was.

### Environmental and Situational Factors

There are many environmental and situational factors that influence prosocial behavior. For example, all over the world, people in cities are significantly less helpful than are people in rural areas (Stebly, 1987). Levine, Martinez, Brase, & Sorenson (1994) conducted a study of helping behaviors in 36 U.S. cities and found that population density was a more important predictor than overall population size. A common explanation for this finding is that with increased population density, people become fatigued by unwanted distractions and interruptions and therefore begin to psychologically close themselves off to interactions with strangers, which causes them to become less responsive to people who might be in need of help (Milgram, 1970).

In a cross-cultural study of helping in 23 large world cities (e.g., Budapest, Rio de Janeiro, Tel Aviv, New York), Levine, Norenzayan, and Philbrick (2001) found substantial cross-cultural differences in the extent to which people would (a) stop to pick up a pen that a confederate had dropped; (b) help or offer to help a confederate wearing a leg brace to pick up a pile of magazines he had dropped; and (c) help a seemingly blind confederate cross the street. The best predictor of cross-cultural differences in helping was purchasing power parity (PPP), which measures economic development. Cities in nations with the highest PPP had the lowest rates of helping ( $r = -.43$  with the mean of all three measures of helping). Rates of helping were not significantly correlated with the cities' population sizes, pedestrians' mean walking speed (used as a proxy for pace of life), or culture-level measures of individualism and collectivism. Levine et al. (2001) suggested that with economic development comes the replacement of traditional value systems emphasizing the importance of helping strangers.

*Time pressure.* Time pressure also influences emergency helping. In an influential early study on this topic, Darley and Batson (1973) assigned seminary students to low, moderate, and

high “hurry” conditions. The students were on their way to give a sermon about the Good Samaritan parable or a control topic, and on the way they passed a confederate who looked unwell. Darley and Batson found that 80% of participants who were not rushed stopped to help, whereas only 10% of those who were running late stopped to help. The topic of participants’ upcoming sermons did not significantly influence helping (but see Greenwald, 1975, who argued that there was in fact an important effect here that was masked by low statistical power. We wonder why no one ever picked up on Greenwald's suggestion and explored the issue further.).

*Ambiguity of need.* Shotland and Straw (1976) conducted a study in which they staged a fight between a man and a woman. If the woman shouted “get away from me; I don’t know you,” bystanders helped 65% of the time. In contrast, if the women shouted “Get away from me; I don’t know why I ever married you,” bystanders helped 19% of the time. In some cases, it may be difficult to determine whether or not a situation is an emergency, which leads bystanders to look to those around them to determine whether or not they should act (Latané & Nida, 1981).

### *The Bystander Effect*

Which takes us to the *bystander effect*—the tendency for individuals to render less assistance in an emergency as the number of other bystanders increases. Latané and Darley’s (Latané & Darley, 1968, , 1970) initial work in this area was stimulated by a *New York Times* account of the murder of a young woman in Queens, New York, named Kitty Genovese. According to the original reporting, Genovese was fatally assaulted outside of her apartment, and 38 of her neighbors heard the 30-minute-long altercation without a single one lifting a hand to intervene. As the standard telling of the story goes, the assailant left the scene and came back on two different occasions shortly afterward to continue the attack. However, recent research based



on legal documents and testimony from the attacker's murder trial call into question many details of the canonical Kitty Genovese story. For example, there were two attacks rather than three; the number of eyewitnesses was fewer than 38; several witnesses did call the police after the first attack; none of the witnesses would have had the field of view to witness the complete 30-minute episode; the second and fatal attack took place indoors where only a few witnesses would have been able to hear or see any part of it; and the first attack was, in fact, ended by a bystander intervention—someone shouted out of a window so that the perpetrator ran off; presumably ending the altercation from many bystanders' points of view (Manning, Levine, & Collins, 2007). Nevertheless, the story is still a powerful one that inspired scores of studies on the bystander effect and its boundary conditions.

Latané and Darley (1970) proposed that people must successfully negotiate a series of decisions—often under conditions of considerable chaos and emotional arousal—before rendering aid in a group setting (Batson, 1998; Latané & Nida, 1981). They hypothesized that the presence of other people biases each of these decisions toward the choice that would reduce the likelihood of prosocial behavior. First, people must notice that something is happening that requires intervention. If bystanders are uncertain about whether to help, they tend to look to others to figure this out. Unfortunately, because no one wants to be embarrassed by over-reacting to a situation that is in actuality not an emergency, it is thought that nearly everyone inhibits their emotion expressions in such situations. As a result, looking to others for cues that an emergency is going on inhibits bystander intervention. This is a phenomenon that Darley and Latané (1970) called *audience inhibition*. Another important social process in these situations is *social influence*, in which other people's inaction causes people to conclude that a situation is not, in fact, one that requires intervention. In an experiment involving a confederate whom participants

believed was blind, Ross and Braband (1973) found that bystanders continued to react to odorless smoke even if the confederate did not. However, bystanders reacted less often when the confederate did not react to a woman's scream (i.e., which did not require eyesight).

