CHAPTER 23

Self-Interest and Beyond

Basic Principles of Social Interaction

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What interpersonal orientations drive social interactions? Does selfishness underlie most of our behavior? Are we also inclined to benefit others? Are we naturally committed to sharing and pursuing equality? Do we tend to compete with others, even if we suffer from it by doing so? When and why do we aggress? Such questions are among the most fundamental to understanding interpersonal relations and group processes, which may explain why these topics have attracted the attention of so many scientists from so many fields and disciplines for so long. A complementary reason may be that the questions raised above touch on the long-standing scientific debate about "human nature": Are people by nature good or bad? Thomas Hobbes is often acknowledged as being one of the first to explicitly address this basic question. In *Leviathan* (1651/1996) he raised the interesting problem of why societies and collectivities are able to function at all, if–so he believed–humankind is basically self-interested. The puzzle, which later was termed "the Hobbesian paradox," is central to much theory developed in the social and behavioral sciences. It deals with relationships between the individual and the society at large, but also to smaller scale issues, such as the relationships between individuals in dyads or small groups, and to relationships between groups. How have the social and behavioral sciences sought to solve the Hobbesian paradox?

THE ASSUMPTION OF THE BENEFICENT INVISIBLE HAND

Over a century after Hobbes' writings, Adam Smith (1776) sought to solve the Hobbesian problem by his famous notion of the beneficent *invisible hand*, assuming that private and collective interests tend to correspond rather than conflict. Indeed, in his *Wealth of Nations*, Adam Smith assumed that, for the most part, groups and societies are well-functioning *because* individuals pursue their self-interest. The underlying assumption is that the pursuit of self-interest often has the unintended consequence of enhancing collective interest.

It is now widely acknowledged that Adam Smith's notion of the beneficent "invisible hand" is too limited–and perhaps too simply to be true. In fact, not long after his writings, many scientists came to subscribe to the Hobbesian paradox, assuming that self-interest is often, and in important ways, incompatible with collective interests. As such, the paradox gave rise to two interrelated questions. First, is human behavior primarily or exclusively guided by self-interest? And second, if the costs of selfishness outweigh its benefits, how then can we control selfishness? In the latter question, the costs often refer to collective costs (shared by all involved), whereas the benefits often refer to the gains for the individual.

It took a long time before these questions were studied empirically. In fact, it is only five to six decades ago that some influential books were written that systematically addressed such issues from a formal, mathematical perspective (Luce & Raiffa, 1957; Von Neuman & Morgenstern, 1944) and from a psychological perspective (Thibaut & Kelley, 1959). These books, and especially the empirical research that they inspired, have exerted an enormous influence on the science of interpersonal orientations. First, by systematically analyzing situations, scientists informed each other about the various situations that may (or may not) exist in everyday life. For example, some scientists were able to logically deduce around 96 situations from 2 × 2 matrices (which represented two persons each having two behavioural options). This work has led to an understanding that there are many kinds conflicts in everyday life—conflicts between self-interest and collective interest, conflicts between self-interest and equality, conflicts between equality and collective interest, and so on.

Second, by actively examining a wide variety of situations, in the laboratory or the field, it became increasingly clear that many situations represent a conflict between self-interest and collective interest. Such situations are omnipresent in our close relationships (e.g., whether to preemptively do the dishes), in relationships with colleagues (e.g., whether or not to prepare very well for a meeting, when it takes costly time to do so), and in our links with organizations or the society at large (e.g., whether or not to engage in citizenship or volunteering activities to help others). Clearly, a relationship is unlikely to be healthy or even to persist if people would not engage in costly acts that benefit the partner. A collaboration between colleagues is unlikely to be fruitful if either or both partners are often ill prepared for a meeting. And a society is unlikely to function well if most people, for example, pollute the environment, never intervene in emergency situations, or volunteer for the greater good of all.

In fact, conflicts between self-interest and collective interests are so pervasive in everyday life that one can go so far as to claim that the most challenging task that governments, groups and organizations, as well as friends and close partners, face is to successfully manage conflicts between self-interest and collective interest. This may explain why many various scientific disciplines have such a long-standing interest in themes that are directly relevant to understanding conflicts between self-interest and collective interest, or *social dilemmas* (e.g., Dawes, 1980; Komorita & Parks, 1995). Beyond the scope of empirical research on social dilemmas, there has been a strong interest in social psychology for cooperation and competition, prosocial behavior, altruism, aggression, trust, reciprocity, and many more. These topics are primarily studied from an interpersonal, or small-group perspective, but it should be clear that they have also been studied from an intergroup perspective or from a large societal perspective. Thus, the broad scientific and societal relevance of social dilemmas is beyond dispute.

We are discussing conflicts between self-interest and collective interest in so much detail because it is precisely this domain of situation that is relevant to all the topics discussed previously. If the social world was not social (e.g., the world of Robinson Crusoe before Friday came), or if the world was much like Adam Smith initially imagined (i.e., almost no conflict of interest), many of the specific themes just described would be irrelevant. Cooperation and competition would not be called for, and one cannot communicate or develop trust if there are no conflicts between self-interest and collective interest. This would be a world in which "good and bad" do not seem to matter. But, of course, Robinson Crusoe started to face many opportunities and constraints after Friday's arrival. He and Friday could share food in an equal manner, overbenefit themselves a little every now and then, reciprocate favors over time, cooperate on building shared goods, or compete for scarce resources. Because they became interdependent in terms of fulfilling their basic needs, each of them developed orientations toward each other, which are essential to adapting to they various situations that they face. For example, they could develop orientations toward cooperation, equality, altruism, individualism, competition, or aggression.

In this chapter, interpersonal orientation is broadly defined as the set of cognitions, affect, and motivation that underlie interpersonal behavior and social interaction. We deliberately use a broad definition to reveal its relevance to many interpersonal topics, from affiliation to attachment, and from altruism to aggression. The conceptual basis for interpersonal orientation is derived from Kelley and Thibaut's (1978) interdependence theory assuming that people may *transform* interpersonal situations into new situations that guide their behavior and interactions. Also, we should note that in illustrating principles and mechanisms, we focus on research on social value orientation, which is formally defined as preferences for distributions of outcomes for self and other. The concept of social value orientation deals with prosocial, individualistic, and competitive orientations, and often has been examined and conceptualized as an individual difference variable. In this chapter, we use the concept of interpersonal orientations to explicitly acknowledge the assumption that such orientations can be influenced by the person, the situation, or the interaction partner, as we discuss later.

SOCIAL INTERACTION IS A FUNCTION OF PERSONS A AND B AND THE SITUATION

The illustration about Robinsoe Crusoe already illustrates the power of the situation—after Friday's arrival, Robinson's life changed dramatically. Indeed, the essence of a social psychological "way of thinking" is often described in terms of the power of the situation. A classic case in point is, of course, the Lewinian equation $B = f(P, E)$ which assumes that that behavior (B) is shaped not only by properties of the person (P) but also by features of the situation, or social environment (E) (Lewin, 1935). The essence of a social psychological analysis can be even more fully expressed by construing our goals in terms of the relationships *between* two (or more) persons. To develop a truly *social* psychology, we may wish to expand

our formulation, noting that an interaction (I) between persons A and B can be conceptualized in terms of the persons' needs, thoughts, and motives in relation to one another (A and B) in the context of the specific social situation (S) in which their interaction transpires (Holmes, 2002; Kelley et al., 2003; Van Lange, Otten, De Bruin, & Joireman, 1997). Expressed in an equation, $I = f(S, A, B)$.

To illustrate the utility of an interaction-based analysis, imagine two scenarios for John and Mary, who are deciding where to spend their summer vacation. In one scenario their interests conflict in that John wants to go to a beach resort whereas Mary wants to go to Paris. In this type of situation, each person will seek to communicate the basis for his or her preference ("I need the excitement of Paris"), and each will engage in cognitive activity oriented toward understanding the other's needs ("Does John want to relax because he had a stressful year?"). The situation makes it possible for each person to display his or her goals and motives (e.g., selfish vs. prosocial). Communication and information seeking will center on each person's needs, goals, and motives in relation to those of the partner ("Whose needs are more pressing?"; "Will Mary be responsive to my needs?"). The two may rely on fairness norms to resolve their problem ("It's my turn"; "You deserve a break"). Thus, situations involving conflicting interests are interpersonally rich, affording psychological processes such as self-presentation and attributional activity, and activating morality- and benevolence-relevant motives and norms.

In a second scenario John's and Mary's interests correspond, in that both want to vacation in Paris. Neither person is likely to be particularly concerned with information seeking, self-presentation, or attribution in that there is no problem and "nothing to think about." It is not possible for either person to display benevolent motives in that the course of action that would benefit John simultaneously benefits Mary. Interaction is a coordination problem—the two must agree on a date for their vacation, and one person must arrange for travel and lodging. Thus, in comparison to situations with conflicting interests, situations with corresponding interests are relatively simple in that they are less likely to inspire activities such as information seeking or self-presentation and are unlikely to give rise to moral dilemmas or questions of benevolence.

These scenarios very simply illustrate an important point: To understand social interaction we must consider the person (*the Self*), the interaction partner (*the Partner*), and *the Situation*. Likewise, social interaction experiences can be shaped by any of these three components, independently or in combination. For example, a person may be likely to yield noncooperative, selfish interactions because of person influences (e.g., the person does not tend to trust others' cooperativeness), partner influences (e.g., the partner holds in fact a competitive orientation), or situation influences (e.g., the two people often are faced with zero-sum-like situations, with very little opportunity for fruitful exchange through cooperation).

Several theories tend to assume such influences, although often focusing on one of these influences. Models or theories that focus on self-fulfilling prophecies tend to focus more strongly on influences of the Self. For example, individuals with competitive orientations are likely to elicit noncooperative behavior from others, because they expect noncooperation from others, they behave noncooperatively toward others, through which they elicit noncooperative behavior from others—thereby supporting their initial belief that "everybody is selfish" (cf. Kelley & Stahelski, 1970). There are many models which suggest strong partner influences. For example, traditional formulations of attachment theory suggest that early social interaction experiences tend to underlie the development (or not) of secure attachment, and that "partner influences" are strong (Bowlby, 1969). In particular, when the primary caregiver (usually the mother) acts in a cold, unloving, and untrusting manner, the child is unlikely to develop secure attachment—which is more likely to be developed when the primary caregiver is highly responsive to the primary needs of the child, communicating trust and love. Finally, there are some classic theories or models that emphasize the important role of situation. Perhaps the most illustrative example is the Robber's Cave experiment, revealing that the presence of conflicting goals among groups of children undermined friendly behavior and turned it into hostility, distrust, and overt aggression between the two groups (Sherif, Harvey, White, Hood, & Sherif, 1961/1988).

Social interactions are important in their own right (i.e., as a topic of study), but we suggest that an interaction-based analysis has strong theoretical benefits. First, it is true, almost by definition, that interaction is a function of the situation and the persons involved. This analysis forces us to analyze situations in terms of what orientations they afford (what orientations they call for, or may activate). Interdependency theory has advanced a taxonomy of situations. The degree to which individuals' interests correspond versus conflict (i.e., covariation in interests), discussed and illustrated earlier, is only one of the six dimensions that contemporary formulations of interdependence theory incorporate (Kelley et al., 2003). The other dimensions capture (1) degree of dependence (how strongly are outcomes determined by the partner's actions or the partner's actions in combination with one's own actions); (2) mutuality of dependence; (3) basis of dependence (whether dependence derives solely from the partner's behavior [partner control], or from partner's behavior in combination with one's own behavior [behavior control]); (4) information availability (e.g., the degree to which we have information about the partner's preferences); and (5) extended situations (e.g., the degree to which interaction situation extend over time and/or the degree to which diverse behavioral options are available). It is beyond the scope of this chapter to fully discuss and illustrate these dimensions (for a detailed overview, see Kelley et al., 2003; Rusbult & Van Lange, 2003). We do wish to note, however, that the dimension of corresponding versus conflicting interest is among the most essential to understanding interpersonal orientations.

Second, the concept of interaction is essential to observation. We never directly see people's motivations or in-

tentions displayed, but we do see two (or more) people reacting to each other, thereby usually producing good or not so good outcomes for each other. Thus we can speak of cooperative interactions (when two people behave cooperatively toward each others), noncooperative interactions (when two people ignore one another's interests), or aggressive interactions (when to people seek to produce bad outcomes for each other). Because observation is essential to social learning and modeling, it is likely that the observation of social interaction, along with the (causal) analysis of it, is an important determinant of our beliefs regarding the orientations that other people may have as well as our beliefs regarding the norms for appropriate conduct. For example, when watching a fighting couple, people may strengthen their belief that most people are not to be trusted and perhaps come to believe that even small forms of verbal abuse are violating norms of decency and respect.

Third, perhaps even more essential than observation, the most direct experiences we have with our social environment are derived from own social interactions. Given that social interactions can be chronically influenced by some situational factors (e.g., the degree to which we needed to share important resources with our siblings), or by an essential interaction partner (e.g., "the primary caregiver"), people may acquire different social interaction experiences. These social interaction experiences are likely to shape the relatively stable interpersonal orientations that people may rely on and use with particular partners (e.g., a prosocial orientation toward one's caring father) or across multiple interaction partners (e.g., a prosocial orientation across most [nonclose] interaction partners). Of course, any interpersonal orientation is subject to continuity *and* change.

