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The Costs of Benefits: Help-Refusals Highlight Key Trade-Offs of Social Life

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Social living provides opportunities for cooperative interdependence and concomitant opportunities to obtain help from others in times of need. Nevertheless, people frequently refuse help from others, even when it would be beneficial. Decisions to accept or reject aid offers may provide a window into the adaptive trade-offs recipients make between costs and benefits in different key domains of social life. Following from evolutionary and ecological perspectives, we consider how help-recipient decision making might reflect qualitatively different threats to goal attainment within six fundamental domains of social life (coalition formation, status, self-protection, mate acquisition, mate retention, and familial care). Accepting help from another person is likely to involve very different threats and opportunities depending on which domains are currently active. This approach can generate a variety of novel empirical predictions and suggest new implications for the delivery of aid.

Keywords: *domain-specificity; evolutionary psychology; prosocial behavior; trade-offs; helping; recipient reactions*

A un caballo regalado, no se le ve colmillo

Folk expression, Ecuador

Je moet een gegeven paard niet in de bek kijken

Folk expression, Netherlands

À cheval donné on ne regarde pas la bride

Folk expression, France

Don't look a gift horse in the mouth

Folk expression, United States

Living in social groups brings many advantages—people in social networks can assist one another in numerous ways. For instance, individuals involved in interdependent cooperative networks benefit from shared intelligence, division of labor, group defense against enemies, pooling resources to ensure against starvation, additive strength (four people can easily move a log that none of them could budge independently), and so on. Indeed, anthropological analyses of human groups in non-Western societies and ecological analyses of other group-living animals suggest that the individuals composing those groups would often perish were it not for the benefits of sharing (e.g., Alcock, 2005; Gurven, 2004; Hill & Hurtado, 1996). In recent years, social psychologists have been joined by behavioral ecologists, anthropologists, and economists in a wealth of studies examining the circumstances under which people will act prosocially toward others (e.g., Ackerman, Kenrick, & Schaller, 2007; Dana, Cain, & Dawes, 2006; Griskevicius et al., 2007; Henrich et al., 2005; Krebs & Van Hesteren, 1994; Penner, Dovidio, Piliavin, & Schroeder, 2005; Stürmer, Snyder, & Omoto, 2005; Tooby & Cosmides, 1996; Van Vugt & Van Lange, 2006).

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There is some consensus on one point: People consistently act more cooperatively than predicted by models of “rational man.” That is, they often fail to act in a completely selfish way, even when they could get away with it, and even when interacting with total strangers (Camerer, 2003; Dana et al., 2006). This failure to act according to the model of rational self-interest is found not only in traditional societies that involve face-to-face interactions with closely related others but even among people living in urban settings in so-called individualistic societies such as the United States (Henrich et al., 2005). Besides seeming to be “irrational” in their generosity, though, people are also “irrational” in the opposite way—they frequently turn down benefits offered by others (e.g., Camerer & Thaler, 1995; Castro, 1974; Clark, Gotay, & Mills, 1974; Gergen, Morse, & Kristeller, 1973; Hofmann, McCabe, & Smith, 1996; Ohmura & Yamagishi, 2005; Turner & Pratkanis, 1994). It is indeed something of a puzzle that people respond negatively to assistance, even when that assistance might be critical to helping them solve an important problem (e.g., Briar, 1966; Castillo, 2005; Duin, 2005; Nadler, 1986; Turner & Pratkanis, 1994). Yet, as indicated by the various folk expressions with which we opened this article, hesitancy about accepting gifts is not something unique to people living in places like New York City (the English admonition not to look a gift horse in the mouth is at least several centuries old, and variants in other languages can be traced as far back as 400 A.D.).

From the perspective of evolutionary psychology and behavioral ecology, all actions (including those involved in group living) involve trade-offs (e.g., Dugatkin, 1997; Gangestad & Simpson, 2000; Hawkes, 1992; Kaplan & Gangestad, 2007; Kenrick, Li, & Butner, 2003; Nettle, 2006). Investing in one activity means not investing in another; participating in social interactions means sacrificing time and effort that could have been directed to one’s own interests. In this light, cooperative behavior involves continual trade-offs between varying costs and benefits. So too does the acceptance of aid from others.

What are the critical trade-offs of social life and how are they organized? Evolutionary theories suggest a limited but qualitatively distinct (i.e., domain-specific) set of goals associated with important problems recurrently faced by our ancestors, such as protecting themselves and acquiring mates (e.g., Buss, 1994; Cosmides & Tooby, 1994; Hirschfeld & Gelman, 1994; Kenrick & Keefe, 1992). These different goals presumably (a) orient people toward particular inputs and (b) are managed by discrete mechanisms that (c) produce specific cognitive, affective, and behavioral outputs. Evolutionary theorists presume that people employ adaptive decision rules to trade off the costs and benefits of these goals against each other

(Kenrick & Sundie, 2007). Although these rules produce cognitions and behaviors that may sometimes appear superficially irrational, at a more ultimate level of analysis, they often appear to benefit individual fitness through the avoidance of costly errors (Haselton & Nettle, 2006).

An examination of the fundamental social domains within which people manage evolutionarily important goals is likely to provide new insights into the circumstances under which people accept or refuse offered assistance. Traditional approaches have generally assumed that the decision to accept or refuse aid can be understood in terms of one or another domain-general process. For instance, some models have attempted to explain help-refusal in terms of threats to personal freedom (e.g., Brehm, 1966; Briar, 1966; Gergen & Gergen, 1971; Rosen, 1971), whereas others have presumed that such phenomena follow from worries about interpersonal inequity (e.g., Clark et al., 1974; Gergen, Ellsworth, Maslach, & Seipel, 1975; Greenberg, 1980; Gross & Latané, 1974). The currently dominant theoretical perspective subsumes these other processes under yet a different domain-general umbrella, positing that self-esteem concerns underlie all such decisions (e.g., Fisher & Nadler, 1976; Fisher, Nadler, & Whitcher-Alagna, 1982; Nadler & Fisher, 1986; Nadler, Fisher, & Ben-Izhak, 1983; Shell & Eisenberg, 1992). We argue that, although each of these general models explains some instances of help-refusal, they also mask interesting and important distinctions and omit other mediating processes entirely (a common problem with domain-general perspectives; see Bloom, 1999; Kenrick, Sadalla, & Keefe, 1998). Instead, help-recipient reaction research, and social decision-making research more generally, could benefit from a perspective that resolves these problems through both finer grained analysis (making distinctions where none have previously been made) and broader scope (incorporating mediating goals that have previously been unexamined). By analogy, just as emotions like fear, anger, and happiness involve distinct contents and goals and thus are understood not only at the level of general approach-avoidance tendencies, so too might we understand trade-offs of social life (Keltner, Haidt, & Shiota, 2006; Kenrick & Shiota, 2008; Lerner & Keltner, 2000; Plutchik, 1980; Scott, 1980).

Consider several examples in which people are offered assistance from others: A lone woman, stranded in her stalled car on a dark, deserted road, refuses a ride to the nearest service station from a friendly workman driving a pickup truck but accepts a ride from an attractive but snobby woman driving a Mercedes. After a strenuous hike with his girlfriend, a muscle-weary man turns down an offer of a massage from her beautiful friend, even though the friend is a trained massage therapist. A

middle-class 15-year-old doesn't think twice about accepting any of the \$229,000 her parents will spend to rear her to adulthood (Lino, 2005) but disdainfully dismisses an offer from those same parents to drive her home after a friend's party. The decision to accept or reject help can sometimes have life-and-death implications. For instance, after Hurricane Katrina devastated the city of New Orleans, U.S. officials refused to accept aid from Cuban doctors (Adams, 2005), and illegal immigrants, many of whom were among the most needy, often declined humanitarian support (Castillo, 2005). After the genocide in Rwanda, conservative African bishops rejected money donated by liberal religious sources to feed starving Rwandans (Duin, 2005). Although the general processes of self-esteem threat, equity concerns, or loss of personal freedom may explain some of these examples of help-refusal, each is strained in other cases. We suggest that these decisions represent the outcomes of trade-offs involving different goals that operate according to different rules and that apply differently depending on what is being exchanged and who is doing the exchanging (e.g., Cosmides & Tooby, 1992; Kenrick & Trost, 1989; Lydon, Jamieson, & Holmes, 1997).

In this article, we employ research and theory on domain-specificity and evolutionary economics to organize particular costs and benefits into a broader model of help-recipient decision making. We focus primarily on the decision to refuse assistance, although the framework we develop applies equally well to decisions of help-acceptance and is connected to a broader range of topics on cooperation and conflict (Kenrick, Sundie, & Kurzban, 2008). Turning down offered benefits represents the manifestly counterintuitive decision, but it may in fact also shed the most light on recipient decision-making processes, which are, we argue, ultimately rational. The model we offer is compatible with several existing models of aid receipt but may be seen as providing a broader-level perspective to help integrate these earlier models with emerging research and theory on other aspects of prosocial behavior and, more broadly, with numerous other aspects of social decision making (e.g., Kenrick Li, et al., 2003; Kenrick et al., 2008; Penner et al., 2005; Plous, 1993; Schroeder, Penner, Dovidio, & Piliavin, 1995).

We first consider the features and relevance of functional, domain-specific approaches to cognition. We then briefly outline one model for thinking about the common domains of social life, and we consider common trade-offs made in the service of fundamental goal attainment within the different domains. We detail how the potential costs of help interactions might be coupled with potential benefits to produce recipient decisions. Next, we generate a variety of novel empirical predictions within each domain that flow from this

framework. Last, we suggest several interesting implications for more successfully giving help.