Having recognized a need, bystanders must then decide they have a personal responsibility to take action. Darley and Latané (1968) conducted a study in which participants engaged in a discussion, when a confederate begins to feign a seizure and calls for help. Nearly every participant who believed that no one else could hear what was happening tried to help the confederate, whereas participants in larger groups (6 persons) tended not to help. Conversely, participants are more likely to help—even when in the presence of others—if they perceive that the other bystanders are unable to help (Bickman, 1971). When people know that they are the only ones who are in a position to help, the personal costs of non-intervention become higher, as they know that they alone will be to blame if the person's need remains unrelieved.

Finally, even if people have decided that they should take action, they may perceive themselves as incompetent to do so. In the presence of groups, lack of perceived competence can deter helping. Cramer et al. (1988) conducted a study in which half of participants were registered nurses and the others were general education students. With the use of confederate bystanders who were instructed not to react, participants passed a worker on a ladder and then heard a noise as if the worker had fallen. The nurses helped when in the presence of others or when alone, but the general education students were more likely to help if they were alone.

Other variables also can reduce the bystander effect. When groups are cohesive, rather than simply an aggregation of strangers, larger groups can actually increase helping behavior relative to small groups (Rutkowski, Gruder, & Romer, 1983). When people are seated face-to-face, so that they can easily observe the fine details of each others' facial and non-verbal

reactions to a potential emergency situation (and so that others can see theirs), helping is higher in the presence of others than when people are seated back-to-back, and thus cannot pick up on each other's non-verbal expressions of concern (Darley, Teger, & Lewis, 1973). Finally, people help more in the presence of friends than in the presence of strangers (Latané & Rodin, 1969) and may even help more when the group shares a common group identity with the person in need of help: Men and women both are more likely to help a woman in distress if they have been seated among a group of strangers who were all women (M. Levine & Crowther, 2008).

Despite these boundary conditions, the bystander effect is robust. Across nearly 50 laboratory experiments, approximately 75% of people tried to render aid to someone in need when alone, whereas only 53% of people in the presence of others did so (Latané & Nida, 1981). But the person in need has a different question: "Will I receive help?" According to Latané and Nida's (1981) meta-analysis, in situations in which bystanders are fully able to see, and be seen by, other potential helpers, only 70% of people in need receive help. In contrast, people in need receive help 82% of the time when there is a single bystander.

### Volunteering

Volunteering is one of the most widely practiced prosocial behaviors. In the United States alone, approximately 26 percent of the population (i.e., 62 million people) volunteered at least once between September 2007 and September 2008 (U. S. Department of Labor, 2009). Volunteering is evidently beneficial for psychological well-being and physical health (S. L. Brown, Nesse, Vinokur, & Smith, 2003; Musick, Herzog, & House, 1999; Oman, Thoresen, & McMahon, 1999; Thoits, 2001). Hansen, Larkin and Dworkin (2003) also found that participation in volunteer activities was associated with personal development (e.g., identity) as well as interpersonal development (e.g., prosocial norms and ties to the community) among an

ethnically diverse sample of youth. Among the different types of organizations in which people volunteer, people spend the most hours volunteering for religious organizations (35.1 percent of all volunteers; U. S. Department of Labor, 2009).

Some of the best predictors of volunteer activity are the extent to which one feels that volunteering has become an important part of one's identity and the extent to which one feels that other people are aware of one's volunteer activities and expect one to continue working as a volunteer (Finkelstein, Penner, & Brannick, 2005). Volunteering is also associated with higher levels of self-reported empathy, a generally positive orientation toward helping, and religiosity (Penner, 2002; Penner & Finkelstein, 1998). Clary and Snyder (1999) furthermore suggested that people can have any of six motivations for volunteering (i.e., expressing one's values, gaining knowledge or understanding; growing or developing psychologically, gaining career-relevant experience, strengthening one's social relationships, or reducing one's own negative feelings or to address one's own personal problems). Matching people with volunteer opportunities that allow them to fulfill their motivations produces greater satisfaction with the volunteering experience and higher intentions to volunteer in the future (Clary & Snyder, 1999; Clary et al., 1998; Clary, Snyder, Ridge, Miene, & Haugen, 1994). Also, it is important to note that requiring people to volunteer (e.g., through service learning requirements in high schools) who are not initially motivated to do so reduces their intention to volunteer in the future (Clary et al., 1998).

### **Fostering Prosocial Behavior**

A considerable amount of research has addressed the factors that foster prosocial behavior in children and adults. Parental modeling of prosocial behavior is an important element of prosocial development (Rushton, 1975). Another aspect of parenting that may foster prosocial behavior is providing reasoned explanations when asking children to change their behavior (M.

L. Hoffman, 1970; Krevans & Gibbs, 1996). Similarly, parental authoritativeness and positivity (indexed by emotionally positive, non-coercive methods of discipline), and parental emotional availability may also play a role in prosocial development (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000; Knafo et al., 2008; Moreno, Klute, & Robinson, 2008).