Fourth, and finally, psychological processes such as cognition and affect are often both determinants of social interaction and consequences of social interaction. Cognition, motivation, and affect in many ways guide our behavior, reactions, and ultimately interactions. Indeed, much of our thinking and affect is oriented toward making sense of interaction situations and the partner(s) that is so essential to interaction. Automatic or more controlled forms of impression formation are obvious examples—and it is certainly true that much of our thinking and feeling are "for doing" (Fiske, 1992; cf. Jones & Thibaut, 1958). At the same time, during and after social interactions, people are likely to evaluate and summarize their interaction outcomes—for example, cognitions may help us understand the partner's actions, motivation may provide the frame for interpretation while emotions may signal satisfaction or dissatisfaction with the outcomes (along with potential emotions such as anger, disappointment, happiness, etc.). The important point is that, in many ways the concept of social interaction is key to understanding the functions of cognition, motivation, and affect.

To conclude, an analysis that focuses on social interaction has the theoretical benefits of understanding "the Situation," understanding social learning through observation, understanding social development (continuity and change) of interpersonal orientations, as well as cognition, motivation, and affect as determinants and consequences of social interaction.

BASIC PRINCIPLES OF INTERPERSONAL ORIENTATIONS

Which interpersonal orientations help us understand interpersonal behavior and social interaction phenomena? What types of interpersonal orientations, other than selfishness or individualism, should be meaningfully distinguished? Briefly, we suggest the importance of three prosocial orientations (cooperation, equality, and altruism), two proself orientations (individualism and competition), and one antisocial orientation (aggression). The theoretical basis for these orientations is largely derived from interdependence theory (Kelley & Thibaut, 1978) and early research and theory of social value orientation (MacCrimmon & Messick, 1976; McClintock, 1972; Messick & McClintock, 1968). It is interesting to note that this early research and theory by Messick, McClintock, and their colleagues has inspired the transition of a model of social exchange, which largely departed from the assumption of rational self-interest (Thibaut & Kelley, 1959), to the theory of interdependence, which assumes that individuals may "transform" a given situation according to broader orientations, such as cooperation, equality, or competition (Kelley & Thibaut, 1978).

Interdependence theory describes these four nonindividualistic orientations in terms of outcome transformations, delineating enhancement of joint outcomes (MaxJoint), minimizing differences between own and other's outcomes (MinDiff), enhancing outcomes for other (MaxOther), enhancing relative advantage over others (MaxRel), and reducing other's outcomes (MinOther). Specifically, the theory argues that given settings of interdependence (i.e., the given matrix) may be transformed according to these orientations to yield a reconceptualized scheme (i.e., the effective matrix) which is more strongly predictive of behavior and social interaction. The given matrix is typically a function of basic, but nonsocial, preferences, such as whether a person prefers to watch movie X or movie Y. When two partners differ in their preferences but want to go to the theater together, they may take into account broader preferences. Such broader preferences are inherently social, because the individual takes into account the partner's preferences, which then yields a reconceptualization of the given matrix. That is, through transforming the given matrix by orientations such as cooperation, equality, altruism, or competition, the individual constructs an effective matrix, which may account for how the individual seeks to solve this interdependence problem (e.g., whether to give in, whether to persist in his or her initial preferences) as well as how the two partners eventually reach a solution (which movie they attend).

The broader considerations, or transformations, may be the product of systematic information processing, shallow or heuristic processing, or even virtually no processing at all (automaticity; Bargh, 1996). In fact, because

TABLE 23.1. An Overview of Basic Propositions of Interpersonal Orientations

Proposition 1
Most people pursue good outcomes for self, either in the short term, the long term, or both (individualism), but this is often not the sole orientation that people adopt to interaction situations.

Proposition 2
Interpersonal orientations reflect not only individualism (enhancement of own outcomes) but also cooperation (enhancement of joint outcomes), equality (enhancement of equality in outcomes), altruism (enhancement of other's outcomes), competition (enhancement of relative advantage over others), and aggression (minimization of other's outcomes).

Proposition 3
The prosocial orientations of cooperation and equality frequently operate in a concerted or interactive manner. That is, these orientations tend to go hand in hand, and it is the interplay of both "prosocial" orientations that best accounts for behavior and interaction in settings of interdependence.

Proposition 4
Interpersonal orientations are partially shaped by social interactions—therefore, shaped by the self, the interaction partner, and/or the situation.

Proposition 5
Interpersonal orientations represent different probabilities with which one or more decision rules (e.g., outcome transformations such as MaxJoint, MinDiff) are activated and used.

we encounter several types of interdependence situations quite regularly, often with the same or similar partners, it is plausible that such transformations frequently take place in a habituated, automatic manner. For example, parents may fairly automatically respond to the basic needs and preferences of their children, friends may fairly automatically help each other without a lot of thought, and the desire "to compete" with others may sometimes come into being without any deliberation.

We advance five basic propositions relevant to interpersonal orientations. The term "proposition" is a deliberate choice, as we believe that alternative concepts are either too broad and too remote from the empirical world (e.g., assumptions) or too specific and too closely linked to direct empirical tests (e.g., hypotheses). The empirical literature relevant to these propositions focuses on basic work in social psychology and related fields. Table 23.1 presents an overview of the propositions advanced in this chapter.[1]

INTERPERSONAL ORIENTATIONS AS DECISION RULES

Proposition 1 states that "most people pursue good outcomes for self, either in the short term, the long term, or both, but this is often not the sole orientation that people adopt to interaction situations."

As noted earlier, Thomas Hobbes, and many of his contemporaries, assumed that humankind is basically self-interested, suggesting that humankind involves little (if any) motivation to enhance the well-being of others, to enhance the well-being of the collective, or to enhance equality in outcomes. While many philosophers since Hobbes (and before) held similar views (though less explicitly so), it is perhaps more surprising that this view continued to be influential for a long time. More recently, the notion of self-interest, later extended and termed the "assumption of *rational self-interest*," has dominated much of the traditional theories relevant to interpersonal and intergroup behavior, including early formulations of game theory (Luce & Raiffa, 1957; Von Neuman & Morgenstern, 1944) and of social exchange theory (Blau, 1964; Homans, 1961; Thibaut & Kelley, 1959). This seems especially true for economic theory. As Gordon Tullock (1976), an influential economist and theorist on public goods, once said: "the average human being is about 95 percent selfish in the narrow sense of the term" (cited in Mansbridge, 1990, p. 12).

But within psychology too, the assumption of rational self-interest is embedded in several key constructs, such as reinforcement, the pursuit of pleasure, and utility maximization, as developed in the context of behavioristic theory (including social learning theory), psychoanalytic theory, and theories of social decision making. Moreover, many of the "self-enhancement" phenomena documented in social psychology tend to assume that people seek out material or esteem-related outcomes for the self, often neglecting the power of considerations aimed at benefiting others. Although there is little doubt that people seek to construct realities in ways that serve to maintain or enhance a positive self-imagine (i.e., self-enhancement), it is also likely that similar tendencies are at work in describing close partners, friends, and members considered to belong to the own group (e.g., Murray & Holmes, 1993).

In the current article we do not wish to discard self-interest as a powerful motivation. We do, however, maintain that self-interest tells only part of the story, not all of it. Also, we suggest that Tullock's 95% should be regarded as an overestimation. But why are we so confident that self-interest tells only part of the story? First, several researchers have addressed the fundamental issue of whether people may be willing to make a cooperative choice, in the absence of several (although not all) self-serving goals such as reputational, self-presentational, or reciprocal concerns. Specifically, researchers have designed prisoner's dilemma situations in which participants are strangers who made a single and anonymous choice for relatively large amounts of money and interaction among participants was prevented before and after the experiment. These studies have revealed that under such conditions, a substantial number of people make a cooperative choice (for a review, see Caporeal, Dawes, Orbell, & Van de Kragt, 1989).

Second, in a different program of research, it has been demonstrated that feelings of empathy provide a power-

ful motivation to make a cooperative choice in single-trial prisoner's dilemmas, even if the other had just made a noncooperative choice (Batson & Ahmad, 2001). That is, people who are informed about the misfortune of another person (e.g., partner has ended a relationship) and instructed to put themselves in their position (empathy instruction) tend to act in ways that cannot be understood in terms of self-interest (for an overview of earlier evidence, see Batson, 1998).

Third, the long-standing research on justice and fairness reveals that (at least some) people are often inclined to favor fair outcomes over self-enriching outcomes that represent unequality. A more recent phenomenon is the notion of altruistic punishment, the well-supported tendency for people to punish others (at a cost to themselves) who fail to cooperate and thereby undermine the "cooperative atmosphere" in a small group (Fehr & Gächter, 2002). This phenomenon too clearly shows that people are strongly motivated to pursue equality and to "do justice" to those who tend to exploit others.

Fourth, what is impressive about the lines of research just described is that considerations other than selfishness can be observed with relative strangers, with whom they interact in a fairly abstract social dilemma task, often under completely anonymous conditions. Clearly, in the context of ongoing relationships, people should be quite prepared to engage in self-sacrificial acts, to "nurture," or to accommodate in an attempt to promote the well-being of family members, close partners, and friends (see Rusbult & Van Lange, 2003). Although such tendencies are not easy to isolate from long-term selfish interest in ongoing relationships (because there is a history and future to the relationship), research on communal relationships suggests that prosocial behavior often may occur in the absence of "recordkeeping" or reciprocity in favors. That is, people tend to respond to variation in the other's needs, and less so (or not at all) to whether the partner has engaged in similar acts in the past (Clark & Mills, 1993). And the fact that people harbor exceedingly favorable views of close others is certainly consistent with the notion that the partner's ego is quite important to themselves as well (Murray & Holmes, 1993).

Last but not least, the long-standing program of research on social value orientation, to be discussed later, is strongly at odds with the view of self-interest. In fact, this program of research was initiated in part because early research on the prisoner's dilemma and the like revealed pronounced intraindividual consistency in tendencies toward cooperation or selfishness.

Thus, various lines of research provide support for the notion that selfishness is not the only orientation that people adopt in interaction situations with others—close others, or even complete strangers. In this respect, we agree with recent insights that suggest that the importance of self-interest may be overstated. Miller and Ratner (1998; see also Ratner & Miller, 2001), for example, demonstrated that participants overestimate the impact of financial rewards on their peers' willingness to donate blood, as well as the power of social rewards (as assessed by group membership) on their peers' attitudes. Also, research has revealed that people tend to assume that most others adopt an individualistic orientation to a prisoner's dilemma, believing that most others are simply seeking to enhance their own outcomes with no or very little regard for other's outcomes (Iedema & Poppe, 1994; Maki & McClintock, 1983).

There may be several mechanisms that support the "myth of self-interest." For example, people are more likely to reciprocate noncooperation than to reciprocate cooperation. The implication is that a belief in the selfishness of others is more easily confirmed than a belief in the cooperative nature of others (Kelley & Stahelski, 1970). There are several specific mechanisms as well that support selfishness rather than cooperativeness. One example is the strong tendency for people to assign greater weight and attention to negative behaviors than to positive behaviors (e.g., Fiske, 1980; Skowronski & Carlston, 1989). Another mechanism derives from the availability of information. Often in the context of groups, what we can observe (noncooperative interaction) may actually be due to a few or even only one person, in that the cooperative intentions are (often) not visible. In other words, observable noncooperative behavior in groups may be due to noncooperative intentions of only a few group members. Finally, at the societal level, the myth of self-interest tends to be supported in the media, which tends to focus more on the bad parts of human nature than the good parts.

To conclude, we suggest that self-interest is a powerful motivation, but one that is often overestimated in strength. Such overestimation often is accompanied by a neglect of other important interpersonal orientations, to which we direction our attention next.

Proposition 2 states that "interpersonal orientations reflect not only individualism (enhancement of own outcomes) but also cooperation (enhancement of joint outcomes), equality (enhancement of equality in outcomes), altruism (enhancement of other's outcomes), competition (enhancement of relative advantage over others), and aggression (minimization of other's outcomes)."

Cooperation

There is a fair amount of research showing that the enhancement of joint outcomes, or cooperation, is an important consideration. People have a pronounced tendency to consider not only outcomes for themselves but also outcomes for others. The enhancement of joint outcomes may sometimes take the form of self-interest and assigning positive weight to other's outcomes (or doing no harm to others). But perhaps just as often, or more often, the enhancement of joint outcomes takes the form of enhancing outcomes for the group as a whole (a tendency sometimes referred to as collectivism, see Batson, 1994). In terms of decision rules, in both cases, individuals tend to enhance joint outcomes (even though they may assign greater weight to outcomes for self than to outcomes for other).

Psychologically, the two types of cooperation are substantially different. The tendency to assign some positive weight to other's outcomes may be accompanied by a va-

riety of mechanisms, such as want to act in line with the "no harm" principle (Batson, 1994), adopting a norm of social responsibility, which dictates helping . The tendency to enhance group outcomes may readily be activated (e.g., at the very beginning of group formation), and it is powerfully activated by identification with the group (e.g., Brewer & Kramer, 1986; Kramer & Brewer, 1984). To the extent that a person feels more strongly part of the group and valued by the group, or the extent to which a person derives self-definition and esteem from the group, individuals are more likely to behave cooperatively. A classic case in point is research by Brewer and Kramer (1986), in which participants were categorized as psychology students (i.e., the actual participants, hence strong group identity) or economics students (i.e., weak group identity). Using a specific resource dilemma, Brewer and Kramer showed that under conditions of strong identity, individuals were more likely to behave cooperatively when it was essential to the group (i.e., when the resources were near depletion). Such cooperative efforts were not observed when group identity was low. It has been suggested that under conditions of strong identity, there may be a blurring of the distinction between personal outcomes and collective outcomes—that is, me and mine becomes we and ours, just as we and ours becomes me and mine (e.g., De Cremer & Van Vugt, 1999).