THE FUNCTIONAL, DOMAIN-SPECIFIC APPROACH

During the latter half of the 20th century, the human mind was often conceptualized as a universal computer—a device useful for tackling a wide variety of problems with a set of general processes applying to stimuli ranging from words to shapes to social relationships (e.g., Geertz, 1973; Montagu, 1964; Sahlins, 1976). Over time, however, research on learning and cognition across a wide range of fields raised problems for such a view (e.g., Brown, 1990; Caramazza, 1998; Keil, 1989; Pinker, 2002; Santos, Hauser, & Spelke, 2002; Sherry & Schacter, 1987; Tooby & Cosmides, 1992). This research has instead supported a domain-specific view of thought and behavior (e.g., Barrett & Kurzban, 2006; Cosmides & Tooby, 1994; Hirschfeld & Gelman, 1994; Kenrick, Li, et al., 2003; Kurzban & Aktipis, 2007; Shettleworth, 2000; Sperber, 2001). From this perspective, the processes involved in social behavior are presumed to be specialized to deal with different recurrent social problems, just as different visual receptors are specialized to respond to certain properties of light (e.g., rods to brightness and different types of cones to different ranges of the color spectrum).

The general framework out of which the domain-specificity assumption arises is in part based on decades of work by zoologists and comparative psychologists, who uncovered a wealth of behavioral mechanisms peculiarly suited to the demands of particular species (Alcock, 1998). Some of those mechanisms involve innate sensory and perceptual capacities. For example, dogs use smell for hunting; as a consequence, they have many more olfactory receptors than humans, and they are thousands of times more sensitive to various odors (Agosta, 1992). Humans, on the other hand, can see in color, whereas dogs cannot (color vision may be useful for detecting ripe fruit, not part of a dog's diet).

Although many of these capacities are innate, they are often required to be *flexible* if they are to be useful. Hence, natural selection frequently favors open-ended learning and memory biases fitted to species' common ecological tasks (Mayr, 1976). For example, rats, which have poor vision and rely on taste and smell to find food at night, easily condition aversions to novel tastes but not to novel visual stimuli (Garcia & Koelling, 1966). Quail, on the other hand, which have excellent vision and rely on visual cues in food choice, show the opposite learning bias (Wilcoxon, Dragoin, & Kral, 1972). Many birds learn the song of their species by passively listening to their parents

during a brief critical period, and even though they do not practice, they reproduce the song perfectly during the next breeding season (the song itself is not inborn, though, because if they are exposed to a different song during the critical period, they will learn that).

Adaptive pressures are assumed to shape *specific* computational mechanisms designed to solve specific problems faced by an animal's ancestors (Tooby & Cosmides, 1992). For example, birds use different memory systems and different rules for remembering species song, experiences with distasteful foods, and the locations at which they stored food caches (Sherry & Schacter, 1987). On the other hand, birds and mammals alike condition strong food aversions in a single trial and can do so at any time of their lives (cf. Garcia & Koelling, 1966). Following yet a different set of rules, some birds, such as Clark's Nutcrackers, learn the locations of multiple new food caches on a daily basis and erase and update those memories after later consuming the food. As Sherry and Schacter (1987) pointed out, using the same decision rules for each of these problems would be highly inefficient, and in fact different memory systems in birds are often anatomically distinct. Humans similarly have different memory systems for dealing with distinct, sometimes conceptually incompatible tasks, including language learning, food aversion, facial memory, and spatial location (Sherry & Schacter, 1987).

To perform their different functions, these learning and memory systems must be attuned to different combinations of inputs and produce different outputs. The different systems are designed to solve distinct goals, to be calibrated to distinct trade-offs involving distinct costs and benefits, and to vary in their activation depending on contextual cues (e.g., Anderson, 2003; Fessler, 2001; Frijda, 2004). For example, perceivers are typically quite sensitive to characteristics of food items that indicate suitability for consumption (e.g., digestibility, ripeness) and high caloric value (e.g., Rozin, 1982). Yet, when foods containing all the usual cues to quality (e.g., chocolate fudge) are coupled with indicators of disease contamination (e.g., they are shaped to look like dog feces), they become much less desirable, even when people consciously recognize that such foods are safe (Rozin, Millman, & Nemeroff, 1986). Cues involving high-quality mates, on the other hand, have little overlap with those indicating suitable foods and are traded off according to different sets of weights. For example, people typically report preferring qualities like creativity and an interesting personality in a potential mate, but these characteristics are weighted less strongly than physical attractiveness and resource holding potential when perceivers' "mating budgets" are constrained (e.g., when people are able to select only one important quality in a mate; Li, Bailey, Kenrick, & Linsenmeier, 2002). Furthermore, the characteristics prioritized in a mate depend importantly on whether

people are evaluating others as long-term or short-term partners and on whether the people doing the evaluating are men or women (Li et al., 2002; Li & Kenrick, 2006). Thus, even though food choice and mate choice were central problems for all our human ancestors (and for the nonhuman ones as well), the decision rules used for making such choices are very different. As we discuss next, different categories of social decisions (e.g., those involved in cooperating with friends, competing for status, caring for offspring, and maintaining long-term romantic relationships) may all involve problems that are, at least in some ways, more efficiently handled by different sets of decision rules.

Although there is thus a reasonably large body of evidence against the notion that vertebrate brains process all information using a monolithic set of decision rules, there are nevertheless multiple conceptions of cognitive domain-specificity or modularity. It is therefore worthwhile to consider what the current conceptualization of domain-specificity entails and what it does not. First, there is emerging evidence that cognitive specializations inherent to domain-specificity are functional in nature but not necessarily structurally or spatially unique (Barrett & Kurzban, 2006; Pinker, 1997; Sperber, 1994). That is, *how* specific forms of information are processed is critical, rather than *what* architecture does the processing. As one review of the literature on this issue noted, a domain-specific cognitive mechanism "need not be localized in a single place in the brain" (Shettleworth, 2000, p. 47). Although some brain functions may be neurally localized (e.g., language vs. vision), others are not as architecturally segregated from one another (e.g., color vs. movement perception). Many systems involved in complex social decisions are likely to be spatially dispersed rather than strictly and narrowly localized and to involve inputs from a variety of different subcomponents.

An important related point is this: Although there is reason to expect some degree of functional specialization in the brain systems involved in particular problems as opposed to others, that specialization is likely to be flexible rather than rigid, especially for complex social decisions of the sort we discuss. That is, specialized cognitive programs often process inputs in a context-sensitive manner and therefore may have access to a wide range of informational inputs (Barrett & Kurzban, 2006). For example, the human language capacity certainly meets most criteria for a domain-specific cognitive system, yet it is patently clear that the system requires flexibility—to exercise their remarkable capacity for language, people need to learn which inputs and outputs compose the particular languages spoken by those in their local communities (Pinker, 1997). Similarly, although responses to threats (such as spiders, snakes, and snarling dogs) are processed according to rules specialized in ways that are different from those governing language acquisition, the

fear system also involves flexible (and in this case, very rapid) learning involving which stimuli to associate with fear responses (Öhman & Mineka, 2001).

It is also now quite clear that Fodorian assumptions of encapsulation of cognitive modules and fixed automaticity of responses are not applicable to many specialized systems (Barrett & Kurzban, 2006). Instead, particular inputs may recruit multiple cognitive processes that stretch across domain boundaries depending on both the fundamental problem to be solved and the local environmental context (e.g., Ackerman et al., 2007; Kenrick, Ackerman, & Ledlow, 2003; Kenrick, Nieuweboer, & Buunk, in press). In sum, the key feature of thinking about cognitive processes in terms of domain-specific as opposed to domain-general rules is simply the presumption that distinct inputs are likely to be processed in distinct ways to facilitate important adaptive goals and not the presumption that such distinct processing is necessarily encapsulated or inflexible.

For reasons we detail in what follows, we believe that human decision rules involved in dealing with potential mates are often very different from those we use with siblings, which in turn often involve decision rules very different from those used with friends, status competitors, and enemies. However, we do *not* mean to imply (a) that none of the same decision rules are used across different social contexts, or (b) that each social domain involves one and only one set of decision rules, or (c) that we believe that our taxonomy of goals is precisely and finally the one true way in which to look at these issues. Our suggestion is more humble: There is some evidence to indicate that the distinctions we make are frequently quite useful in elucidating decision-making patterns that are not obvious from adopting a one-process domain-general approach (e.g., Ackerman et al., 2007; Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006; Maner et al., 2005). Many of the interesting questions about how domain-specificity works, and how and when the human brain processes information in relatively modular ways, remain to be discovered, and we return to these issues at the end of this article.

Social Domains and Their Associated Threats

If we think about social cognition as organized around functions associated with different fundamental problems, and if we presume that different goals are best met by considering particular decision-weights that affect the costs and benefits of particular decisions, we must next ask, What are the likely domains that characterize human social life? Several reviews of cognitive, behavioral, neurophysiological and cross-cultural evidence have suggested reasonable commonality among a set of domains that organizes a great deal of human social cognition and interpersonal interaction

(Bugental, 2000; Buss, 1999; Fiske, 1992; Kenrick, Li, et al., 2003; Kenrick, Neuberg, & Cialdini, 1999). We organize the following section around six key domains of social life—coalition formation, status, self-protection, mate acquisition, mate retention, and familial care—that have proved fruitful in other research areas (e.g., Griskevicius, Goldstein, et al., 2006; Kenrick, Li, et al., 2003; Kenrick et al., 2002; Maner et al., 2005). These domains represent fundamental problem areas, each affording a unique set of threats and opportunities that people must consider in deciding whether to accept or reject aid from others. We have chosen these six domains because we believe they help capture the range of important social goals likely to be traded off in the service of help-recipient decisions. We do not mean to suggest that this list is universally inclusive, although we do believe that it encompasses most of the important social situations people confront in everyday life (Kenrick, Maner, & Li, 2005). Cues relevant to domain-specific costs and benefits are proposed to motivate decisions depending on their immediacy and their domain-specific weights. The weight and attention given to these cues may remain relatively constant, or vary over time according to a recipient's past decision experiences (Messick & Liebrand, 1997), life history (Hill & Kaplan, 1999), and recent goal satisfaction (Förster, Liberman, & Friedman, 2007), but are always likely to be a function of the cues' heuristic fitness value.