Modeling also fosters prosocial behavior (Krebs, 1970). Rosenhan and White (1967) conducted a study of fourth and fifth graders in which the children played a game once in the presence of an adult model and once without this model. Every time the model won, the model donated half of the earnings to charity. Children who had witnessed the model's behavior, and particularly those who had also given to charity while in the model's presence, tended to donate to charity when playing alone. Similarly, Rushton (1975) studied 7- to 11-year-old children who had witnessed an adult model play a game and donate a portion of his or her earnings (i.e., tokens) to charity. Two months later the children played one of three games that varied in similarity to the original game. The children who viewed the modeling behavior 8 weeks earlier behaved more prosocially (i.e., donated more to charity) across all three game conditions. In addition, children who had been "preached" to during the task about the importance of giving money to the charity donated more money to charity 8 weeks later (even though preaching did not influence donations immediately following the game 8 weeks earlier).

In addition, Bryan and Test (1967) found that after drivers saw someone stop to help a woman on the road change a flat tire, they were more likely to stop and help a woman in a similar situation. Likewise, exposure to prosocially oriented television programs (Hearold, 1986), and video games (Gentile et al., 2009) can increase prosocial behavior in children and adolescents, perhaps through social learning or direct reinforcement: Video games are fun, so when playing a video game in which characters have prosocial goals, it's fun to help.

Explicit attempts to educate people about prosocial behavior can also make a difference. For example, educating others about the bystander effect has been shown to increase helping behavior in students (67% vs. 27% who did not hear the lecture; Beaman, Barnes, & Klentz, 1978). Instruction in cardiopulmonary resuscitation (CPR) can likewise be effective at encouraging people to render effective emergency aid. Such instruction is particularly effective (a) when 911 dispatchers are providing instructions over the telephone at the site of an emergency; (b) when the family members of cardiac patients have received training; (c) people use Braslow et al.'s (1997) self-training video; (d) people in training spend a lot of time practicing on manikins; and (e) people in training are taught the concepts of ambiguity of need and diffusion of responsibility (Latané & Darley, 1968, , 1970) and are taught how to overcome these social-psychological impediments to helping (Vaillancourt, Stiell, & Wells, 2008).

Finally, other research suggests that subtly priming people with social stimuli such as geometric configurations that resemble eyes or faces (Bateson, Nettle, & Roberts, 2006; Haley & Fessler, 2005; Rigdon, Ishii, Watabe, & Kitayama, in press), reminders of God or religion (Pichon, Boccato, & Saroglou, 2007; Shariff & Norenzayan, 2007), and even secular institutions such as contracts and police that regulate prosocial behavior (Shariff & Norenzayan, 2007) increase generosity, cooperation and charitable giving. These effects obtain in both laboratory and field experiments, raising the idea that some of the lowest-hanging fruit in social psychologists' efforts to increase prosocial behavior in the real world might be through subtle, non-preachy stimuli that activate prosocial cognition and behavior without conscious awareness.

### **Conclusion**

Nearly fifty years of research on the social psychology of prosocial behavior has produced a broad and fascinating set of facts and theories about the factors that promote and

inhibit prosocial behavior, as well as on interventions that might be applied in the real world to increase prosocial behavior. These concepts continue to attract the attention of social psychologists, and they should. We are confident that high-quality social-psychological work on prosocial behavior will continue much in this same fashion as it has for the past five decades.

Which is not to say that there is not room for new conceptual directions, because there is. Humans' penchant for prosocial behavior is one of the great puzzles of evolutionary theorizing, and there is considerable room for social-psychological research that is devoted to uncovering the mind's functional circuitry for producing prosocial behavior. By thinking explicitly about the selection pressures that might have given rise to prosocial behavior and the sorts of psychological machinery that would be required to produce prosocial solutions in response to those selection pressures, social psychologists may be able to make important new strides in understanding how humans manage to be so prosocial, how those tendencies are thwarted, and the cognitive tools that the mind might possess for producing such remarkable behavior.

Moreover, many important issues in the mainstream social-psychological literature are ripe for evolutionary re-casting. From what selection pressures did Batsonian altruistic motivation arise? Does the role of blood in discouraging emergency helping reflect conflict between evolved mechanisms for disgust and evolved mechanisms for reciprocal altruism? Are men so much more likely to render emergency aid in highly public settings because of a desire to signal their mate as protectors and providers to a choosy pool of prospective mates? Can the bystander effect be better conceptualized as a public goods problem (i.e., it's good for me if we have a system in which people get help, but it's less good for me if I'm the one who gets saddled with having to do the helping)—which would render it highly amenable to evolutionary analysis? Who knows? The field is filled with opportunities like these. Careful reliance on well-

established evidentiary criteria for testing adaptationist hypotheses (Andrews, Gangestad, & Matthews, 2002; Williams, 1966) will be essential for doing this job well, and would help to put the social psychology of prosocial behavior on a broader theoretical footing that will improve its relevance to both social psychology and the interdisciplinary science of prosocial behavior.



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