Egalitarianism

The existence of egalitarianism or equality may be derived from various lines of research. To begin with, several experiments have been conducted within the realm of resource-sharing tasks to examine the factors that may determine different "rules of fairness." In these tasks, a group of people shares a resource and the problem that these decision makers are confronted with is how to optimally using the resource without overusing it. Research by Allison and Messick (1990) provided a powerful demonstration of what happens in such situations. That is, their results showed that when participants (in a group of six people) are asked to harvest first from the common resource, people almost without exception use the equal division rule. Individuals tend to favor equality in outcomes (rather than more complicated rules of fairness; for related evidence, see Van Dijk & Wilke, 2000). Allison and Messick (1990) suggested that equality represents a decision heuristic that has the advantages of being simple, efficient, and fair. Equality has great potential to promote the quality and effectiveness of interpersonal relationships, and therefore it can be considered a "decision rule" that is deeply rooted in people's orientations toward others (see also Deutsch, 1975, Grzelak, 1982; Knight & Dubro, 1984).

Another powerful illustration of equality in interdependence situations is when people have to negotiate allocations (e.g., how to allocate monetary outcomes). This problem is often addressed in research on ultimatum games, an exceedingly popular paradigm in experimental economics (see Güth, Schmittberger, & Schwarze, 1982). In this negotiation setting, two players have to decide on how to distribute a certain amount of money. One of the players, the allocator, offers a proportion of the money to the other player, the recipient. If the recipient accepts, the money will be distributed in agreement with the allocator's offer. If the recipient rejects the offer, both players get nothing. Some of the first studies using this research paradigm demonstrated that allocators generally proposed an equal distribution (i.e., a 50–50 split) of the money (for an overview, see Camerer & Thaler, 1995). Subsequent studies, however, wondered whether this was true fairness and that allocators may have acted out of fear that recipients would reject their offer. Recent evidence suggests that at least some people do persist in employing the equality rule in ultimatum games, even when recipients can be cheated on or when recipients hardly have any power over the decision to reject the offer or not (see Van Dijk, De Cremer, & Handgraaf, 2004). Again, equality seems to be an orientation that people carry with them when engaging in social interactions.

Although equality is in the eye of many the prime example of fairness, we already noted that fairness might also take different forms, independent of outcomes. More precisely, allocating outcomes is always accompanied by procedures guiding allocation decisions (Thibaut & Walker, 1975). People also wonder about how fair these procedures are and these perceptions in turn also have strong effects on people's behaviors and experiences in social relationships (De Cremer & Tyler, 2005). The focus on procedural fairness was further inspired by research showing that when people are asked to talk about their personal experiences of injustice they usually talk primarily about procedural issues, in particular about being treated with a lack of dignity and politeness when dealing with others (e.g., Messick, Bloom, Boldizar, & Samuelson, 1985; Mikula, Petri, & Tanzer, 1990).

Moreover, there is research revealing that the opportunity for "voice" (e.g., being asked your opinion) may convey strong surplus value in that people feel more strongly valued and respected. Voice also means that people are given an opportunity to express their values (i.e., "value-expressive" worth). For example, some research shows that people still rated a procedure to be fairer if they had voice than if they lacked voice, even if they estimated that what they said had little or no influence on the decisions made and on the outcomes that one would receive (Tyler, Rasinski, & Spodick, 1985).

An important field study by Tyler and Degoey (1995) examined people's perceptions of the fairness of the legal authorities in California and their sense of identification with their state. At the time of their study, California was plagued by a severe drought and people had to try to maintain water resources—a situation that resembles a social dilemma. Results revealed that perceptions of procedural fairness (i.e., how accurate, ethical, neutral, consistent, and participative they perceived the procedures enacted by the authority) significantly influenced people's willingness to save and maintain water resources. Especially when they exhibited a strong sense of identification with the community. High identifiers particularly

cared about the fairness of the procedures because this indicated to them that they were valued society members and thus should be treated with respect (Tyler & Lind, 1992). More recently, De Cremer and Van Vugt (2002) experimentally demonstrated the powerful effects of procedural fairness on cooperation behavior in a public good dilemma by showing that a procedurally fair leader (i.e., a leader allowing voice to group members in the decision on how to allocate the public good) promoted prosocial behavior, but particularly among those who identified strongly with the group toward the group (i.e., high group identifiers). These results thus indicate that procedural fairness, independent of outcomes, guides people's actions in social relationships, and especially when the focus is on the common group. More recent research supports the notion that procedural fairness (examining by the availability of voice or not) often is used as a cue or heuristic as to whether "the authority" is to be trusted. In fact, Lind (2001) notes that "people use overall impressions of fair treatment as a surrogate for interpersonal trust" (p. 65) (for empirical evidence, see Van den Bos, Wilke, & Lind, 1998).

To conclude, egalitarianism has received attention in distinct literatures, often supporting the notion that equality in outcomes and treatment is deeply rooted in our system and often serves as the norm as well as a heuristic for own actions and expectations regarding other's actions.

Altruism

The claim that altruism should be considered an interpersonal orientation is rather controversial. Indeed, as most readers know, there has been a fair amount of debate about the existence of altruism both within and beyond psychology. Much of the controversy, however, deals with definitions of altruism, ranging from behavioral definitions (i.e., acts of costly helping are considered altruistic) to definitions that seek to exclude any possible mechanism that may be activated in some way by self-interest. If we limit our discussion, for parsimony's sake, to research on cooperation and competition, and to allocation measures, then we see that altruism is not very prominent. For example, in assessments of interpersonal orientations in a specific resource allocation task, the percentage of people who should be classified as altruistic (i.e., assigning no weight to their own outcomes while assigning substantial weight to other's outcomes) is close to zero (Liebrand & Van Run, 1985). Similarly, when people playing a single-choice prisoner observe that the other makes a noncooperative choice, the percentage of cooperation drops to 5% or less (Van Lange, 1999).

But this evidence should not be interpreted as if altruism does not exist. In fact, what is more likely is that it does not exist under the (interpersonal) circumstances that are common in this tradition of research. People usually face a decision-making task, be it a social dilemma task, a resource allocation task, or a negotiation task, in which they are interdependent with a "relative stranger" in that there is no history of social interaction or other form of relationship. Accordingly, there is no basis for feelings of interpersonal attachment, sympathy, or relational commitment. We suggest that when such feelings are activated, altruism may very well exist.

As alluded to earlier, recent research by Batson and Ahmad (2001) provides convincing evidence. Specifically, they had participants play a single-trial prisoner's dilemma in which the other made the first choice. Before the social dilemma task, the other shared some personal information that her partner had ended the relationship with her, and that she finds a it hard to think about anything else. Batson and Ahmad compared three conditions, one of which was a high-empathy condition in which participants were asked to imagine and adopt the other person's perspective. The other conditions were either a low-empathy condition, in which participants were instructed to take an objective perspective on the information shared by the other, or a condition in which no personal information was shared.

After these instructions, participants were informed that the other made a noncooperative choice. Batson and Ahmad found that nearly half of the participants (45%) in the high-empathy condition made a cooperative choice, while the percentages in the other low-empathy and control conditions were very low, as shown in earlier research (less than 5%, as in Van Lange, 1999). Hence, this study provides a powerful demonstration of the power of empathy in activating choices that can be understood in terms of altruism, in that high-empathy participants presumably assigned substantial weight to the outcomes for the other at the expense of their own outcomes.

Also, the existence of altruism was also supported by earlier research that was designed to test the hypothesis that feelings of empathy could promote choices that benefit one particular individual in a group rather than cooperation that benefits the entire group (Batson et al., 1995). Specifically, participants could choose to benefit themselves, the group, or other group members as individuals, which extends the dichotomy of self versus collective-as-a-group that is so common in social dilemma research. Using experimental manipulations of empathy (study 1) and naturally occurring variation in empathy (study 2), Batson et al. found that feelings of empathy created or enhanced the desire to benefit one particular other person in the group (i.e., the one for whom strong empathy was felt), thereby reducing tendencies toward benefiting the collective. This study indicates that just as tendencies toward individualism may form a threat to collective well-being, so may tendencies toward benefiting specific others, or altruism, form a threat to collective well-being. That is, feelings of empathy may lead one to provide tremendous support to one particular person, thereby neglecting the well-being of the collective. For example, as noted by Batson and colleagues (1995), an executive may retain an ineffective employee for whom he or she feels compassion to the detriment of the organization. We suggest that such tendencies toward altruism are likely to be observed when individuals deal with others with whom they have developed attachment, closeness, or sympathy.

Competition

There is also strong evidence in support of competition as an orientation quite distinct from self-interest. As noted earlier, the work by Messick and McClintock (1968) has inspired considerable research that reveals that not only cooperative orientations but also competitive orientations may underlie social interactions. For example, Kuhlman and Marshello (1975) have demonstrated that individuals with cooperative orientations do not tend to exploit others who exhibit cooperation at every interaction situation, irrespective of the individual's own behavior. They also showed that individuals with competitive orientations do not exhibit cooperation, even if cooperative behavior, rather than noncooperative behavior, best serves their own personal outcomes. For example, when interacting with a partner who pursues Tit-for-Tat (Axelrod, 1984), which begins with a cooperative choice and subsequently makes the same the choice as the other did in the previous interaction situation, it make sense to cooperate if one is selfishly oriented. The reason is that cooperative choices yield mutual cooperation (good outcomes), whereas noncooperative choices yield mutual noncooperation (less good outcomes). Interestingly, unlike individualists who do respond cooperatively, competitors do not tend to behave cooperatively in response to a Tit-for-Tat strategy. The plausible reason is that competitors do not seek to enhance their own outcomes in an absolute sense—they seek to maximize the gain (or minimize the losses) *relative* to the other person.

The importance of competition is even more directly shown in research on a decision-making task that represents a conflict between on the one hand cooperation and individualism (option A) and on the other hand competition (option B). Hence, the only consideration to choose option B is to receive better outcomes (or less worse outcomes) than the other, even though one could do better for oneself by choosing option A. Research using this so-called maximizing difference game has revealed that quite a few people choose the competitive alternative; it is also of some interest to note that among some (young) age groups competitive tendencies tend to be even more pronounced (McClintock & Moskowitz, 1976). Specifically, among very young children (3 years old) individualistic orientation dominates, after which competition becomes more pronounced (4–5 years), which is then followed by cooperative orientation (6–7 years).

Finally, one might wonder whether it is the aversion of "getting behind" or the temptation of "getting ahead" that underlies such competition. In a very nice study by Messick and Thorngate (1967), it was shown that the former tendency (aversive competition) is much more pronounced than the latter tendency (appetitive competition)—in other words, not losing seems a strong motivation than winning. This early research was later extended, and generalized, by Kahneman and Tversky's (1979) gain and loss frames in their prospect theory, and by Higgins's (1998) distinction between prevention and promotion focus as two distinct self-regulatory systems. Recent research has also revealed that under conditions of uncertainty, competition may be especially pronounced, presumably because people really want to make sure that they do not get less than the other (Poppe & Valkenberg, 2003). Thus, there is little doubt that competition is an important orientation that needs to be carefully distinguished from self-interest.

Aggression

The orientation of aggression has received very little attention in research on social dilemmas. It is interesting to note that, especially in comparison to the orientation of altruism, much research on aggression focuses on genetic and biological factors. Examples are not only twin studies but also studies focusing on associations of aggression with hormonal activity, such as variations in levels of testosterone. Generally, this body of research supports the view that aggressiveness, examined by self-report methodology, is substantially "influenced" by genetic factors and biological makeup. For example, research shows that manipulations of levels of testosterone, varied as part of a treatment for sexual transformations, influence the proclivity to anger. There is an increase in the tendencies toward anger among individuals who transform from woman to man, and a decrease in such tendencies among individuals who transform from man to woman (Van Goozen, Frijda, & Van de Poll, 1995).

Importantly, the correlation between aggressiveness and testosterone is especially pronounced for scale items assessing aggressiveness-in-response-to-provocation (Olweus, 1979), suggesting that aggression needs to be considered in terms of anger that is interpersonally activated. Indeed, the methods typically used to study aggression consist of examining aggressiveness in response to provocation by another person. Hence, anger and aggressiveness should be easily aroused by others who fail to exhibit cooperative behavior. Indeed, the fact that there is not much systematic research on aggression in social dilemmas is not to imply that aggression is not an important orientation or motivation in the context of social dilemmas. We suspect that many or most of the readers who have conducted social dilemma experiments will immediately recognize not only the involvement but also the hostility described by Dawes, McTavish, and Shaklee (1977):

> One of the most significant aspects of this study, however, did not show up in the data analysis. It is the extreme seriousness with which subjects take the problems. Comments such as, "If you defect on the rest of us, you're going to live with it the rest of your life," were not at all uncommon. Nor was it unusual for people to wish to leave the experimental building by the back door, to claim that they did not wish to see the "son of bitches" who double-crossed them, to become extremely angry at other subjects, or to become tearful." (p. 7)

Because it is unlikely that aggression is a self-activated phenomenon in social dilemmas, people are unlikely to approach one another aggressively, with the primary goal in mind to reduce the outcomes for other(s). As noted earlier, aggression may be activated when others

fail to cooperate. This interpersonal basis of aggression is important, and suggests several interesting phenomena. For example, it may well be that tendencies toward aggression are most pronounced among those who do not expect others to behave selfishly. As a point in case, Kelley and Stahelski (1970) provide some evidence for what they referred to as *overassimilation*, the tendency for cooperative individuals (at least, some cooperative individuals) to behave eventually even more noncooperatively than the fairly noncooperative partner with whom one interacts (see also Liebrand, Jansen, Rijken, & Suhre, 1986).