Next we briefly review each domain and the types of trade-offs liable to be made when that domain is active (also see Table 1). For a more elaborated view on these domains (independent of help-recipient decision making), see Kenrick, Li, et al. (2003).

The *coalition formation* domain involves problems and opportunities linked to the construction and maintenance of successful ingroup relationships through stable interpersonal bonds (see also Baumeister & Leary, 1995; Caporael, 1997; Leary & Cox, 2008). These bonds, and the particular costs and benefits relevant to them, may include interactions at the level of the group or at the level of the dyad. At the group level, prosocial interactions are often regulated by norms against cheating the group, or "free-riding"—drawing more resources from the group than one gives back (M. E. Price, Cosmides, & Tooby, 2002; Yamagishi, 1986). Recipients may thus trade-off the benefits of aid to avoid the potential costs of appearing to free ride, including punishments and social exclusion (e.g., Shinada & Yamagishi, 2007). At the dyadic level, offers of help may be perceived as costly when they upset the inherent equality of the relationship and obligate repayment (e.g., Clark & Mills, 1979; Greenberg, 1980; Walster, Walster, & Berscheid, 1978). People may begin to adopt less reciprocity-based, more communal interaction patterns as coalition partners grow closer (Clark, Mills, &

TABLE 1: Fundamental Social Domains and Associated Threats

<i>Domains</i>	<i>Domain-Specific Goals</i>	<i>Domain-Specific Threats</i>
Coalition formation	Forming and maintaining reciprocal and cooperative alliances	Being perceived as free-rider Taking on difficult-to-repay debts Forming superfluous alliances Upsetting group coordination
Status	Gaining or maintaining prestige or respect from, and power over, ingroup members	Losing face Yielding status or opportunity to competitors
Self-protection	Protecting oneself and valued others from interpersonal physical and economic threats	Making oneself vulnerable to harm
Mate acquisition	Finding and attracting eligible, desirable mates with whom to establish romantic relationships	Developing connections with undesirable partners Signaling low mate value (being needy, poor, dependent, incompetent)
Mate retention	Maintaining existing romantic relationships through investment in one's partner and the deflecting of competitors	Appearing to develop extra-pair bonds Associating with potential interlopers Having partner develop any kind of a bond with potential interlopers
Familial care	Promoting the survival and reproductive potential of genetic relatives and attachment figures	Prolonging dependency Reflected association of negative qualities Uneconomical self-sacrifice

Powell, 1986; Lydon et al., 1997), especially when these coalitions are female based (e.g., Ackerman et al., 2007), yet recipients may nevertheless trade off help to avoid the negative reactions that can occur from feeling over-benefited (e.g., Sprecher, 1986, 2001).

The *status* domain involves gaining and maintaining access to the indicators of social power used to categorize and regulate social interactions (e.g., Barkow, 1989; Eibl-Eibesfeldt, 1989). Attaining status can result in greater interpersonal influence (Miller, Collins, & Brief, 1995), material resources (Cummins, 1998), self-esteem (Tesser, 1988), and even enhancement of mate value (especially for men; Kenrick, Sadalla, Groth, & Trost, 1990; Li et al., 2002). One of the prime indicators of status is *resource-holding potential*, which denotes the ability of an individual to successfully win a challenge against another individual (Parker, 1984; J. S. Price, 1988). Such challenges tend to occur within groups, where hierarchies are typically most influential (Anderson, John, Keltner, & Kring, 2001; Hogan & Hogan, 1991). Acceptance of help may be quite costly if it signals impaired resource-holding potential, particularly if the offer of help comes from a rival. Consistent with this possibility, threats to one's position in a status hierarchy (e.g., an offer of help) may lead people to adopt more conservative behavior patterns (e.g., refusing a rival's offer; Maner, Gailliot, Butz, & Peruche, 2007). Of importance, the relevance of status variations for men's, but not women's, mating outcomes may lead

male recipients to trade-off potential status losses in many situations where female recipients would not (i.e., when cues to a mating goal are also present).

The *self-protection* domain is centrally involved with the avoidance of physical threats from other people. Such threats may be especially likely to originate from outgroup members, including strangers and enemies (as ingroup members have more to lose by engaging in aggressive interactions). In fact, people heuristically associate many outgroup members with harm (e.g., Cottrell & Neuberg, 2005; Faulkner, Schaller, Park, & Duncan, 2004) and demonstrate biases to more readily perceive intentions of threat in outgroup members (e.g., Maner et al., 2005; Shapiro, Ackerman, Neuberg, Becker, & Kenrick, 2008). Situational cues to danger, such as ambient darkness, also increase people's threat-related prejudices against stereotypically dangerous groups (Schaller, Park, & Mueller, 2003). Under self-protective threat, ingroup members band together, increasing the relative likelihood of ingroup prosocial behavior (e.g., Griskevicius, Goldstein, et al., 2006; Kugihara, 2005; Van Vugt, De Cremer, & Janssen, 2007). The costs of putting oneself at risk for physical harm are high, as demonstrated by evolved mechanisms for the rapid processing of threatening stimuli (e.g., Ackerman et al., 2006; Becker, Kenrick, Neuberg, Blackwell, & Smith, 2007; New, Cosmides, & Tooby, 2007; Öhman & Mineka, 2001). Thus, trading off the benefits of aid for personal safety is likely to occur in most situations involving an active self-protection goal,

outgroup donors, and relevant environmental cues. The benefits of accepting help are of little use if one is not around to enjoy them.

The *mate acquisition* domain involves a two-sided set of problems and opportunities—choosing between potential mates and being chosen by them. The costs and benefits likely to influence help decisions within this domain thus relate to the evaluation of potential romantic partners and of one's own value as a potential mate. Evaluation typically involves assessment of partner status and resources (weighted more heavily by women), physical attractiveness (weighted somewhat more heavily by men), and attributes such as kindness and intelligence (highly valued by both sexes; e.g., Buss, 1989; Kenrick et al., 1990; Li et al., 2002; Li & Kenrick, 2006). When mate acquisition goals are activated, people are more willing to offer aid to the extent that it functions as a costly signal of their kindness and other desirable mate qualities (e.g., Griskevicius et al., 2007). This signaling function may represent a benefit for recipients above and beyond that garnered by the aid itself. However, interpretation of this costly signal as a benefit should depend strongly on recipients' initial perceptions of the potential donor's suitability. Recipients might be expected to turn down help from undesirable donors in situations in which a romantic relationship is implied (because of reciprocal entanglements; Gergen et al., 1975; Gross & Latané, 1974). Similar reactions might follow when the relationship selection goals of the donor clearly differ from those of the recipient, for instance, when the donor is interested in a short-term liaison but the recipient is not (characterized at the individual difference level by one's sociosexual orientation; Simpson & Gangestad, 1991).

The *mate retention* domain comprises a set of decisions involved in maintaining long-term romantic relationships. Long-term romantic relationships in which both a male and a female contribute to offspring welfare, although uncommon in other primates and in other mammals generally, are the most common human mating arrangement, found across all human cultures (Geary, 1998). Issues involved in maintaining mateships are qualitatively different from those involved in acquiring mates. For example, a man who expends a great deal of resources to throw a big party may impress a woman he is interested in dating, but the same behavior may indicate a lack of commitment once the two are married. Indeed, the mate retention category may itself be subdivided into two subsets of challenges—those involving maintenance of current relationship bonds and those involving avoidance of extra-pair mating pursuit (Campbell & Ellis, 2005). Both types of challenges may entail threats from outside sources, including appearing relatively less desirable to one's mate as well as increasing the proximity to potential interlopers (Schmitt, 2004). To reduce such concerns, people may alter perception of their

own romantic alternatives (Simpson, Gangestad, & Lerma, 1990) or reduce their psychological proximity to desirable same-sex competitors (Guttentag & Secord, 1983; Kenrick, Neuberg, Zierk, & Krones, 1994). One method of achieving the latter goal would involve sacrificing the benefits of needed aid by refusing help. If one's romantic partner seems to be showing interest in, or involvement with, potential interlopers, defensive responses include emotional and physical violence directed either at the partner (Shackelford, Goetz, Buss, Euler, & Hoier, 2005) or at the potential mate poacher (Campbell & Ellis, 2005).

The *familial care* domain involves managing the complex relationships among kin that emerge as a result of genetic overlap and attachment processes. Overlapping genetic structure both increases the advantages of providing aid (e.g., giving help to another family member provides a net benefit to shared genes; Hamilton, 1964) and reduces the potential costs associated with accepting help (e.g., biological kin are less likely to physically harm one another than are unrelated family members; Daly & Wilson, 1988; also see Kenrick et al., 2008; Laham, Gonsalkorale, & von Hippel, 2005). This result suggests that costs will be increasingly relevant among relatives who share fewer similar genes (up to and including step-relatives). However, prosocial interactions with unrelated others may sometimes mimic those between biological kin, presumably through the activation of shared cognitive modules, as when women treat close friends like family members (Ackerman et al., 2007). Although genetic relatedness does not change over time, the costs and benefits relevant to familial help decisions may change in reliable ways over the reproductive life span. Over the course of an individual's life history (Hill & Kaplan, 1999; Kaplan & Gangestad, 2005), he or she may move from a complete acceptance of aid, to trade-offs in favor of personal autonomy, to equality-based trade-offs, and back again. Throughout this course, the attachment relationship between parents and children (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1973) may regulate recipient reactions (e.g., Nadler, 1997). At an early age, aid moves unidirectionally from parent to child, with children pursuing maximal investment in themselves and parents pursuing a more equitable distribution of resources between offspring (Trivers, 1974). The attachment style that children develop during this time should affect children's later perception of parental help as either costly or beneficial for their autonomous goal pursuit.

A DOMAIN-SPECIFIC MODEL OF HELP-RECIPIENT DECISION MAKING

We propose that the decision to accept or refuse help is a function of both the potential benefits of attaining aid as well as the potential costs associated with the aid

interaction and that those costs and benefits will vary in predictable ways as a function of domain-specific decision biases. In many instances, a given situation may involve a conflict between different goals, and decisions to accept or reject help offers may elucidate how decision criteria vary, and sometimes conflict, across different motivational domains. Although a focus on costs and benefits is not itself a novel approach in addressing recipient decision making (e.g., Nadler & Fisher, 1986), a consideration of the particular domain-specific content relevant to these costs and benefits, and their functional prioritization, is unique. The functional approach to costs and benefits has proven useful for understanding the influence of ancestral selection (e.g., through fundamental goals) on proximate mechanisms (e.g., help-recipient decision making; Kaplan & Gangestad, 2007).

Within any given interaction in which one person offers assistance to another, different costs and benefits will be salient depending on what is being offered and who is offering it to whom, as well as other situational cues that may activate different domain-specific goals. A recipient's decision to accept or refuse help will depend on which social domain is currently active and which particular benefits and costs are associated with that domain. It is important to note that implicit and explicit perception of various costs and benefits need not be accurate. Many cues to threat and to opportunity are imprecise (e.g., Is the large male stranger really dangerous to me? Is the attractive woman really romantically interested in me?). This imprecision gives rise to signal detection problems, in which the costs of missing real threats and opportunities often far outweigh the costs of mistakenly perceiving false threats and opportunities. Cognitive appraisal mechanisms may thus incorporate evolved biases to minimize costs by overidentifying threat in some situations and overidentifying opportunities in other situations (Haselton & Buss, 2000; Haselton & Nettle, 2006; Nesse, 2005). That is, the costs and benefits that influence help-recipient decisions may be colored by evolved biases that exist to aid individual fitness.

It is also important to note that cost-benefit processing need not, and in many cases probably will not, occur consciously. Evaluation and processing of goal-relevant information can proceed automatically (without awareness or intent) when a goal is active (Bargh, 1990; Ferguson & Bargh, 2004), and the mere presence of such information can itself lead to the automatic activation of goals (Kay, Wheeler, Bargh, & Ross, 2004; Shah, 2005). Thus, the wide variety of domain-specific cues present in complex social situations is likely to collectively affect cost-benefit assessments, if only at a nonconscious level. This implies that help decisions may reflect costs and benefits applicable not only to the social domain activated directly by a help offer but also to peripheral domains. In the former instance, a recipient may want to accomplish

some goal within a given domain and need help to do so. The interpretation of an aid offer as threatening or beneficial would then be contingent on whether the offer is apt to satisfy or inhibit the active goal. In the latter instance, a recipient may perceive costs and benefits that are irrelevant to the help offer but impinge on a chronically important goal (e.g., a woman is worried that interacting with an unfamiliar man will endanger her physical safety). Thus, domain-specific costs and benefits may modulate recipient decisions, even when they are tangential to the content of the help and when recipients are consciously unaware of their influence.

How might people weight such co-occurring costs and benefits associated with an offer of help? We expect that cues which have value for a domain-specific goal will be processed according to their heuristic relevance for meeting or impeding that goal. For example, a smiling outgroup donor may present a cue to safety (a smile) along with a cue to possible danger (outgroup membership). A recipient with an active self-protection goal may weight the danger cue more strongly than the safety cue, as people tend to be conservative about protecting their own physical well-being. Although the weights assigned to particular costs and benefits may vary somewhat according to individual and situational factors, the universality of fundamental goal pursuit should produce commonalities in weighting across the key domains we have discussed (all human ancestors had to solve problems of affiliation, self-protection, and mate acquisition, for example, and certain features of these problems were consistent enough to exert strong directional selection on any mechanisms involved in solving these problems).

Analyzing Trade-Offs of the Help Interaction

The decision to accept or refuse help is proposed to be influenced by costs and benefits associated with the active social domain and the relative functional importance of those features. When the potential risks from a domain-specific threat outweigh the potential gains, help offers should be rejected. We can therefore frame recipient decisions using the following general expression:

$$D_{\text{accept}} = B * w_{D,B} - C * w_{D,C}$$

The decision to accept help is presumed to be a function of perceived benefits (B ; e.g., satisfying the current need, fulfilling normative pressures to accept, domain-specific payoffs, etc.) and perceived costs (C ; e.g., domain-specific hazards, equity, etc.) each multiplied by a domain-specific, functional weight. A negative difference score (costs outweighing benefits) would produce a decision to refuse help. Consider the following examples involving aid at the grocery store: help offered by a close family member, and help offered by a hulking, unfamiliar man.

Let us assume the same benefit is offered in both instances (carrying home an unwieldy third bag of groceries, which we give a value of \$5). Assume also that the person making the offer requests the same repayment cost in both cases (a cup of the expensive gourmet coffee you have in one of the bags, which we also give a value of \$5). In the first example depicted next, the potential helper is a sibling. In this case, the genetic relatedness between donor and recipient enhances the benefits of acceptance (the extra bag is carried, and you get to spend time with a valued relative, for a weight of 1.5 for *B*), whereas the communal expectations of familial relationships decrease the costs of acceptance (your brother shares half your genes, so the “cost” of taking anything from him is functionally cut in half, for a weight of .5 for *C*; see Kenrick & Sundie, 2007).

Example 1 : Sibling

$$\begin{aligned} D_{\text{accept}} &= (\$5 \times 1.5) - (\$5 \times .5) \\ &= (\$7.50) - (\$2.50) \\ &= (+) \$5.00 \end{aligned}$$

However, in the second situation (see Example 2), the donor’s identity has no particular effect on the benefits (e.g., third bag is still carried, for a weight of 1 for *B*), but his threatening appearance may affect the perceived costs (e.g., a weight of 2 for *C*).

Example 2 : Large stranger

$$\begin{aligned} D_{\text{accept}} &= (\$5 \times 1) - (\$5 \times 2) \\ &= (\$5.00) - (\$10.00) \\ &= (-) \$5.00 \end{aligned}$$

Thus, the *exact same* offer of help might be accepted in the first scenario (which yields a net value for a decision to accept at \$5) but not the second (which yields a net value for a decision to accept at negative \$5).

Now consider another case involving a contrast between an attractive woman making an offer of help to a single man and her offering to help a man in a committed romantic relationship (again, assume that the benefit being offered is help carrying home a third bag of groceries, and the cost is a cup of coffee both with a market value of \$5 before any weights are considered). For a single man (see Example 3), establishing contact and a possible reciprocal relationship with an attractive woman enhances the benefits of acceptance (for a weight of 2 for *B*), but there is a slight concern on his part that he may be perceived as less masculine because he cannot manage the unwieldy extra bag (for a weight of 1.1 for *C*).

Example 3: Single man

$$\begin{aligned} D_{\text{accept}} &= (\$5 \times 2) - (\$5 \times 1.1) \\ &= (\$10.00) - (\$5.50) \\ &= (+) \$4.50 \end{aligned}$$

For a committed man (see Example 4), the benefit likely stops at the aid itself (for a weight of 1 for *B*), whereas reciprocal contact with an attractive woman might pose a slight threat to the stability of his current relationship (for a weight of 1.2 for *C*).

Example 4: Committed man

$$\begin{aligned} D_{\text{accept}} &= (\$5 \times 1) - (\$5 \times 1.2) \\ &= (\$5.00) - (\$6.00) \\ &= (-) \$1.00 \end{aligned}$$

Again, the *exact same* offer of help from the same person might be accepted by one recipient (facing a net value for a decision to accept at \$4.50) but not by another (facing a net value for a decision to accept at negative \$1.00).

Finally, consider one other example in which the same donor of aid activates different types of potential threat depending on the recipient’s currently activated motivational state. Within the same grocery store context, a muscular, handsome man offers help to a single woman. However, in one encounter, the woman is motivated by a mate acquisition goal (she is on the way home from a romantic movie in which the heroine finds true love in the arms of a charming and handsome stranger) and, in another encounter, by a self-protection goal (she is on the way home from a movie about a serial killer who preys on single women). When the woman has a romance-motive activated (see Example 5), the dominant features of the man make appear him more attractive, enhancing the benefits of acceptance (for a weight of 2 for *B*).

Example 5: Romance-motivated recipient

$$\begin{aligned} D_{\text{accept}} &= (\$5 \times 2) - (\$5 \times 1) \\ &= (\$10.00) - (\$5.00) \\ &= (+) \$5.00 \end{aligned}$$

If the woman has a protection-motive activated (see Example 6), the dominant features of the man instead make him appear more intimidating, increasing the costs of acceptance (for a weight of 2.5 for *C*).