But why might people respond so aggressively to noncooperative behavior by others? Is it only because the other's noncooperative behavior provides one with much less good outcomes than the other's cooperative behavior? We think not. In fact, it may well be strongly linked to a violation in equality of outcomes that often is created (and often perceived as intentionally created) by the other's noncooperative behavior. But then the question becomes, "Why would people respond so aggressively to a violation of equality in outcomes?" Speculatively, three reasons seem especially noteworthy.

First, a violation of equality is generally easily observed. When comparing two outcome situations, it seems easier to compare both situations in terms of equality in outcomes than it is to compare them in terms of quality of joint outcomes (cf. Allison & Messick, 1990). Second, people often use social standards for evaluating the quality of their own outcomes (cf. comparison level; Kelley & Thibaut, 1978). In the context of a social dilemma, the social standard (or social comparison) is also salient (1) because typically people can "explain" any given outcome directly in terms of the other's behavior, and to some degree, the other's intentions, and (2) because individuals' own behavior, at least in part, may be guided by expectations regarding other's behavior (e.g., Kelley & Stahelski, 1970). Third, people are generally aversive to receiving fewer good outcomes than others. One is reminded here of classic research by Messick and Thorngate (1967), revealing that aversive tendencies toward ensuring that the other does not attain greater outcomes than oneself are stronger than "appetitive" tendencies toward attaining greater outcomes for oneself. In most situations, a violation of equality, caused by others' noncooperative behavior, may not only hinder or frustrate one's interaction goals, but also negatively influence a person's pride, honor, or self-esteem (i.e., two consequences that are likely to instigate anger, see Averill, 1982).

It is interesting that responses to aggressive acts (specifically, offenses) have recently received greater attention in studies on interpersonal forgiveness. In support of the notion that (aggressive) offenses often are violations of justice, it has been shown that forgiving is effectively promoted by a compensatory act or an apology by the offender (McCullough, Worthington, & Rachel, 1997). If such restorations are not made, forgiving is less likely to happen, especially when justice concerns remain prominent. Such may lead to an inability to which in turn may challenge quality of relationships and undermine psychological well-being (e.g., Karremans, Van Lange, Ouwerker, & Kluwer, 2003). Aggression is, of course, by no means confined to dyads or small groups. Also, in large-scale social dilemmas, aggression, or at least subtle forms of aggression, may account for patterns of reactance, resistance, protest, and so on. Such aggression is often evoked by the behavior of specific group members, managers, or local and global authorities. Much research on large-scale social dilemmas has focused on individuals' willingness to contribute or cooperate, which may be regarded as a line of research that would benefit from greater attention for the opposite side of the coin (i.e., examining the psychological aspects of individuals' readiness to aggress in subtle or more explicit ways). Also, the topic of forgiveness is, of course, of great relevance to resolving conflict between large groups. To conclude, it is surprising that aggression has received so little attention in social dilemmas, because—unless research suggest otherwise—aggression seems an important orientation in social dilemmas, albeit one that seems activated primarily by the behavior of others.

Proposition 3 states that "the prosocial orientations of cooperation and equality frequently operate in a concerted or interactive manner. That is, these orientations tend to go hand in hand, and it is the interplay of both "prosocial" orientations that best accounts for behavior and interaction in settings of interdependence."

Thus far, we distinguished among six orientations, which, in decreasing order of benevolence, are (1) altruism, (2) cooperation, (3) egalitarianism, (4) individualism, (5) competition, and (6) aggression. As noted earlier, it is unlikely that each of these orientations operates in a completely independent manner. We argue that two or more orientations may well activate each other in some way, and thus may over time become "psychologically interrelated" orientations. As illustrated in Table 23.2, we suggest a model of interpersonal orientations that focuses on five relatively distinct interpersonal orientations, whereby "prosocial orientation" is the broader term representing both cooperation and egalitarianism as two interrelated orientations.

There is good theoretical and empirical reason to believe that at least two "prosocial orientations" (i.e., cooperation, and egalitarianism) tend to go hand in hand, at

TABLE 23.2 An Overview of Five Orientations

1. *Altruism*
   Enhancement of outcomes for other
2. *Prosocial orientation*
   Enhancement of joint outcomes (cooperation), and
   Enhancement of equality in outcomes (egalitarianism)
3. *Individualism*
   Enhancement of outcomes for self
4. *Competition*
   Enhancement of relative outcomes in favor of self
5. *Aggression*
   Reduction of outcomes for other

least in social dilemmas. How so? To begin with, one very robust phenomenon observed in the two-person prisoner's dilemma is the phenomenon of *behavioral assimilation* (Kelley & Stahelski, 1970). This phenomenon, which may also be referred to as reciprocity, holds that individuals with a prosocial orientation cooperate with others who also cooperate but turn to noncooperation when others do not cooperate (i.e., they become behaviorally similar to noncooperative others). The phenomenon of behavioral assimilation has been observed and supported in the most intensely studied prisoner's dilemma. Importantly, one could theoretically infer that if an individual is merely concerned with enhancing joint outcomes, one should behave cooperatively *irrespective* of the other's behavior. Thus, individuals with prosocial orientations should do more than simply enhancing joint outcomes. In fact, a model in which prosocial orientation is understood in terms of (1) egalitarianism alone or (2) cooperation and egalitarianism together (an "integrative model") is able to account for behavioral assimilation.

In past research, the phenomenon of behavioral assimilation has been supported only in research on iterated social dilemmas. In such repeated choice situations, reciprocity could be guided by a multitude of specific considerations, following from an interplay of other's past choices (or past interactions) and individuals' long-term interaction goals (e.g., the perceived feasibility of attaining particular interaction goals). For example, a partner's past actions may to some degree influence considerations relevant to long-term interaction goals, because the partner's past actions (e.g., noncooperative choices) might bring about beliefs regarding the feasibility of attaining particular long-term interaction goals (e.g., diminished confidence in the feasibility of establishing patterns of mutual cooperation). Thus, because considerations regarding the past, present, and future are inextricably linked to patterns of choice in iterated prisoner's dilemmas, it is difficult to understand the specific considerations and motivations that underlie patterns of reciprocity (but Gallucci & Perugini, 2003; Parks & Rumble, 2001; Sheldon, 1999).

Such accounts are irrelevant to a single-trial social dilemma, in which participants make only one choice. In such contexts, the only basis for choice follows from the present (the immediate present), and not from the past or the future. In one such study, participants made a choice after the other had made a choice (Van Lange, 1999). As noted earlier, this study manipulated information about the other's choice, having participants believe that the other gave away one chip, two chips, or three chips from a total of four chips, which were more valuable to the self than to the other. The participant him- or herself also possessed four chips, which were more valuable to the other than to the self. This situation represents a prisoner's dilemma because giving away chips is costly, but both would be better off to the degree that they exchanged a greater number of chips. Prior to the social dilemma, we assessed participants' social value orientations using a nine-item decomposed game technique (i.e., the triple-dominance measure of social value orientation), to examine whether tendencies toward reciprocity would be more pronounced among prosocials than among individualists and competitors.

The analysis focused on reciprocity choices, giving away exactly the same number of chips as the other had given away. Across the three conditions, prosocials exhibited greater reciprocity (64%) than did individualists (33%) or competitors (17%). In another study, we examined reciprocity in the context of a single-trial social dilemma in which the participant and the other made their choices simultaneously (Van Lange, 1999). Reciprocity choices were operationalized as giving away exactly the same number of chips as they expected the other to give away. In this study, too, prosocials (79.6%) exhibited greater reciprocity than did individualists (58.4%) and competitors (45.4%).

The covariation between cooperation and egalitarianism is also supported in some other research. For example, relative to individualists and competitors, prosocials use and recall decision-making heuristics that focus on enhancement of joint outcomes (e.g., "take a problem-solving approach") and enhancement of equality of outcomes (e.g., "play fair" or "share and share alike"; De Dreu & Boles, 1998). Such findings are also interesting because they indicate that individuals may fairly automatically (i.e., without a lot of thought) attach different meanings to the same situation (cf. Liebrand et al., 1986; Sattler & Kerr, 1991; Van Lange & Kuhlman, 1994).

That prosocials are concerned with enhancing both collective outcomes and equality in outcomes is also demonstrated by recent research on ultimatum bargaining. As noted earlier, it has been argued that in ultimatum bargaining offers tend to be "strategic" in that allocators may offer an equal split of the money to the recipient simply to avoid the recipient's rejection of an unequal offer. Van Dijk and Vermunt (2000), for example, designed an ultimatum game in which bargainers had to divide 100 chips that were worth twice as much to the allocator than to the recipient. In the symmetric information condition the allocators were led to believe the recipient too was informed about this differential value, whereas in the asymmetric information condition allocators were led to believe that the recipient was not informed about differential value. Allocators in the symmetric information condition tended to give the recipient more than half of the chips in order to compensate for the differential value. But allocators in the asymmetric information condition made substantially lower offers, suggesting that allocators exhibit a tendency of self-servingly using informational advantage. That is, because the recipient does not know about the differential value, the allocator can offer to split the number of chips equally—a seemingly fair offer to the recipient—without much fear that the recipient is going to reject the offer. Such tendencies have been interpreted in terms of the strategic use of fairness (e.g., Kagel, Kim, & Moser, 1996; Pillutla & Murnighan, 1995).

Interestingly, a recent study by Van Dijk and colleagues (2004) revealed that only individuals with proself orientations (individualists and competitors) used fairness in a strategic, self-serving manner. In contrast, individuals with prosocial orientation revealed a "true" pref-

erence for an equal distribution of the outcomes. That is, in agreement with the notion that prosocials assign great weight to minimizing differences in outcomes, their findings indicated that even when prosocial allocators thought that the recipient was not aware that chips were worth twice as much to the allocator, they did compensate for the differential value of the chips by offering twice as many chips to the recipient as to themselves. Such findings are not only in line with the integrative model of interpersonal orientations but also suggest that prosocials are genuinely concerned with equality in outcomes.

The integrative model of interpersonal orientation is also supported in research on coalition formation, an area of research that has not been conceptualized in terms of egalitarianism. Specifically, Van Beest, Wilke, and Van Dijk (2003) compared bargaining behavior of prosocials and proselfs in a three-person negotiation setting. In this setting, group members could form two-person coalitions by excluding a third party from the coalition—the excluded party would then yield substantially lower outcomes because it does not benefit from the coalition. Alternatively, group members could form a grand coalition of all three parties, yielding a somewhat lower outcome for each party than in a two-party coalition but yielding equality in outcomes. The results indicated that prosocials were more than proselfs reluctant to excluding another party from a coalition. This tendency to not exclude, and to include all members in distributing the bargaining payoff, once again suggests that prosocials are strongly motivated to obtain equality in outcomes.

Similar conclusions can be reached on the basis of research on social dilemmas. For example, Samuelson (1993) investigated in a resource dilemma how prosocials and proselfs reacted to collective inefficiency and inequality. He investigated people's preferences for structural change when they observed that the common resource became depleted (as compared to efficient use of the resource), and when they observed that some members harvested more than others (as compared to a more equal distribution of harvests). Both dimensions—collective inefficiency and inequality—appeared to be more important to prosocials than to proselfs.

A recent study by Stouten, de Cremer, and Van Dijk (2005) provided further evidence for Samuelson's findings by examining emotional reactions to violations of equality. In this study, participants learned that they were a member of a four-person group, and that their group could obtain a monetary bonus if the combined contributions of the group members would surpass a certain threshold. After participants had decided on their contribution they received (bogus) feedback: They were informed that their group had not been successful, and that the total contribution fell below the threshold needed for provision because one member had violated the equality rule by contributing less than an equal share. After this feedback, however, Stouten and colleagues introduced a manipulation of outcome feedback by informing half of the participants that even though the contributions fell short, the public good would be provided after all. Thus, for these participants what seemed like failure turned out to be a success after all. For the other half of the participants the negative outcome was not altered.

Interestingly, Stouten and colleagues (2005) found that the emotional reactions of proselfs were less negative and more positive if they learned that the public good was provided after all than if they learned that the outcome remained unchanged. In contrast, information that the public good would be provided after all was not enough for enhancing mood in prosocials. That is, even if the public good was provided after all, prosocials remained angry and unhappy. These findings suggest that prosocials' emotional reactions are deeply affected by violations in equality—the anger and frustration caused by one of the members who did not contribute (and received much greater outcomes than the others) was not resolved by yielding a good result for all four.