Example 6: Protection-motivated recipient

$$\begin{aligned} D_{\text{accept}} &= (\$5 \times 1) - (\$5 \times 2.5) \\ &= (\$5.00) - (\$12.50) \\ &= (-) \$7.50 \end{aligned}$$

Now, the *exact same donor's* offer of help might be accepted by the recipient in one motivational state (facing a net value for a decision to accept at \$5.00) but not by the same person under different motivational circumstances (facing a net value for a decision to accept at negative \$7.50). These examples highlight the specificity of recipient decision making—help offers and help-donors cannot simply be grouped into domain-general, positive and negative categories.

Note that in these examples, there are qualitatively different threats that affect help-decisions depending on whether the donor is a relative or a stranger, whether the donor is a male or a female, whether the recipient is single or in a committed relationship, and whether the recipient is motivated by mate acquisition or self-protection goals. Although domain-specific weights are based on qualitatively different potential threats (as well as a comparison of domain-specific cues in the environment), ultimately a person must decide to say yes or no based on some computation of the different weights. To arrive at a decision, then, the different qualia must at some point be converted to a quantitative value. Of course, costs and benefits are themselves not static elements in an aid interaction (Messick & Liebrand, 1997). Recipients may negotiate interactions to attenuate potential costs. For instance, in the earlier example of the committed man being offered help by an attractive woman, the man might mention his significant other to make the donor aware of his relationship status, thus heading off any future romantic overtures. This negotiation process may make decisions easier and may help prevent potentially negative reactions of the donor that stem from a denial of the help offer.

To what extent are cost-benefit analyses like these actually involved in decision making? On one hand, some decisions can be made without a careful consideration of all the relevant costs and benefits (e.g., Cialdini, 2001; Langer, 1994). Supposedly irrational decisions, like refusing needed assistance, seem to imply that people are not in fact sensitive to the various costs and benefits present in social interactions. Three points are relevant to this issue. First, arguments of irrationality presuppose a certain objective standard of rationality, one that is typically grounded within proximate outcomes. Sometimes a specific decision is indeed suboptimal in a particular situation but follows from the use of underlying decision rules that, on average, are likely to result in adaptive outcomes (Gigerenzer & Todd, 1999; Haselton & Buss, 2000; Krueger & Funder, 2004). An important assumption associated with a functional, evolutionary approach is the notion that what looks irrational today may in fact be quite rational from the perspective of evolved predispositions (which were designed to produce outcomes that were generally functional in recurrent ancestral environments

and not to be products of thorough rational foresight; e.g., Cosmides & Tooby, 1994, 1996). Second, cost-benefit analyses have traditionally been considered as involving conscious deliberation. As we stated earlier, a growing body of research highlights the power and flexibility of rapid nonconscious processing, which allows for the evaluation and analysis of complex stimuli (e.g., Bargh, 1997; Ferguson, Hassin, & Bargh, 2008). Third, evidence indicates that people's decisions *do* often take cost-benefit trade-offs into account (e.g., Anderson, 2003; Cary & Carlson, 2001; Fessler, 2001; Frijda, 2004; Li et al., 2002).

BEYOND DOMAIN-GENERALITY IN RECIPIENT REACTIONS

Thus far, we have framed recipient decision making as highlighting the functional, domain-specific trade-offs common to aid interactions. This approach helps to advance our understanding of recipient reactions by placing domain-general models (e.g., threat to self-esteem, equity, and reactance) within their proper contexts and by expanding our thinking to include costs and benefits left untouched by these previous models (e.g., factors specifically linked to self-protective vs. mate acquisition vs. mate retention motives).

From a domain-specific perspective, self-esteem, equity, and reactance mechanisms still provide useful predictive power, although they are expected to apply primarily within some domains and not others. Consider the initial example of the woman stranded by a stalled car. Would such a woman refuse an offer of a ride from a strange man because it jeopardized her self-esteem, or is another sort of threat more central to her reticence to accept aid? An attractive woman driving an expensive luxury car is exactly the type of donor who is likely to elicit unfavorable self-comparison processes, yet in this situation these concerns are likely to be put aside in favor of self-protection. Further, inequity is likely to be much more relevant to the type of exchange relationships prevalent within the coalition formation and status domains than to problems associated with family members or potential mate poachers (Kenrick et al., 2008). People do not appreciate being recipients of *noblesse oblige* from those they perceive to be peers, for example, but they are less likely to lose sleep over excessive generosity from their parents. Reactance, on the other hand, may be more common to kin relationships and recipients concerned about being cheated than among those dealing with others above them in the status hierarchy. In fact, there are well-accepted asymmetrical expectations for deference and control within many hierarchical relationships (Fiske, 1992).

Thus, an important strength of the domain-specific model is that it can integrate previous models, helping us focus on when and why different motivational processes will matter. At the same time, this approach links different kinds of phenomena. From this perspective, refusals of help are seen as neither anomalous nor as manifestations of one or another limited type of psychological process. Instead they are seen as intimately linked to other critical sets of everyday social problems and opportunities, such as those involving trade-offs linked to affiliation, status, self-protection, mate acquisition, mate retention, and familial care.

At first blush, thinking about domain-specificity may seem less parsimonious than attempting to organize phenomena with a single domain-general model. Of course, parsimony is not the only criterion of a good scientific theory, and in fact, parsimony itself implies the use of only as many principles as are necessary to accurately depict a phenomenon (and not fewer). Further, although cognitive processing is unlikely to be fully explained in terms of a single domain-general model, the broader evolutionary perspective from which our domain-specific model springs provides parsimony of a higher order sort. Broad concepts of inclusive fitness, sexual selection, and differential parental investment, for example, have been found to link a wide variety of previously unconnected behavioral phenomena across a wide range of different animal species (cf. Crawford & Krebs, 2008; Dunbar & Barrett, 2007; Schaller, Simpson, & Kenrick, 2006). For example, sexual selection processes link phenomena as seemingly disparate as conspicuous human altruism, aggression in young men, and mating displays in peacocks (Ackerman & Kenrick, 2008; Griskevicius et al., 2007; Wilson & Daly, 1985). What makes an evolutionary approach most useful, however, is not the reduction of all phenomena to broader phenomena but the direct attention to the particular functional mechanisms that solve particular problems. To say that all the behaviors of any organism are ultimately linked to natural selection, although true, is not as informative as attempting to understand the specific functions of specific mechanisms. The bone structure underlying a bat's wing, a seal's flipper, a giraffe's hoof, and a human's hand share most of their features, but they perform very different functions, well suited to the different ecological demands confronting each species.

IMPLICATIONS OF THE FUNCTIONAL, DOMAIN-SPECIFIC PERSPECTIVE

In the previous sections of this article, we outlined the notion that distinctly different costs and benefits may influence recipient decisions within different social

domains. We now consider three types of implications generated by this approach, including a sampling of new predictions for help-recipient reaction research (also see Table 2), a hierarchical system of comparing functional weights between domains, and an application of these ideas to the process of giving help.

Predicting the Costs of Benefits

As previously detailed, help-recipients are likely to make trade-offs among different costs and different benefits depending on which social domain is active. Using the decision rules common to these domains, and the functional goals they address, we can generate a number of empirically novel and conceptually interesting predictions about recipient reactions.

Coalition formation. Within the coalition formation domain, an offer of help may evoke different costs and benefits depending on whether the potential recipient is interacting with others at the level of the group or at the level of the dyad. In a group context, a help-recipient should be especially concerned with perceptions of his or her ability and suitability as a group member. Thus, an offer of help from another group member is a double-edged sword—signifying on one hand the recognition of the recipient's connection to the network but also raising the possible specter of neediness. A recipient motivated by a desire to affiliate might initially be expected to accept most offers, but if acceptance might lead current group members to view the recipient as a potential drain on group resources, this should be weighted heavily as a potential cost. Refusing help could therefore prevent one's being perceived as a potential free rider. It is interesting to note (and not predicted from prior theoretical perspectives) that the offer itself may arouse positive feelings of inclusiveness and care and yet nevertheless result in refusal. An offer of aid from an outgroup member, in contrast, is likely to be viewed suspiciously for other reasons. For instance, the instructors of a born-again fundamentalist youth group may refuse a Unitarian church member's offer to supervise a field trip because his religious beliefs conflict with their values or because they do not trust his intentions (Cottrell & Neuberg, 2005).