Taken together, there is good support for the link between cooperation and egalitarianism. Enhancement of joint outcomes and enhancement of equality tend to go together and are characteristic of how prosocials tend to approach social dilemmas and related situations of interdependence. One might further speculate about the *relative* importance of cooperation and equality. There is some initial evidence suggesting that enhancement of equality is "stronger" than enhancement of joint outcomes (e.g., Eek & Gärling, 2000; Gärling, 1999). For example, Gärling (1999) found that relative to individualists and competitors, prosocials exhibited greater levels of universalism, an attitude closely related to equality and fairness, but no greater levels of benevolence, an attitude closely related to altruism in the model discussed earlier. As noted earlier, it is plausible that in the context of prisoner's dilemmas and related structures, the violation of equality is so strong that mutual noncooperation is preferred to even weak forms of unilateral cooperation (or weak forms of altruism) whereby one behaves—or expects to behave—somewhat more cooperatively than the other. That is, prosocials may behave cooperatively up to the point that it violates equality in outcomes too strongly. Future research could examine how, more precisely, these two orientations work in concert, and whether some of the other orientations may in some ways activate each other.

DETERMINANTS OF INTERPERSONAL ORIENTATIONS

Proposition 4 states that "interpersonal orientations are partially shaped by social interactions—therefore, shaped by the self, the interaction partner, and/or situation."

To most social psychologists this proposition should not come as a surprise in that it adds very little (if anything at all) to what most of us already assume. So, why is the proposition stated at all? The reason is that we want to illustrate "the power of the situation" (the situational view) as well as seek to clarify some issues relevant to "influences" of personal dispositions (the dispositional view) and the partner's observable tendencies ("the part-

ner view"). These goals are all the more important because, empirically, interpersonal orientations are primarily addressed from the dispositional standpoint (i.e., known as social value orientations). We begin our discussion with the situational view.

In their review of interdependence processes, Rusbult and Van Lange (1996) advance three sources of interpersonal orientation, arguing that interpersonal orientations are manifested in at least three general forms: (1) *interpersonal dispositions*, or person-specific inclinations to respond to particular patterns of interdependence in a specific manner across numerous interaction partners; (2) *relationship-specific motives*, or partner-specific inclinations to respond to particular patterns in a specific manner within the context of a given relationship; and (3) *social norms*, or rule-based inclinations to respond to particular patterns of interdependence in a specific manner, either across numerous interaction partners (e.g., never be the first to "defect") or within the context of a given relationship (e.g., never betray your best friend). Clearly, relationship-specific motives and social norms form an important situational basis of interpersonal orientations. For example, a relationship-specific motive may be derived from commitment to a partner, embodying feelings of attachment, intent to persist, and long-term orientation (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; see also Agnew, Van Lange, Rusbult, & Langston, 1998). Commitment is ultimately a product of previous social interaction experiences, and broadly shaped by satisfaction with a relationships, alternatives to a relationship, and investments to a relationship. Importantly, relative to partners to whom we feel not very committed, partners to whom we feel strongly committed are more likely to elicit or activate prosocial orientations (Rusbult et al., 1991; Van Lange, Rusbult, et al., 1997). Similarly, the degree to which social norms activate prosocial versus proself orientations is powerfully linked to differences in situations. In some situations, such norms are very strong and often habituated, whereas in other situations such norms may be less salient or more ambiguous (i.e., when two or more social norms tend to conflict). For example, the "equality norm" is a powerful norm in informal, communal situations, whereas other norms, such as equity (Adams, 1965), might be more important in formal, business-like situations. In yet other situations, it may be a norm to compete, often meaning doing the best one can, as in many games or sports where only one can win.

There is even good reason to believe that prosocial orientations (or proself orientations) are fairly easily activated by relatively subtle situational differences. Slight variations in the degree to which another person is perceived as likable or unlikable, close or not so close, similar or dissimilar might exert considerable influence on the activation of prosocial versus proself orientations (e.g., De Bruin & Van Lange, 2000). Similarly, slight variations in the degree to which some norms are made salient in a given situation might exert considerable influences on the activation of prosocial versus proself orientations. For example, Hertel and Fiedler (1994) found higher levels of cooperation after a morality prime than after a power prime. Several studies have replicated these findings, while at the same time showing that the effects of priming morality may be especially pronounced for individuals who do not tend to have a stable social value orientation (e.g., Hertel & Fiedler, 1998; Smeesters, Warlop, Van Avermaet, Corneille, & Yzerbyt, 2003). And finally, there is evidence indicating that priming people with "intelligence" may strengthen prosocials' tendencies to cooperate, and–more significantly–strengthen competitors' tendency to take advantage of a partner's cooperation (Utz, Ouwerkerk, & Van Lange, 2004). Thus, there is little doubt that the situation (even subtle situational differences, we believe) may exert powerful influences on the activation of prosocial versus proself orientations.

At the same time, decades of early research on the prisoner's dilemma and related situations revealed a remarkable consistency in individuals' orientations. That is, across various situational manipulations, some individuals tended to behave in a prosocial manner, whereas other individuals tended to behave in a proself manner. These observations inspired several researchers to examine individual differences in interpersonal orientations. Indeed, the important line of research on social value orientation (e.g., Messick & McClintock, 1968) provided the methodological tools for assessing prosocial versus proself orientations. Subsequent research has demonstrated that even brief measures involving allocational choices (such as the nine-item decomposed-game instrument, see Appendix 23.1) are predictive of cooperative and noncooperative behavior in various settings, including two-person prisoners' dilemmas, social dilemmas, resource dilemmas, and actual forms of helping behavior. An example of the latter is that individuals with prosocial orientations are more likely to donate time to the university than do individualists and competitors (McClintock & Allison, 1989). There is also evidence that these differences are linked to motivations for willingness to sacrifice in ongoing relationships (Van Lange, Agnew, Harinck, & Steemers, 1997), and to various forms of prosocial behavior in the context of large communities (e.g., donation to noble causes; Van Lange, Van Vugt, Bekkers, Schuyt, & Schippers, 2005).

Some researchers and theorists might believe that the situational view is inconsistent with the dispositional view, thinking that it is an "either–or" matter. We regard both views as perfectly consistent as well as perfectly complementary, and we believe that theoretical analyses would benefit from taking into account *both* views rather than focusing on either point of view. How so? First, it is the situation that *affords* interpersonal orientations. That is, it is the situation that dictates the relevance of a particular interpersonal orientation and determines which orientations are in conflict with one another. For example, the prisoner's dilemma, especially the single-trial prisoner's dilemma, affords cooperative orientations versus self-interested orientations. A coordination situation, on the other hand, affords none of the orientations outlined in this chapter. Thus, first and foremost, it is important to analyze and define situations in terms of "affordances": What is it that the situation calls for?

Second, within a domain of situations that afford cooperative versus noncooperative orientations (e.g., the so-called mixed-motive situations), the distinction between "strong" and "weak" situations, advanced by Snyder and Ickes (1985; see also Mischel, 1977), becomes important. Strong situations are ones that "provide salient cues to guide behavior and have a fairly high degree of structure and definition, whereas weak situations do not tend to have salient cues to guide behavior and are relatively unstructured and ambiguous" (Snyder & Ickes, 1985, p. 904). Strong situations are the ones in which situational influences should be large, whereas weak situations are the ones in which dispositional influences should be large. Applying these concepts to the domain of mixed-motive situations, it is important to note that by its very structure, mixed-motive situations are almost by definition ambiguous. Indeed, they often represent "dilemmas." Thus, the structure itself, by its affordances, is weak and therefore suggests the importance of dispositional influences. This may explain why the "remarkable consistency in individuals' orientations" in mixed-motive situations should in fact not be all that remarkable. However, even mixed-motive situations have the capacity to become strong. In particular, they may become strong because of relationship-specific motives (e.g., commitment) or because of social norms (which, as suggested earlier, may even be activated through some subtle priming procedures). Under such circumstances, the dispositional influences should be substantially weaker.

The implication for research is that when one compares strong with weak situations, one should obtain statistical interactions of disposition and situation (Magnusson & Endler, 1977), because the influences of dispositions should be greater in weak rather than strong situations. For example, preexisting differences in social value orientation do predict willingness to sacrifice in close relationships when one's commitment to the relationship is relatively weak but fail to predict willingness to sacrifice in close relationships when one's commitment to the relationship is strong (Van Lange, Agnew, et al., 1997). Research by Kramer, McClintock, and Messick (1986) provides another illustration revealing that the effects of social value orientation are especially pronounced when the dilemma reaches the point at which the resources are close to being depleted (or circumstances of scarcity and urgency), and much weaker when the resources seem abundant.

Third, the dispositional view does not hold that there is always a perfect correspondence between orientation and behavior. This applies even to very "weak" situations that by their structures afford cooperative behavior versus noncooperative behavior (i.e., when there is in fact a perfect match between orientations and the situational features). For example, the correspondence between prosocial (vs. proself) orientation and cooperative (vs. noncooperative) behavior need not be perfect, even in a single-trial prisoner's dilemma. Why not? First, it is unlikely that one particular orientation is completely independent of some other orientation. Indeed, Proposition 3 suggests that there is a correspondence between enhancement of joint outcomes and enhancement of equality in outcomes. Second, and perhaps more important, the more accurate characterization of the dispositional view is that people differ in the *probability* with which one or more of the interpersonal orientations will be activated—which we discuss as the next proposition. 4a

Proposition 5 states that interpersonal orientations represent different probabilities with which one or more decision rules (e.g., outcome transformations such as MaxJoint and MinDiff) are activated and used.

It is not uncommon for scientists and laypeople alike to assume (often implicitly, we believe) that a disposition or orientation must translate directly into behavior. Perhaps due to the human need for predictability and control, we parsimoniously tend to believe that "prosocial people behave (almost) always prosocially" just as "competitive people behave (almost) always competitively." Rather than taking a deterministic perspective, a more accurate characterization of the dispositional view is probabilistic, based on the assumption that people differ in the *probability* with which one or more of the interpersonal orientations will be activated. As a metaphor, we prefer to frame this in terms of the *slot-machine model of interpersonal orientations*. But what does it mean—more precisely? We suggest that for relatively stable orientations (as dispositions or as partner-specific orientations) people differ in terms of the percentages of slots that represent prosocial, individualistic, and competitive preferences—just as slot machines represent different frequencies of bananas, lemons, and oranges (so we assume). For example, a prosocial person is a person with a relatively high percentage of prosocial slots (let's say, 70%), and relatively low percentages of individualistic and competitive slots (let's say, 20% and 10%). Similarly, a person with strong attachment for his sibling may have the same distribution of slots when facing dilemmas with his or her sibling. The reverse pattern is likely to be for a competitive person, while an individualistic person may take an intermediate position (with 60% individualistic slots, 20% prosocial slots, and 20% competitive slots).

The slot-machine metaphor of interpersonal orientation is reasonable because people behave in a variety of different interaction situations, even with the same partner. Experience accumulates across interaction situations, which is likely to shape a "probability distribution of interpersonal orientations." Indeed, it would appear to be dysfunctional or maladaptive if people relied on only a single orientation in their interactions with others, even if the situational features are the same. The slot-machine model of interpersonal orientation is also plausible (1) because there is variation in the external (and impersonal) circumstances to which individuals may respond in some way (e.g., the weather, noise), and (2) because there is a fair amount of variation within an individual even on a day-to-day basis which may also exert influences on the activation of a particular orientation (e.g., differences in mood states, or differences in energy levels on a particular day).

The slot-machine metaphor has important implications. One implication is that the metaphor assumes flexibility and adaptation. If a person were to repeatedly

(and rigidly) adopt the same orientation (irrespective of whether it is prosocial, individualistic, or competitive orientation) across multiple partners, or even to one and the same important partner, the person would be unlikely to adapt to small but important changes in the situation or to small but important changes in the partner's behavior. Indeed, rigidity would probably imply that one does not even notice certain changes in the situations (e.g., new possibilities for effective communication) or changes in the partner's behavior (e.g., increased tendency toward cooperation, increased tendency toward "cheating"). Hence, interpersonal orientations require flexibility to be adaptive—and indeed, if we were to be the slave of a particular orientation, our adaptive quality, and hence survival opportunities, would be very slim.

A second implication of the slot-machine metaphor is that people will have experience with prosocial, individualistic, and competitive "states." This is important because it suggest that people should be able to change perspectives when called for. For example, it has been shown that prosocials are more likely than individualists and competitors to evaluate other's cooperative and noncooperative actions in terms of "good versus bad" associating cooperation with goodness and noncooperation with badness—they adopt readily a morality perspective. Conversely, individualists and competitors are more likely than prosocials to evaluate other's actions in terms of strength and weakness, associating cooperation with weakness and noncooperation with strength—they adopt readily a "might" perspective (Liebrand et al., 1986; Van Lange & Kuhlman, 1994). According to the slot-machine metaphor, people should not find it hard to change perspectives: Prosocials should not find it difficult to adopt a perspective whereby competing is construed as a sign of strength, while competitors should not find it difficult to see that cooperation is often the right (or good) thing to do. People should also adapt by changing perspectives when dealing with their close partner from the perspective they have when dealing with a secondhand car salesman (or at least the stereotype thereof). While it may be seen as immoral to misinform your close partner, it may be seen as fairly "smart" to do so when buying (or selling) a secondhand car.