In the context of a dyad, other cost-benefit considerations might be more relevant. On one hand, friends (who represent common coalition members) should be relatively unconcerned about inequity (Clark et al., 1986) and thus feel free to accept help and repay it at a later time or in a different form (Lydon et al., 1997). On the other hand, even close relationships can become imbalanced over time if benefits are not reciprocally exchanged (Argyle & Henderson, 1984; Sprecher, 1986, 2001). This should be especially true for casual coalition

TABLE 2: Examples of Important Recipient, Donor, and Situational Factors Specific to Each Social Domain

<i>Domain</i>	<i>Recipient Factors</i>	<i>Donor Factors</i>	<i>Situational Factors</i>	<i>Illustration</i>
Coalition formation	Gender Personal individualism-collectivism Social anxiety Interpersonal trust Self-efficacy	Relational distance from recipient History of reciprocity Dissimilar values High power within group	Societal individualism-collectivism Group level vs. dyad level	A person who hasn't repaid earlier assistance, refuses to let a fellow group member pay for lunch
Status	Need for achievement Wealth Attractiveness Resource-holding potential	Competitor for one's position In-group member Relatively equal status Same-sex	Proximity of in-group members <i>Men:</i> Presence of potential mates	During a board meeting, an employee denigrates helpful advice from an equally ranked coworker
Self-protection	Belief in a dangerous world Small physical size Female Age Stereotypical beliefs	Stranger Male Member of "dangerous" outgroup Large physical size Unusual features	Unfamiliar surroundings Darkness Nonpublic environment Close proximity	A stranded woman refuses a car ride from an unfamiliar man
Mate acquisition	Gender Interest in new romantic relationships Personal mate value	Relationship status Romantically undesirable <i>Men:</i> Low social status, low amount of aid investment <i>Women:</i> Low attractiveness, infertile	Proximity of other potential mates Gender-role violations	Women refuse offers of help from low mate-value men; men refuse female-donated help that threatens their masculinity
Mate retention	Relationship satisfaction Attachment style Sociosexuality History of romantic infidelity	High mate-value Same or opposite-sex History of romantic infidelity	Proximity of one's romantic partner Proximity of mutual acquaintances	Men who are with their female partners refuse help from other, attractive women; women who are with their male partners refuse high-status male help
Familial care	Age Need for autonomy Attachment style Life history stage	Biological relatedness Relatively younger age	Proximity of nonfamily members	Teenage children refuse help from their (socially passé) parents

members but may also extend to friends, who tend to have less strongly communal relationships than do other close relationships like family members (Clark & Mills, 1993), particularly if they are men (Ackerman et al., 2007). In these situations, aid refusal may help prevent potentially costly imbalances. In sum, whenever accepting help threatens a person's ability to establish or maintain group bonds, that help is more likely to be refused.

Status. Relative prominence in a status hierarchy affords a number of benefits, and conversely, loss of status can inflict harsh costs. Therefore, individuals trying to ascend in a hierarchy may consider different costs and benefits than those trying to maintain their current

position. Someone striving to improve his or her resource-holding potential might be especially concerned about help offers originating from donors of relatively equal status to themselves. People of equal status are potential competitors for the next step up in a hierarchy. When status opportunities are salient, therefore, two assistant managers are likely to be rivals, whereas CEOs and mailroom workers are not. If an offer of help is made in public, it could accentuate a status threat. In a public arena, accepting aid from another person might suggest a lack of ability or resource-holding potential in the recipient while casting the donor in a positive light. Once people have attained status, they may perceive less threat and greater benefit by receiving help from donors

below them (Anderson & Berdahl, 2002). However, if that status position becomes unstable, a recipient may weight the potential costs of accepting help more strongly (e.g., Maner, Gailliot, Butz, et al., 2007) and therefore be more likely to turn offers down.

Perceived threats to status may also increase when help is offered by a member of the same group as the recipient. Ingroup members share both common bonds (useful for establishing status hierarchies) and a common history (useful for maintaining knowledge of relative status). There are dynamic trade-offs between getting along with ingroup members and getting ahead of them (Hogan, 1983), and these may make the costs and benefits of status seeking especially salient. Thus, help offers from strangers should have relatively little impact on one's status, but when a status motive is active, help coming from a familiar other may be particularly threatening (e.g., Brickman & Bulman, 1977). Employees of a company typically compete with each other for promotions, not with employees at other companies.

As suggested earlier, recipient sex is an important factor when considering the cost of status threats. Men's romantic desirability improves as a function of their status (Buss, 1989; Li et al., 2002), and thus, men who accept help in the presence of potential mates may suffer loss of mating opportunities as well as loss of status. Men may therefore more heavily weight the costs of potential status loss than women. This finding highlights the fact that a given behavior may be linked to multiple motives. Thus, we would expect that the same person may respond differently to the same situation, depending on which motive is currently most salient. If one assistant manager offers help to another, the response may differ if the potential recipient has just been thinking about an attractive coworker as opposed to contemplating a possible promotion.

Self-protection. Self-protection is an imperative goal for all people, and any factors that highlight a recipient's susceptibility to harm should represent extremely salient costs. For instance, individual differences such as old age, small physical size, physical infirmity, and a chronic belief that the world is a dangerous place (Altmeyer, 1988) may boost self-perceptions of vulnerability and thus increase the likelihood of rejecting help offers. Unfamiliar social or ecological surroundings may also amplify self-protective concerns. For example, someone walking around a large city with a reputation for danger (activating a self-protection goal) may ignore help offers and even casual greetings (as Milgram, 1970, observed in New York City). In addition, circumstances that afford limited means of escape, as when an interaction occurs in close proximity or in private, should elevate perceived threat. One example of this process occurs when recipients are placed in the dark. Ambient darkness increases

feelings of vulnerability and can even activate intergroup stereotypes relevant to danger (Schaller et al., 2003).

"Dangerous" others include those stereotypically associated with physical aggression, parasites and disease, and ideological value differences (e.g., Cottrell & Neuberg, 2005; Faulkner et al., 2004; Kurzban & Leary, 2001). Donors belonging to such groups (and outgroups more generally) may commonly find their aid offers rejected. For instance, we might expect that since the events of September 11, 2001, American travelers have become more suspicious of Arabs and might be more reticent to accept offers of help from them. In addition, male donors should be more likely to elicit concerns about self-protection when such motives are salient, as male morphology is more likely to be associated with threat (Becker et al., 2007), and men actually do cause greater physical damage than women (Daly & Wilson, 1988).

Donors may also (inadvertently) trigger self-protective threats in less obvious ways. Evolved biases to minimize self-protective dangers can lead to the over-perception of threat (Haselton & Nettle, 2006). For instance, unusual or sudden movements may exaggerate donor threat by suggesting ulterior motives or mental illness, whereas help from a disabled person might engender threat similar to that from a communicable disease (Park, Faulkner, & Schaller, 2003). Although an active self-protection motivation should reduce acceptance of help from outgroup donors, it may have the reverse effect with ingroup donors. Indeed, recent research suggests that self-protective threats enhance within-group social bonds (Griskevicius, Goldstein, et al., 2006; Van Vugt et al., 2007).

Mate acquisition. Trade-offs within the mate acquisition domain, and their associated costs and benefits, are linked to the mate values of both donors and recipients. A person with high mate value might be expected to receive a disproportionate number of help offers. However, accepting help from another person may inadvertently signal an intimate bond with that person. An active mate acquisition goal might therefore lead attractive recipients to reject aid offers more often than recipients of lower mate value (especially when acceptance might implicitly obligate a potential romantic connection to the donor). Thus, the cost-benefit ratio may be unfavorable when women receive offers from low-status or resource-poor men and when men receive offers from women who are judged unkind or lack cues to high fertility (such as youthful attractiveness), as these characteristics are universally valued in mates (Buss, 1989; Kenrick & Keefe, 1992; Shackelford, Schmitt, & Buss, 2005). The weighting of costs and benefits may be adjusted by other evolved biases as well. For instance, men exhibit a tendency to perceive that attractive women are romantically

interested in them (Haselton & Buss, 2000), increasing the likelihood of acceptance from these donors. Women, on the other hand, exhibit an underperception of commitment bias (Haselton & Buss, 2000), which may lead them to devalue help offers from most men. This evaluation of male investment may also depend on the number of male donors in close proximity (e.g., Ackerman & Kenrick, 2008). When a single male suitor is present, a motivated woman may reject small help offers to test a man's enthusiasm for and willingness to pursue her. A multitude of suitors might reverse this behavior: A woman could publicly accept help from several desirable men, creating competition between potential mates and increasing the overall amount of aid she receives.

Offers of help might also interact with a recipient's preferred relationship strategy. When a mate acquisition goal is active, varying thresholds for mate acceptability should lead to different refusal rates for men and women. Women are choosier than men when accepting mates and generally more inclined to restricted, or monogamous, mating arrangements (Geary, 1998; Kenrick et al., 1990; Li & Kenrick, 2006). Consequently, compared with men, women should be choosier when accepting help offers that are tied to romantic entanglements (except when those help offers denigrate a man's suitability as a mate). Similarly, recipients should reject help more often when their preferences for short-term or long-term relationships run counter to their perception of donors' intentions. Individuals interested in casual relationships may refuse help from others who they view as intent on marrying them, for example, whereas individuals intent on marriage may refuse help from others they perceive as interested in a casual fling. It is interesting that an active mate acquisition motivation has been found to promote public help-giving in women and heroic help-giving in men (Griskevicius et al., 2007), behaviors that may promote long-term and short-term romantic relationships, respectively.

Mate retention. After a romantic relationship has been established, a different set of costs and benefits is likely to become salient with regard to offers of help. When relationship maintenance is salient, issues of commitment, as well as potential issues of extrapair mating, become relevant. If a man accepts help from another man, particularly a desirable man, that could degrade perceptions of the recipient's mate value in the eyes of his current romantic partner as well as create potentially dangerous bonds between her and the desirable donor. Opposite-sex donors may also threaten a relationship, but in a different manner. For example, whereas romantically single women were predicted to accept help from a variety of desirable men, women in established relationships who accept this kind of aid risk abandonment by their partners, who may perceive accepting such gifts

to be a precursor to infidelity (Buss & Shackelford, 1997). An active mate retention goal might therefore lead recipients to reject help offers from romantically desirable opposite-sex sources but not necessarily from donors who are clearly of lower mate value than the recipient's own partner. Of interest (and contrary to the pattern predicted under a mate acquisition motive), this suggests that recipients in committed relationships might be more likely to accept aid from donors who would otherwise be considered relatively less desirable.