But is there empirical evidence for the slot-machine model of interpersonal orientation? Although the evidence is very indirect, we think of three complementary sources of empirical support. First, as discussed earlier, relatively subtle cues or associations seem to be able to activate one orientation rather than another. Priming morality, fairness, competence, power, and competition have all been shown to affect behavior in prisoner's dilemmas. Moreover, merely describing a situation as a business transaction may be enough to evoke more self-interested behavior (Batson & Moran, 1999; see also Elliott, Hayward, & Canon, 1998). Interestingly, recent research on social dilemmas has suggested that whether a situation is perceived as a business transaction depends not only on the actual words used to describe the situation but perhaps even on other situational characteristics. For example, Tenbrunsel and Messick (1999) demonstrated that perceptions of social dilemma situations are strongly affected by the introduction of sanctions on selfish behavior. After introduction of sanctions on selfish behavior, the perception of a social dilemma may shift so that people are more likely to regard their decision as a business-like decision rather than an ethical decision. Hence, sanctions of selfishness may activate individualistic or competitive orientations (see also Gneezy & Rustichini, 2000; Mulder, Van Dijk, De Cremer, & Wilke, 2006). Perhaps, the use of explicit interventions may undermine a more natural tendency ("intrinsic motivation"; Deci & Ryan, 2000) to exhibit cooperation among prosocials—those likely to do so under other circumstances.

A second source of indirect support is that the temporal stability of social value orientation is good but far from excellent. As noted earlier, there are often high levels of intrapersonal stability (and interpersonal variability) within various types of social dilemmas that are partially accounted for by measures of social value orientation. At the same time, while the test–retest reliability of social value orientation (i.e., the nine-item, triple-dominance measure) is generally good, it is not excellent. In a study involving a small sample size, it appeared that 18 of 24 classifiable participants (75%) at time 1 expressed the same interpersonal orientation at time 2 (*Kappa* = .60; Van Lange & Semin-Goossens, 1998). In another study (Van Lange, 1999, study 1), the sample was large, fairly representative of the Dutch adult population, and the time lag between measurement sessions was 19 months. Despite some differences in instructions and procedures between the two measurements, it appeared that 342 of 581 participants (58.8%) expressed the same interpersonal orientation at time 1 and time 2 (*Kappa* = .19). Clearly, the stability of interpersonal orientation is somewhat lower than one would expect from a "stable dispositional" point of view, yet comparable to those found for other individual-difference variables (e.g., adult attachment styles; Shaver & Brennan, 1992). We suggest that temporal states that may be accounted for by variability in day-to-day mood, prior experiences with situations resembling social dilemmas, or other "subtle influences" (e.g., media influences) may determine whether prosocial, individualistic, or competitive orientations are more easily activated.

Third, within the context of specific partners, we tend to see considerable variation in the interpersonal orientations we adopt. Clearly, some key relational constructs, such as commitment and trust, are able to predict various propartner behaviors that align with altruism, cooperation, and fairness (cf. Holmes, 2002; Rusbult & Van Lange, 2003). Yet even when the relational circumstances are ideal, we witness behavior that resembles individualism or even competition. Conversely, even when the relational circumstances are bad, we may witness inherent forms of propartner behavior. And despite decades of research on social dilemmas and the like, no empirical overview can point at one variable that is most certainly going to direct all (or even most) people into making cooperative or noncooperative choices. The only exception may be, as noted earlier, when the partner repeatedly engages in noncooperative behavior (cf. Kelley & Stahelski, 1970).

From a more conceptual perspective, it may be instructive to relate the slot-machine metaphor to two complementary theoretical constructs. First, the metaphor is congruent with the notion of "accessibility." For example, in forming impressions of others, for some people some trait concepts tend to be chronically accessible (e.g., appearance) whereas for other people different trait concepts tend to be chronically accessible (e.g., politeness; Higgins, King, & Maven, 1982). Such accessibility differences may influence impressions of others without people being aware of it. Such effects have also been demonstrated for attitudes, for attributes relevant to people self-definitions, and the like. Similarly, a person with a prosocial orientation is more likely to use and rely on decision rules that dictate "equality in outcomes" or "collective outcomes," and so the person may—often without being aware of it—attend to information regarding equality in outcomes and collective outcomes.

The other concept that is related to the slot-machine metaphor is the notion of *goal activation* and habits. As an interesting case in point, Aarts and Dijksterhuis (2000) have shown that habitual bicycle riders rapidly responded to the word "bicycle" when they had been primed with the goal of traveling to nearby locations (e.g., the university); in contrast, nonhabitual bicycle riders did not. Similarly, competitors' tendencies to compete may be activated by relatively small "cues" in social dilemmas and the like whereas such tendencies may not at all present among prosocials. As this literature of automatic goal activation suggests, such tendencies may be automatic—and beyond any awareness. Hence, some interaction goals ("slots") may be activated in an automatic manner (as well as in a more controlled manner).

Taken together, although the evidence is indirect, they do seem to converge on the point that consistent differences in interpersonal orientations represent consistent differences in the probability with which a particular interpersonal orientation may be activated. The same seems to be true for situational effects, which tend to take strong probabilistic (rather than deterministic) forms. The best oxymoron to capture such effects is perhaps "consistent contingency" whereby probability is influenced by numerous other variables that determine contingency, including randomness.

SUMMARY AND CONCLUDING REMARKS

This chapter discusses five propositions that are relevant to understanding the interaction goals with which people adapt to various situations in which self-interest and collective interest are conflicting. Interpersonal orientations are broadly defined as the set of cognitions, affect, and motivation that underlie interpersonal behavior and social interaction. They reflect *interaction goals* by which people seek to enhance the outcomes for themselves (individualism) as well as enhance the outcomes for other (altruism), enhance joint outcomes (cooperation), enhance equality in outcomes (egalitarianism), enhance relative advantage over others (competition), or minimize outcomes of another person (aggression). We suggest that interpersonal orientations are of broad relevance to diverse social psychological phenomena in that the construct is relevant to the internal processes (cognition and affect) that prepares one for interaction as well as to the internal processes that in many ways summarize the interaction—and that prepares one for the next interaction, either with the same partner or with a third, unrelated person. In the following paragraphs we discuss some further theoretical and evaluative issues relevant to these propositions that we have advanced in this chapter.

We begin by noting that the psychology of interpersonal orientations, while inherently social psychological, cuts across several shifts in the dominant theoretical paradigms in the past as well as integrates several fields of psychology—which is arguably important for any scientific topic to grow, bloom, and progress to yield cumulative knowledge (e.g., Kruglanski, 2006; Mischel, 2004). It is closely connected with almost any interpersonal process that is relevant social interaction. The list is endlessly long and is illustrated by (but by no means limited to) concepts such as altruism, generosity, fairness, equality, cooperation, forgiveness, sacrifice, trust, conflict, aggression, hostility, reactance, competition, suspicion, retaliation, and so on. Most of these topics are essential to understanding relationship processes underlying interactions among kin, friends, close partners, or colleagues, as well as group processes underlying interactions among members of teams, work units, interest groups, and even nations. Also, most of these topics have been studied not only by social psychologists but also by personality psychologists, developmental psychologists, health psychologists, cognitive psychologists, and so on. For example, the topic of forgiveness was originally studied by clinical and health psychologists and recently has become an exceptionally productive area of research within social psychology—and for good reasons, in that forgiveness is a response to an interpersonal offense, with strong implications for future interactions between two persons or two groups. Within social psychology, interpersonal orientations are at the heart of interpersonal and group processes, even though each of the phenomena described above applies (perhaps often with even greater societal relevance) to processes that operate within and between large groups (e.g., within and between nations; e.g., Bornstein, 1992). Many processes that receive considerable attention in contemporary social psychology, such as affect regulation, promotion and prevention foci, and stereotyping, are intimately—and importantly—linked to interpersonal orientations and the situations in which they are relevant. For example, those who cooperate, while discovering that the others did not, need to regulate their anger and frustration in some form; social dilemmas can easily evoke a prevention focus of seeking to reduce loss or a promotion focus of reaching mutual cooperation; and even subtle cues regarding another person's (stereotyped) characteristics can affect cooperation (e.g., De Bruin & Van Lange, 2000; De Dreu, Yzerbyt, & Leyens, 1995).

More generally, by being so closely related to social interaction, the literature of interpersonal orientations may serve as a bridge between (1) micro (or molecular)

approaches, with a strong focus on principles and mechanisms that may account for why individuals function as they do, and (2) macro (or molair) approaches, with a strong focus on principles and mechanisms that may account for why large groups and societies function as they do (for a related argument, see Kelley, 2000; see also Penner, Dovidio, Piliavin, & Schroeder, 2005; Van Lange, 2006). We discuss each in turn.

In support of the *micro* side of interpersonal orientations, we suggest that most if not all of the propositions can be supported by neuropsychological and related psychophysiological research. For example, there is research on the neurological basis of empathy, revealing for humans and monkeys that observing someone else's actions automatically activates neural systems underlying the production of our own actions (for a review, see Blakemore & Decety, 2001). Recently, this line of research has been extended to consider our ability to understand the feelings and sensations of others (i.e., our ability to *empathize*). Such research may well illuminate a neural basis for altruism (Singer & Frith, 2006).

Moreover, recent functional magnetic resonance imaging research reveals that attaining patterns of reciprocal cooperation in social dilemmas activates areas of the brain that are associated with the processing or rewards (Rilling et al., 2002). One may argue that the activation of this neural network helps individuals to resist the temptation to take advantage of the partner's cooperation—but instead to develop patterns of cooperation. Such research is consistent with Propositions 1 and 2, but also with Proposition 3, arguing that enhancing collective outcomes and equality in outcomes tends to go together. It would be interesting to examine whether the activation of cooperative goals tends to enhance the goal of equality and vice versa. On the basis of Proposition 3, and the empirical evidence in support of it, it seems likely that these goals are closely associated, and this association may well be demonstrated in a variety of automatic and controlled cognitive mechanisms (e.g., in implication associations), neuropsychological methods, and the like.

In support of the *macro* side of the interpersonal processes, interpersonal orientations are of great relevance to large groups, even nations. In fact, there is good reason to believe that the distribution of social value orientation is the way it is because of "functionality" at the societal level. Specifically, across a variety of different countries (although mostly "Western" countries), the distribution of prosocials, individualists, and competitors is around a 4:2:1 ratio (see Van Lange, Otten, et al., 1997). According to *frequency dependent selection* explanations, often used in evolutionary theory, such a ratio is unlikely to be random. Rather, the success of one strategy depends on the relative frequency of other strategies in the same population (Maynard Smith, 1982). For example, it is plausible that a stable, high-frequency group of prosocials invites individualists and competitors to develop and grow. In particular, a small percentage of competitors may always be there (and never become extinct) because of the presence of prosocials, who allow a little bit of "exploitation" (e.g., in single interactions), when there is no opportunity for behavioral assimilation (cf. Kelley & Stahelski, 1970). It is of interest to note that the distribution of 4:2:1 has also been observed in computer simulations (e.g., Lomborg, 1996), which provides further evidence in support of the claim that distributions of social value orientation are as they are because of the functioning at the societal level (see also Ketelaar, 2004).

We also suggest that interpersonal orientations, more broadly, reflect how people interact not only with other individuals in the context of dyads but also with individuals as part of medium-size and large groups. There is a fair amount of evidence that social value orientation is also predictive of cooperative behavior in groups and to large-scale social dilemmas, such as environmental dilemmas (e.g., Parks, 1994; Van Vugt, Van Lange, & Meertens, 1996). Also, relative to individualists and competitors, prosocials are more likely to exhibit anonymous forms of prosocial behavior, for the good of their own society or even other societies (e.g., donations to the third world; Van Lange et al., 2005). Furthermore, although dispositions, such as social value orientation, have received little attention in the context of intergroup relations, there is strong evidence that intergroup interactions tend to be more strongly guided by individualistic and competitive goals than interindividual interactions (Insko & Schopler, 1998).

As alluded to earlier, the psychology of interpersonal orientations is closely connected to evolutionary theorizing. Why are people willing to cooperate at all? Why are they willing to engage in costly acts to benefit others or the group? Why do we do so even with complete strangers with whom there is no future of interdependence? Such issues are relevant to the evolution of cooperation. Interestingly, reciprocity is considered to be the key mechanism through which social interactions evolve, both as a direct mechanism (Axelrod, 1984) and as an indirect mechanism, accounting for cooperative behavior among strangers (Nowak & Sigmund, 1998). Reciprocity in social dilemmas seems to be accounted for by enhancement of *both* joint outcomes and equality (see Proposition 3), and thus it is important to examine the evolution of both mechanisms. Similarly, there is good reason to believe that some forms of altruism and generosity ultimately account for the evolution of cooperation. For example, when there is some uncertainty regarding other's actions (e.g., when there is "noise" so that social signals cannot always be detected), it is arguably adaptive to give the other the benefit of the doubt (and not immediately reciprocate) and behave more cooperatively than the other was believed to do (Van Lange, Ouwerkerk, & Tazelaar, 2002).

We also suggest that Propositions 4 and 5 can make important contributions to the evolutionary theory. First, Proposition 4 is relevant to a taxonomy of interaction situations, and it is clear that the scientific discussion about the evolution of cooperation would benefit from an analysis of situations—after all, social life is not limited to social dilemmas, or even to exchange situations. And even within such situational domains, there are differences in the size of groups, in the availability of information regarding the intentions underlying another's actions, and

the degree to which the situation extends in time. A *taxonomic* approach, such as the one advanced by Kelley and colleagues (2003), is essential to understanding the interpersonal circumstances under which various prosocial orientations versus selfish orientations are adaptive. Proposition 5 emphasizes probability in the ways in which interpersonal orientations are activated—by the self, the partner, or the situation. We suggest that the debate about the evolution of cooperation benefits from the notion that decision rules (or transformations) are activated in a probabilistic manner. After all, such a probabilistic approach provides people with the *flexibility* that is needed to adapt to changes in the partner's actions and needed to adapt to changes in situations.

We wish to close by noting that interpersonal orientations are strongly guided by cognitions and affect—a topic that has not yet received much empirical attention. The theorizing regarding interpersonal orientations is most directly rooted in Kelley and Thibaut's (1978) *transformational analysis*—which assumes that individuals may, depending on their orientations, transform a given situation into "an effective situation" which guides behavior and interactions. Part of such transformation processes are the cognitions and emotions that may help individuals "to make sense" of situations—often in a goal-oriented (yet not necessarily conscious) manner. Social dilemmas, in particular, afford multiple and conflicting cognitions (for many, it is a dilemma), and emotions that may guide behavior, and that summarize interaction outcomes (the reader is reminded of the spontaneous comments by participants, reported by Dawes, 1980). For example, people may interpret social dilemmas in terms of classic dimensions of judgment and impression formation, perceiving it in terms of moral evaluation, strength and weakness, intelligence, and the like (Osgood, Suci, & Tannenbaum, 1957; Rosenberg & Sedlak, 1972). Also, the anticipation of experiencing guilt may prompt prosocials to behave cooperatively, to avoid taking advantage of the other's cooperation, or to avoid being accused of such tendencies (Frank, 1988). It goes without saying that feelings of anger, disappointment, and regret may be experienced when the individual discovers that he or she is the only one who cooperated. Conversely, feelings of interpersonal liking, enjoyment, and gratification, may be experienced when individuals have developed stable patterns of mutual cooperation. And some pleasure (e.g., *schadenfreude*) may be derived from punishing free riders, as well as from observing others engaging in such punitive activities (e.g., Price, Tooby, & Cosmides, 2001; cf. Fehr & Gächter, 2002). Frequently, cognitions, and certainly emotions, are guided by strong norms, which often serve to counteract tempting tendencies toward cheating, deception, and otherwise hurtful forms of "rational" self-interest (Ketelaar, 2004; Mealey, 1995). After having criticized Adam Smith (1757/2000) for his (narrow) view regarding situations, we should give him considerable credit for bringing to our attention the important role of hot cognitions and emotions, in particular "moral sentiments" that help us overcome or resolve social dilemmas that threaten interpersonal, intergroup, and international relations.

APPENDIX 23.1. AN INSTRUMENT TO MEASURE INTERPERSONAL ORIENTATION

In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to simply as the "other." This other person is someone you do not know and that you will not knowingly meet in the future. Both you and the "other" person will be making choices by circling the letter A, B, or C. Your own choices will produce points for both yourself and the "other" person. Likewise, the other's choice will produce points for him or her and for you. Every point has value: The more points you receive, the better for you, and the more points the "other" receives, the better for him or her.

Here's an example of how this task works:

	A	B	C
You get	500	500	550
Other gets	100	500	300

In this example, if you choose A you would receive 500 points and the other would receive 100 points; if you chose B, you would receive 500 points and the other 500; and if you chose C, you would receive 550 points and the other 300. So, you see that your choice influences both the number of points you receive and the number of points the other receives. Before you begin making choices, please keep in mind that there are no right or wrong answers—choose the option that you, for whatever reason, prefer most. Also, remember that the points have value: The more of them you accumulate the better for you. Likewise, from the "other's" point of view, the more points he or she accumulates, the better for him or her.

For each of the nine choice situations, circle A, B, or C, depending on which column you prefer most:

	A	B	C
(1) You get	480	540	480
Other gets	80	280	480
(2) You get	560	500	500
Other gets	300	500	100
(3) You get	520	520	580
Other gets	520	120	320
(4) You get	500	560	490
Other gets	100	300	490
(5) You get	560	500	490
Other gets	300	500	90
(6) You get	500	500	570
Other gets	500	500	300
(7) You get	510	560	510
Other gets	510	300	110
(8) You get	550	500	500
Other gets	300	100	500
(9) You get	480	490	540
Other gets	100	490	300

Note: Participants are classified when they make six or more consistent choices. Prosocial choices are: 1c 2b 3a 4c 5b 6a 7a 8c 9b; individualistic choices are: 1b 2a 3c 4b 5a 6c 7b 8a 9c; and competitive choices are: 1a 2c 3b 4a 5c 6b 7c 8b 9a.

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NOTE

1. There are several theoretically important issues that are important to the five propositions. For example, one key issue concerns whether we should include orientations other than outcome-distribution orientations in the analysis of interpersonal orientations (e.g., dominance vs. submission). Another key issue concerns the "explanations" for prosocial orientation and prosocial behavior: (1) whether prosocial orientation and behavior may to some degree be mediated by concrete self-rewards (e.g., enhancement of mood and the desire to uphold a moral principle), and (2) whether prosocial orientation and behavior to some degree may reflect the goal of enhancing long-term personal outcomes (i.e., the issue of "time"). Generally, we believe that interpersonal behavior and social interactions are guided by other broad orientations (such as dominance vs. submission), the automatic or controlled pursuit of specific self-benefits, and the broader considerations of long-term self-interest. These are very important theoretical issues but considered beyond the scope of this chapter.

REFERENCES

Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures. Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology, 78,* 53–63.

Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267–299). New York: Academic Press.

Agnew, C. R., Van Lange, P. A. M., Rusbult, C. E., & Langston, C. A. (1998). Cognitive interdependence: Commitment and the cognitive representation of close relationships. *Journal of Personality and Social Psychology, 74,* 939–954.

Allison, S. T., & Messick, D. M. (1990). Social decision heuristics in the use of shared resources. *Journal of Behavioral Decision Making, 3,* 23–42.

Averill, J. R. (1982). *Anger and aggression: An essay on emotion.* New York: Springer.

Axelrod, R. (1984). *The evolution of cooperation.* New York: Basic Books.

Bargh, J. A. (1996). Automaticity in social psychology. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 169–183). New York: Guilford Press.

Batson, C. D. (1994). Why act for the public good. *Personality and Social Psychology Bulletin, 20,* 603–610.

Batson, C. D. (1998). Altruism and prosocial behavior. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 282–316). New York: McGraw-Hill.

Batson, C. D., & Ahmad, N. (2001). Empathy-induced altruism in a prisoner's dilemma. II: What if the target of empathy has defected? *European Journal of Social Psychology, 31,* 25–36.

Batson, C. D., Batson, J. G., Todd, R. M., Brummett, B. H., Shaw, L. L., & Aldeguer, C. M. R. (1995). Empathy and collective good: Caring for one of the others in a social dilemma. *Journal of Personality and Social Psychology, 68,* 619–631.

Batson, C. D., & Moran, T. (1999). Empathy-induced altruism in a prisoner's dilemma. *European Journal of Social Psychology, 29,* 909–924.

Blakemore, S. J., & Decety, J. (2001). From the perception of action to the understanding of intention. *National Review of Neuroscience, 2,* 561–567.

Blau, P. M. (1964). *Exchange and power in social life.* New York: Wiley.

Bornstein, G. (1992). The free-rider problem in intergroup conflicts over step-level and continuous public goods. *Journal of Personality and Social Psychology, 62,* 597–606.

Bowlby, J. (1969). *Attachment and loss: Volume 1. Attachment.* New York: Basic Books.

Brewer, M. B., & Kramer, R. M. (1986). Choice behavior in social dilemmas: Effects of social identity, group size, and decision framing. *Journal of Personality and Social Psychology, 50,* 543–549.

Camerer, C., & Thaler, R. H. (1995). Anomalies: Ultimatums, dictators and manners. *Journal of Economic Perspectives, 9,* 209–219.

Caporael, L. R., Dawes, R. M., Orbell, J. M., & Van De Kragt, A. J. C. (1989). Selfishness examined: Cooperation in the absence of egoistic incentives. *Behavioral and Brain Sciences, 12,* 683–739.

Clark, M. S., & Mills, J. (1993). The difference between communal and exchange relationships: What it is and is not. *Personality and Social Psychology Bulletin, 19,* 684–691.

Dawes, R. M. (1980). Social dilemmas. *Annual Review of Psychology, 31,* 169196193.

Dawes, R. M., McTavish, J., & Shaklee, H. (1977). Behavior, communication, and assumptions about other people's behavior in a commons dilemma situation. *Journal of Personality and Social Psychology, 35,* 1–11.

De Bruin, E. N. M., & Van Lange, P. A. M. (2000). What people look for in others: Influences of the perceiver and the perceived on information selection. *Personality and Social Psychology Bulletin, 26,* 206–219.

Deci, E. L., & Ryan, R. M. (20000. The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11,* 227–268.

De Cremer, D., & Tyler, T. R. (2005). Managing group behavior: The interplay between procedural justice, sense of self, and cooperation. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 37, pp. 151–218). San Diego, CA: Academic Press.

De Cremer, D., & Van Vugt, M. (1999). Social identification effects in social dilemmas: A transformation of motives. *European Journal of Social Psychology, 29,* 871–893.

De Cremer, D., & Van Vugt, M. (2002). Intergroup and intragroup aspects of leadership in social dilemmas: A relational model of cooperation. *Journal of Experimental Social Psychology, 38,* 126–136.

De Dreu, C. K. W., & Boles, T. L. (1998). Share and share alike or winner take all? The influence of social value orientation upon choice and recall of negotiation heuristics. *Organizational Behavior and Human Decision Processes, 76,* 253–276.

De Dreu, C. K. W., Yzerbyt, V. Y., & Leyens, J. P. (1995). Dillution of stereotype-based cooperation in mixed-motive interdependence. *Journal of Experimental Social Psychology, 31,* 575–593.

Deutsch, M. (1975). Equity, equality, and need: What determines which value will be used as the basis of distributive justice. *Journal of Social Issues, 31,* 137–149.

Eek, D., & Gärling, T. (2000). *Effects of joint outcome, equality, and efficiency on assessments of social value orientations.* Unpublished manuscript. Goteborg University, Sweden.

Elliott, C. S., Hayward, D. M., & Canon, S. (1998). Institutional framing: Some experimental evidence. *Journal of Economic Behavior and Organization, 35,* 455–464.

Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. Nature, *415,* 137–140

Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology, 38,* 889–906.

Fiske, S. T. (1992). Thinking is for doing: Portraits of social cognition from daguereotype to laserphoto. *Journal of Personality and Social Psychology, 63,* 877–889.

Frank, R. H. (1988). *Passions within reason: The strategic role of the emotions.* New York: Norton.

Gallucci, M., & Perugini, M. (2003). Information seeking and reciprocity: A transformational analysis. *European Journal of Social Psychology, 33,* 473–495.

Gärling, T. (1999). Value priorities, social value orientations, and cooperation in social dilemmas. *British Journal of Social Psychology, 38,* 397–408.

Gneezy, U., & Rustichini, A. (2000). A fine is a prize. *Journal of Legal Studies, 29,* 1–17.

Grzelak, J. L. (1982). Preferences and cognitive processes in interdependence situations: A theoretical analysis of cooperation. In

V. Derlage & J. Grzelak (Eds.), *Cooperation and helping behavior* (pp. 95–122). New York: Academic Press.

Güth, W., Schmittberger, R., & Schwarze, B. (1982). An experimental analysis of ultimatum games. *Journal of Economic Behavior and Organization, 3,* 367–388.

Hertel, G., & Fiedler, K. (1994). Affective and cognitive influences in a social dilemma game. *European Journal of Social Psychology, 24,* 131–145.

Hertel, G., & Fiedler, K. (1998). Fair and dependent versus egoistic and free effects of semantic and evaluative priming on the "Ring Measure of Social Values." *European Journal of Social Psychology, 28,* 49–70.

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1–46). New York: Academic Press.

Higgins, E. T., King, G. A., & Mavin, G. H. (1982). Individual construct accessibility and subjective impressions and recall. *Journal of Personality and Social Psychology, 43,* 35–47.

Hobbes, T. (1996). *Leviathan.* Cambridge, UK: Cambridge University Press. (Original work published 1651)

Holmes, J. G. (2002). Interpersonal expectations as the building blocks of social cognition: An interdependence theory perspective. *Personal Relationships, 9,* 1–26.

Homans, G. C. (1961). *Social behavior: Its elementary forms.* New York: Harcourt, Brace & World.

Iedema, J., & Poppe, M. (1994). Effects of social value orientation on expecting and learning others' orientations. *European Journal of Social Psychology, 24,* 565–579.

Insko, C. A., & Schopler, J. (1998). Differential distrust of groups and individuals. In C. Sedikides, J. Schopler, & C. A. Insko (Eds.), *Intergroup cognition and intergroup behavior: Toward a closer union* (pp. 75–107). Hillsdale, NJ: Erlbaum.