A romantic partner's physical proximity may moderate the weight assigned to various costs and benefits. If the romantic partner is absent, individuals may be more amenable to the offers of desirable donors. Close partner proximity, on the other hand, should magnify mate retention costs. For example, when a couple is out shopping, a man might not accept help from a female donor if his response could be interpreted as flirtatious. Acceptance in such situations could lead to partners' anger and jealousy, directed both toward the potential interlopers (Campbell & Ellis, 2005) and toward recipients (e.g., Shackelford, Goetz, et al., 2005). Conversely, displays of commitment to one's partner may also result (Shackelford, Goetz, et al., 2005). A man who sees his girlfriend accept threatening help might competitively respond by lavishing attention and affection on her.

Familial care. Because of biological overlap, family members are, compared with nonrelatives, more likely to share the benefits of prosocial interactions (Hamilton, 1964). Hence, help-rejection should be less common in families than in other social relationships. However, at least three factors should moderate within-family decision making: genetic relatedness, attachment processes, and life history. As the inclusive fitness benefits of help decline, acceptance of help should decline as well. For instance, resource-provisioning affords greater reproductive utility for adolescents and women (until menopause) than it does for older adults and men. Implicit awareness of this fact is demonstrated by people's propensity to preferentially give high-cost help to young female relatives (Burnstein, Crandall, & Kitayama, 1994). Help-recipient decisions should show similar patterns, with young and female relatives being generally more likely than older men to accept high-cost help. Following the logic of inclusive fitness, as genetic relatedness decreases from full siblings through step-relatives, acceptance rates should also decline. It is important to note, however, that kin recognition typically involves the engagement of developmental attachment processes (Lieberman, Tooby, & Cosmides, 2007). A nonbiological relationship may be virtually indistinguishable from a biological one when a child is reared from a very young age within a family. The attachment style that individuals develop during these early years

might also be expected to affect the willingness to accept help when familial care goals are active (e.g., compared to secure individuals, avoidant and anxious recipients may reject help more often, but for different reasons).

Responses to help offers should also vary reliably across a recipient's life history (Hill & Kaplan, 1999; Kaplan & Gangestad, 2005). At a very young age, children are completely reliant on familial care and receive only benefits by accepting it. The desire to extract resources from parents persists even beyond the point at which parental costs outweigh the benefits the children receive (resulting in parent-offspring conflicts such as problems with weaning; Trivers, 1974). As children approach adolescence, however, they become motivated to establish an independent sense of identity from their family, to develop autonomy and new social networks (Zirkel & Cantor, 1990). Thus, people should universally accept familial help at young ages but gradually scale back this tendency, especially when familial care conflicts with other active fundamental motivations. For instance, parents are often quite willing to provide mating-related assistance to their unmarried children (such as introducing them to potential marriage partners who meet the parents' criteria), but children do not always look kindly on this form of assistance (e.g., Ackerman & Kenrick, 2008; Buunk, Park, & Dubbs, in press; Kenrick & Keefe, 1992).

A Hierarchy of Domain-Specific Weights

One intriguing implication of the current perspective is that the functional importance of domain-specific goals may allow us to weight costs and benefits between domains as well as within them. Consider that in many help interactions, cues to multiple domains are present (e.g., a recipient may be offered help by a friend who is also a coworker). Evidence from goal-pursuit research would suggest that whatever domain is initially active is likely to run the show (see Bargh & Huang, in press; Shah, Friedman, & Kruglanski, 2002), suppressing activation of other domains and thus increasing the weight given to costs and benefits relevant to the initial domain. We propose that it is not only the order of domain-specific goal activation that moderates cost-benefit weighting but also the recurrent functional significance of the particular domains in question. That is, cues to a functionally important domain may produce domain-specific processing (and be weighted relatively strongly) even in the face of an active but less functionally important domain. If so, we may be able to construct a hierarchy of domain-specific weights that, though certainly influenced by individual and cultural differences, involves enough universality to be empirically useful.

By casting the social domains in terms of a hierarchy of goals, we can make predictions both about relative weight

and interactions between multiple active domains. Comparatively more weighty domains are those which, were they not met, would have most severely impinged on individuals' genetic fitness in ancestral environments (see Cosmides & Tooby, 1994). Given the central roles of survival and sexual reproduction in evolutionary processes, it follows that the processing of social situations would often be modulated by motivations linked to these goals (Neuberg, Kenrick, Maner, & Schaller, 2005). For example, Plutchik (1980) suggested that stimuli indicating the presence of an enemy acutely activate a self-protective motive and associated affective responses (e.g., fear or anger, depending on the particular decision rule). Similarly, stimuli indicating the potential for reproductive success or failure may activate a mating goal and its associated affective responses (Scott, 1980).

An emerging body of evidence supports the functional prioritization of different social domains. With respect to self-protection, basic attention and memory processes are finely tuned to manage threatening stimuli (e.g., Ackerman et al., 2006; Becker et al., 2007; Fox et al., 2000; Nairne, Thompson, & Pandeirada, 2007). People also show a number of cognitive, affective, and behavioral biases designed to minimize these potential dangers (e.g., Correll, Park, Judd, & Wittenbrink, 2002; Eberhardt, Goff, Purdie, & Davies, 2004; Haselton & Nettle, 2006; Maner et al., 2005; Park, Faulkner, & Schaller, 2003). With respect to mate acquisition, people show similar attention and memory attunements (e.g., Maner, Gailliot, & DeWall, 2007; Maner et al., 2003) and biases designed to maximize potential mating opportunities (e.g., Griskevicius, Cialdini, & Kenrick, 2006; Haselton & Buss, 2000; Maner et al., 2005).

The importance of self-protective and mate acquisition goals suggests that help-recipients will, on average, prioritize cues to these domains over other domain-specific cues present in a help interaction (though this does not mean that people will completely ignore less weighty goals). Between these two primary domains, one might initially expect that mating goals trump self-protective goals because of the importance of differential reproduction for evolutionary success (and this should be true in the long term). However, failure to respond to self-protective threats can result in immediate and severe injury or death (Öhman & Mineka, 2001). The domain of greatest relative weight in recipient decision making may therefore typically be self-protection—that involving dangers to life and limb (Neuberg et al., 2005). Dead people don't get to reproduce.

Among other domains, the structure of relative weights is liable to be less universally stable. Consider the domain of mate retention. Compared to other species, humans do exhibit a significant degree of long-term pair bonding (Alexander & Noonan, 1979), and thus threats to one's committed relationship should take

priority in help interactions. However, the strength of mate retention goals varies as a function of one's commitment to a romantic relationship and openness to forming new relationships (e.g., Simpson & Gangestad, 1991). In a highly committed relationship, mate retention goals may often outweigh goals for further mate acquisition (e.g., Lydon, Fitzsimons, & Naidoo, 2003; Lydon, Meana, Sepinwall, Richards, & Mayman, 1999). Among the typical undergraduates who participate in social psychological experiments, commitment to mate retention goals may be less relevant than for older adults. For these young students, the coalition formation and status domains may have a somewhat higher priority. Again, the relative weights placed on each of these domains in help interactions may be qualified by other person and situation factors. For instance, men receive greater reproductive benefits from status elevation than do women (Buss, 1989; Li et al., 2002), and so we might expect that men give more weight to (same-sex) status cues than do women. Women, on the other hand, gain relatively fewer reproductive benefits from status but receive many benefits from maintaining strong interpersonal bonds (e.g., Ackerman & Kenrick, 2008; Ackerman et al., 2007; Cross & Madson, 1997; Taylor et al., 2000), potentially making coalition cues weightier for women than for men (though see Gabriel & Gardner, 1999; Van Vugt et al., 2007).

Finally, familial care threats are typically quite important from an evolutionary perspective. For example, parents may be quite willing to trade-off their own physical health for their children's (which makes functional sense given an ultimate goal of genetic fitness). However, the threats arising specifically from help offers within the familial care domain (i.e., between family members) are liable to be quite weak. Interactions in this domain are moderated by the degree of genetic overlap between donor and recipient (Hamilton, 1964). This overlap enhances the benefits of help interactions between biological kin (helping my brother helps me as well) while mitigating the costs (kin are unlikely to deceive me or provide worthless aid). Thus, threats relevant to the familial care domain should often receive minor weight in recipient decisions relative to those in other domains.

When a help interaction contains cues to opposing domains, the domain of greater functional weight may trump other domains (Neuberg et al., 2005), either by suppression of goal activation or by prioritization of particular costs and benefits (the resulting effect on domain-specific weights would be similar; e.g., Shah et al., 2002; Tipper, 1992). Thus, if both a mating opportunity and a physical threat are present, response to the physical threat should often trump response to the mating opportunity (Neuberg et al., 2005). This finding also suggests that the weighting of costs and benefits is flexible—it depends in

part on the other domain-specific cues present in a help interaction. Although the structural features of this process (e.g., directionality, context sensitivity, hysteresis) require future empirical elaboration, there is some evidence that functional trumping does occur. Consider: When a self-protective motive is triggered in young men, memory for threatening faces is elevated at the expense of memory for attractive female images (Ackerman et al., 2005). However, when a romantic motive is induced in these same men, memory for threatening faces does not decline (Ackerman et al., 2005). In a similar vein, researchers have tested paired comparisons of stimuli based on Maslow's (1954) hierarchy of needs (some levels of which match the theoretical weighting system presented here). These researchers have found that people prioritize stimuli that are functionally more potent (e.g., safety items) over stimuli that are less functionally important (e.g., belongingness and love items; Graham & Balloun, 1973; Strong & Fiebert, 1987). This type of trade-off makes functional sense: People who miss a single mating possibility are likely to have future opportunities; people who miss a life-threatening danger are not.

IMPLICATIONS FOR GIVING HELP

Many of the applications of social and personality psychology involve help provisioning in one form or another. The importance of helping is not limited to applied psychologists involved in community, health, or clinical interventions but is instead central to most human relationships, whether those be between friends, romantic partners, family members, or coworkers. As one simple illustration, researchers interested in increasing human happiness have found that one path to greater subjective well-being is to practice offering help to others (e.g., Lyubormirsky, 2007). If one wants to offer help to someone in need, whether in one's professional capacity or in one's everyday life, one hopes that it will not be turned down. Yet, as we reviewed at the opening of this article, people in desperate straits—the very people for whom help is most likely to be helpful—often refuse much-needed aid.

We have so far addressed the particular costs and benefits from the perspective of the recipient, but how might these same considerations be relevant to the aspiring altruist? If specific threats are associated with specific domains, different implications may apply depending on the donor, the recipient, and the situation. These will also depend on which motive is currently active in the recipient and which motives are likely to be activated by the help interaction. A better understanding of domain-threat congruency could therefore be used to predict the threats most relevant to

particular kinds of social interactions (e.g., physical vulnerabilities are likely to be salient during interactions with stereotypically dangerous donors). This perspective might also be helpful in predicting when extraneous features of an interaction might sour a recipient's response to a help offer. A good-hearted but naive benefactor might unwittingly trigger threats in a peripheral domain or might try to provide help relevant to one domain when another, competing goal state is active in the recipient. This problem becomes particularly important when a recipient actually does need aid (as in some of the real-world examples presented at the beginning of this article) but refuses to accept it.

The first step to ensuring that help is not turned away should be to identify the most relevant domains and their associated threats for a given aid interaction. Consider the initial example of a woman stranded by a flat tire. An unfamiliar man who stops to help faces several challenges. It is conceivable that his aid will imperil the woman's self-esteem or cause her to feel as if she is unnecessarily indebted. Perhaps more important, as a strange man, he may present a physical threat. Further, if the man is a member of a stereotypically dangerous outgroup, perceptions of self-protective threat will be elevated. If the donor was aware of the potential threats that he presents, and the relative functional weight of each, he might use that information to help smooth the help exchange. Because a recipient's concerns with personal safety are likely to be highly prioritized (Neuberg et al., 2005), this helpful man may want to downplay any potential physical threat by smiling and remaining in clear (but not too close) view of the recipient and by offering help that allows the recipient to feel safe. If he has a female friend with him, it might be better to have her offer the help. Otherwise, he might offer aid that does not involve close physical proximity, such as offering to drive to a service station and send back a mechanic or making a call to one of her friends or to the highway patrol on his cell phone. A variety of such steps, in a variety of situations, could thus be used to mitigate domain-specific threats.

Considerations of domain-threat congruency and functional weighting could also be used to reframe the aid interaction, potentially increasing the probability that an offer of help will be accepted. A functional perspective assumes that all people share a relatively common cognitive and affective architecture from which specific forms of threat can be identified. Therefore, any given donor may be able to effectively reframe a help offer, either by changing aspects of the offer to counteract any perception that he or she might represent a domain-congruent threat (as in this example of the stranded driver) or by making a different domain salient in the recipient's mind. Consider the fact that minority groups may feel threatened by the receipt of affirmative action assistance when

they interpret this assistance as a negative reflection of their (status-based) competencies (Turner & Pratkanis, 1994). Donors may elicit more positive reactions by highlighting the beneficial implications of affirmative action for furthering recipients' future goals of establishing successful cooperative alliances and familial care (e.g., having a person from the same group offer the help with the explicit suggestion that "we owe it to our kids to stick together and give them a better life"). Thus, by activating a competing social domain, a donor may trump salient domain-specific threats.

CONCLUSIONS

Many of the benefits of living in social groups involve the potential to share resources and effort and to obtain cooperative assistance from other people when in need. Nevertheless, there exist many situations in which recipients might refuse to accept assistance even when they really need it. Although such reactions are puzzling from the position of rational economic theories, we have suggested that help-recipient decision making is a process involving dynamic trade-offs of potential costs and benefits and that those trade-offs are linked to broader features of human life history. A domain-general conception of costs and benefits may fail to capture many of the complexities of social decision making in cooperative and prosocial contexts. Those costs and benefits can be more fully understood by considering them within a broader domain-based model of fundamental social motives (Kenrick, 2006; Kenrick et al., 2002; Schaller, Park, & Kenrick, 2007). Different social domains involve qualitatively different types of goals that are cognitively managed in qualitatively different ways. Much research remains to be done regarding the best way to parse up the domains of social life and the extent to which particular decision rules are unique to certain domains or shared across them. Nevertheless, an enhanced understanding of decision making across different domains of social life, and the relative functional importance of the goals within them, promises to provide novel insights into many aspects of interdependent social interaction. On the other side, an empirical and theoretical understanding of help-recipient reactions may also provide a window into the critical trade-offs that exist across different social domains.

We earlier reviewed the strong evidence for domain-specificity in the cognitive and affective processes of other living organisms (e.g., Sherry & Schacter, 1987). This review combines with abundant evidence on human learning, cognition, and neuropsychology to provide powerful support for the general notion that the human brain processes different types of information

using different decision rules (Cosmides & Tooby, 1994). We also noted that the evidence on domain-specificity does not support a view of the brain as composed entirely of physiologically segregated, encapsulated, and rigid modules, with each decision being made by one and only one mechanism that receives no inputs from any other and that is incapable of modification via learning (Barrett & Kurzban, 2006). Although there is therefore reasonable consensus on several general points regarding domain-specificity, most of the interesting questions about exactly how it all works have yet to be answered. Although mental mechanisms are not fully encapsulated, they are nonetheless specialized to be sensitive to some kinds of information and not others. How many separate systems there are, and whether they are hierarchically ordered, are open questions. All these issues certainly apply to the domains we have suggested here. For example, it is possible to envision the domains as hierarchically arranged “subselves” composed of loosely associated mechanisms that share common forms of information and utilize common mechanisms (Kenrick et al., 1998). On the other hand, it may be that certain kinds of problems within a given domain, although they are conceptually linked, are actually under the control of reasonably segregated processes (consider the problems of handling potential marital infidelity and demonstrating affection for a long-term partner; Kurzban & Aktipis, 2007). It is also likely that some of the problems common to different domains may share common mechanisms, albeit processing similar information according to different decision rules (e.g., consider the problems of sharing with siblings and with friends). These are complex issues, which we have considered in various ways in other places (e.g., Ackerman et al., 2007; Kenrick, 2006; Kenrick et al., 1998; Kenrick et al., 2008). Again, it is important to be clear that we are not suggesting that we have resolved the issues surrounding the modularity of the social mind. Instead, we are simply suggesting that a great deal of empirical and theoretical ground can be gained by thinking of social decision making in domain-specific as opposed to domain-general terms (e.g., Griskevicius, Goldstein, et al., 2006; Kirkpatrick & Ellis, 2004; Kurzban & Aktipis, 2007; Maner et al., 2005).

The insights garnered by this general approach may be valuable to researchers across a wide range of psychological content areas. The empirical study and practical application of help processes, and the trade-offs inherent to help decisions, are relevant to many of the subdisciplines of psychology: Health psychologists investigate interventions to assist the cessation of harmful addictions (but smokers might not want to quit); organizational psychologists investigate how leaders can effectively help group functioning (but subordinates might not want to take

orders); clinical psychologists often directly provide aid to needy individuals (but people in treatment might resist therapy); economic psychologists investigate dyadic games and altruistic punishment behaviors in which people sometimes act for the good of the group (but the group might not want vigilantes in their midst); developmental and educational psychologists investigate how to help children learn more effectively (but children might rebel against their parents’ or teachers’ lessons); and so on.

Social psychologists in particular stand to gain from considering recipient decision making as a function of domain-specific trade-offs, and not only within the arena of prosocial behavior. Offers of help, and the decisions to accept or reject these offers, abound within empirical work on social interactions including research on communal and exchange relationships (e.g., business associates might refuse help offers that family members do not), commitment processes in romantic relationships (e.g., refusal of aid from desirable donors might signal romantic dedication), persuasion and attitude change tactics (e.g., we might refuse a gift when we think the donor is trying to convert us to the Church of Scientology), social dilemma research (e.g., people might refuse to engage in the give-and-take of resources), and considerations of the self-concept (e.g., help that negatively affects self-esteem may be refused). Because the recipients in all of these examples may sometimes decide that the costs of acceptance outweigh the benefits, a better understanding of recipient decision-making processes has the potential to positively inform both research and application for a wide-ranging number of important topics.

In fact, functional domain-specificity provides a framework for generating models of social behavior above and beyond recipient decision making. For example, a domain-specific approach has proved powerful in the appreciation of social dynamics (Kenrick et al., 2003), perceptual contrast effects (Gutierrez, Kenrick, & Partch, 1999; Shapiro et al., 2008), emotional projection (Maner et al., 2005), outgroup homogeneity (Ackerman et al., 2006), social inferences (Cosmides & Tooby, 1997), self-esteem and aggression (Kirkpatrick, Waugh, Valencia, & Webster, 2002), moral judgments (Krebs & Denton, 2005), the self (Kurzban & Aktipis, 2007), affective and behavioral inhibition mechanisms (Bjorklund & Kipp, 1996), social exchange (Cosmides & Tooby, 1992; Gigerenzer & Hug, 1992), and a multitude of other psychological processes (e.g., Ackerman et al., 2007; Griskevicius, Goldstein, et al., 2006; Roese et al., 2006; Schaller et al., 2007). Although the modern world presents many challenges unfamiliar to individuals in our ancestral past, contemporary researchers may still better understand the (sometimes seemingly irrational) reactions to novel challenges by appreciating their functional, domain-specific foundation.

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