Jones, E. E., & Thibaut, J. W. (1958). Interaction goals as bases of inference in interpersonal perception. In R. Tagiuri & L. Petrullo (Eds.), *Person perception and interpersonal behavior* (pp. 151–178). Stanford, CA: Stanford University Press.

Kagel, J. H., Kim, C., & Moser, D. (1996). Fairness in ultimatum games with asymmetric information and asymmetric payoffs. *Games and Economic Behavior, 13,* 100–111.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47,* 263–292.

Karremans, J. C., Van Lange, P. A. M., Ouwerkerk, J. W., & Kluwer, E. S. (2003). When forgiving enhances psychological well-being: The role of interpersonal commitment. *Journal of Personality and Social Psychology, 84,* 1011–1026.

Kelley, H. H. (2000). The proper study of social psychology. *Social Psychology Quarterly, 63,* 3–15.

Kelley, H. H., Holmes, J. W., Kerr, N. L., Reis, H. T., Rusbult, C. E., & Van Lange, P. A. M. (2003). *An atlas of interpersonal situations.* New York: Cambridge University Press.

Kelley, H. H., & Stahelski, A. J. (1970). Social interaction basis of cooperators' and competitors' beliefs about others. *Journal of Personality and Social Psychology, 16,* 66–91.

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence.* New York: Wiley.

Ketelaar, T. (2004). Ancestral emotions, current decisions: Using evolutionary game theory to explore the role of emotions in decision making. In C. Crawford & C. Salmon (Eds.), *Evolutionary psychology, public policy, and personal decisions* (pp. 145–168). Mahwah, NJ: Erlbaum.

Knight, G. P., & Dubro, A. F. (1984). Cooperative, competitive, and individualistic social values: An individualized regression and clustering approach. *Journal of Personality and Social Psychology, 46,* 98–105.

Komorita, S. S., & Parks, C. D. (1995). Interpersonal relations: Mixed-motive interaction. *Annual Review of Psychology, 46,* 183–207.

Kramer, R. M., & Brewer, M. B. (1984). Effects of group identity on resource use in a simulated commons dilemma. *Journal of Personality and Social Psychology, 46,* 1044–1057.

Kramer, R. M., McClintock, C. G., & Messick, D. M. (1986). Social values and cooperative response to a simulated resource conservation crisis. *Journal of Personality, 54,* 101–117.

Kruglanski, A. (2006). Theories as bridges. In P. A. M. Van Lange (Ed.), *Bridging social psychology: The benefits of transdisciplinary approaches* (pp. 21–32). Mahwah, NJ: Erlbaum.

Kuhlman, D. M., & Marshello, A. (1975). Individual differences in game motivation as moderators of preprogrammed strategic effects in prisoner's dilemma. *Journal of Personality and Social Psychology, 32,* 922–931.

Lewin, K. (1935). *A dynamic theory of personality: Selected readings.* (D. K. Adams & K. E. Zener, Trans.). New York: McGraw-Hill.

Liebrand, W. B. G., Jansen, R. W. T. L., Rijken, V. M., & Suhre, C. J. M. (1986). Might over morality: Social values and the perception of other players in experimental games. *Journal of Experimental Social Psychology, 22,* 203–215.

Liebrand, W. B. G., & Van Run, G. J. (1985). The effects of social motives on behavior in social dilemmas in two cultures. *Journal of Experimental Social Psychology, 21,* 86–102.

Lind, E. A. (2001). Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations. In J. Greenberg & R. Cropanzano (Eds.), *Advances in organizational justice* (pp. 56–88). Stanford, CA: Stanford University Press.

Lomborg, B. (1996). Nucleus and shield: The evolution of social structure in the iterated prisoner's dilemma. *American Sociological Review, 61,* 278–307.

Luce, R. D., & Raiffa, H. (1957). *Games and decisions: Introduction and critical survey.* London: Wiley.

MacCrimmon, K. R., & Messick, D. M. (1976). A framework for social motives. *Behavioral Science, 21,* 86–100.

Magnusson, D., & Endler, N. S. (Eds.). (1977). *Personality at the crossroads: Current issues in interactional psychology.* Hillsdale, NJ: Erlbaum.

Maki, J. E., & McClintock, C. G. (1983). The accuracy of social value prediction: Actor and observer influences. *Journal of Personality and Social Psychology, 45,* 829–838.

Mansbridge, J. J. (1990). *Beyond self-interest.* Chicago: University of Chicago Press.

Maynard Smith, J. (1982). *Evolution and the theory of games.* Cambridge, UK: Cambridge University Press.

McClintock, C. G. (1972). Social motivation—A set of propositions. *Behavioral Science, 17,* 438–454.

McClintock, C. G., & Allison, S. T. (1989). Social value orientation and helping behavior. *Journal of Applied Social Psychology, 19,* 353–362.

McClintock, C. G., & Moskowitz, J. M. (1976). Children's preference for individualistic, cooperative, and competitive outcomes. *Journal of Personality and Social Psychology, 34,* 543–555.

McCullough, M. E., Worthington, E. L., Jr., & Rachal, K. C. (1997). Interpersonal forgiving in close relationships. *Journal of Personality and Social Psychology, 73,* 321–336.

Mealey, L. (1995). The socio-biology of sociopathy: An integrated evolutionary model. *Behavioral and Brain Sciences, 18,* 523–599.

Messick, D. M., Bloom, S., Boldizar, J. P., & Samuelson, C. D. (1985). Why we are fairer than others. *Journal of Experimental Social Psychology, 21,* 480–500.

Messick, D. M., & McClintock, C. G. (1968). Motivational bases of choice in experimental games. *Journal of Experimental Social Psychology, 4,* 1–25.

Messick, D. M., & Thorngate, W. B. (1967). Relative gain maximization in experimental games. *Journal of Experimental Social Psychology, 3,* 85–101.

Mikula, G., Petri, B., & Tanzer, N. K. (1990). What people regard as unjust: Types and structures of everyday experiences of injustice. *European Journal of Social Psychology, 20,* 133–149.

Miller, D. T., & Ratner, R. K. (1998). The disparity between the actual and assumed power of self-interest. *Journal of Personality and Social Psychology, 74,* 53–62.

Mischel, W. (1977). The interaction of person and situation. In D. Magnusson & N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology.* Hillsdale, NJ: Erlbaum.

Mischel, W. (2004). Toward an integrative science of the person. *Annual Review of Psychology, 55*, 1–22.

Mulder, L. B., Van Dijk, E., De Cremer, D., & Wilke, H. A. M. (2006). Undermining trust and cooperation: The paradox of sanctioning systems in social dilemmas. *Journal of Experimental Social Psychology, 42*, 147–162.

Murray, S. L., & Holmes, J. G. (1993). Seeing virtues as faults. Negativity and the transformation of interpersonal narratives in close relationships. *Journal of Personality and Social Psychology, 65*, 707–722.

Nowak, M. A., & Sigmund, K. (1998). Evolution of indirect reciprocity by image scoring. *Nature, 393*, 573–577.

Olweus, D. (1979). Stability of aggression patterns in males: A review. *Psychological Bulletin, 86*, 852–875.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning*. Urbana: University of Illinois Press.

Parks, C. D. (1994). The predictive ability of social values in resource dilemmas and public goods games. *Personality and Social Psychology Bulletin, 20*, 431–438.

Parks, C. D., & Rumble, A. C. (2001). Elements of reciprocity and social value orientation. *Personality and Social Psychology Bulletin, 27*, 1301–1309.

Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology, 56*, 365–392.

Pillutla, M. M., & Murnighan, J. K. (1995). Being fair or appearing fair: Strategic behavior in ultimatum game bargaining. *Academy of Management Journal, 38*, 1408–1426.

Poppe, M., & Valkenberg, H. (2003). Effects of gain versus loss and certain versus probable outcomes on social value orientations. *European Journal of Social Psychology, 33*, 331–337.

Price, M. E., Tooby, J., & Cosmides, L. (2001). Punitive sentiment as an anti-free rider psychological device. *Evolution and Human Behavior, 23*, 203–231.

Ratner, R., & Miller, D. T. (2001). The norm of self-interest and its effects on social action. *Journal of Personality and Social Psychology, 81*, 5–16.

Rilling, J. K., Gutman, D. A., Zeh, T. R., Pagnoni, G., Berns, G. S., & Kilts, C. D. (2002). A neural basis for social cooperation. *Neuron, 35*, 395–405.

Rosenberg, S., & Sedlak, A. (1972). Structural representations of implicit personality theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 235–297). San Diego, CA: Academic Press.

Rusbult, C. E., & Van Lange, P. A. M. (1996). Interdependence processes. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 564–596). New York: Guilford Press.

Rusbult, C. E., & Van Lange, P. A. M. (2003). Interdependence, interaction, and relationships. *Annual Review of Psychology, 54*, 351–375.

Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & Lipkus, I. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology, 60*, 53–78.

Samuelson, C. D. (1993). A multiattribute evaluation approach to structural change in resource dilemmas. *Organizational Behavior and Human Decision Processes, 55*, 298–324.

Sattler, D. N., & Kerr, N. (1991). Might versus morality explored: Motivational and cognitive bases for social motives. *Journal of Personality and Social Psychology, 60*, 756–765.

Shaver, P. R., & Brennan, K. A. (1992). Attachment styles and the "Big Five" personality traits: Their connection with each other and with romantic relationship outcomes. *Personality and Social Psychology Bulletin, 18*, 536–545.

Sheldon, K. M. (1999). Learning the lessons of tit-for-tat: Even competitors can get the message. *Journal of Personality and Social Psychology, 77*, 1245–1253.

Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. (1988). *The Robbers Cave experiment: Intergroup conflict and cooperation*. Middletown, CT: Wesleyan University Press. (Original work published 1961)

Singer, T., & Frith, C. (2006). The emergence of the "social" in cognitive neuroscience: The study of interacting brains. In P. A. M. Van Lange (Ed.), *Bridging social psychology: The benefits of transdisciplinary approaches* (pp. 97–102). Mahwah, NJ: Erlbaum.

Skowronski, J. J., & Carlston, D. E. (1989). Negativity and extremity biases in impression formation: A review of explanations. *Psychological Bulletin, 105*, 131–142.

Smeesters, D., Warlop, L., Van Avermaet, E., Corneille, O., & Yzerbyt, V. (2003). Do not prime hawks with doves: The interplay of construct activation and consistency of social value orientation on cooperative behavior. *Journal of Personality and Social Psychology, 84*, 972–987.

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*. (Reprinted in an edition by E. Cannan, ed., 1904. London: Methuen. Vol. 1)

Smith, A. (2000). *The theory of moral sentiments*. New York: Prometheus Books. (Original work published 1757)

Snyder, M., & Ickes, W. (1985). Personality and social behavior. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (pp. 883–947). New York: Random House.

Stouten, J., De Cremer, D., & Van Dijk, E. (2005). All is well that ends well, at least for proselfs: Emotional reactions to equality violation as a function of social value orientation. *European Journal of Social Psychology, 35*, 767–783.

Tenbrunsel, A. E., & Messick, D. M. (1999). Sanctioning systems, decision frames, and cooperation. *Administrative Science Quarterly, 44*, 684–707.

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.

Thibaut, J. W., & Walker, L. (1975). *Procedural justice: A psychological analysis*. Hillsdale, NJ: Erlbaum.

Tullock, G. (1976). *The Vote Motive*. London: Institute for Economic Affairs.

Tyler, T. R., & Degoey, P. (1995). Collective restraint in social dilemmas: Procedural justice and social identification effects on support for authorities. *Journal of Personality and Social Psychology, 69*, 482–497.

Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 115–191). New York: Academic Press.

Tyler, T. R., Rasinski, K., & Spodick, N. (1985). The influence of voice on satisfaction with leaders: Exploring the meaning of process control. *Journal of Personality and Social Psychology, 48*, 72–81.

Utz, S., Ouwerkerk, J., & Van Lange, P. A. M. (2004). Is cooperation smart or dumb? Effects of priming competence on cooperation. *European Journal of Social Psychology, 34*, 317–332.

Van Beest, I., Wilke, H. A. M., & Van Dijk, E. (2003). The excluded player in coalition formation. *Personality and Social Psychology Bulletin, 29*, 237–247.

Van den Bos, K., Wilke, H. A. M., & Lind, E. A. (1998). When do we need procedural fairness? The role of trust in authority. *Journal of Personality and Social Psychology, 75*, 1449–1458.

Van Dijk, E., De Cremer, D., & Handgraaf, M. (2004). Social value orientations and the strategic use of fairness in ultimatum bargaining. *Journal of Experimental Social Psychology, 40*, 697–707.

Van Dijk, E., & Vermunt, R. (2000). Strategy and fairness in social decision making: Sometimes it pays to be powerless. *Journal of Experimental Social Psychology, 36*, 1–25.

Van Dijk, E., & Wilke, H. (2000). Decision-induced focusing in social dilemmas: Give-some, keep-some, take-some and leave-some dilemmas. *Journal of Personality and Social Psychology, 78*, 92–104.

Van Goozen, S. H. M., Frijda, N. H., & Van de Poll, N. E. (1995). Anger and aggression during role playing: Gender differences between hormonally treated male and female transexuals and controls. *Aggressive Behavior, 21*, 257–273.

Van Lange, P. A. M. (1999). The pursuit of joint outcomes and equality in outcomes: An integrative model of social value ori-

entation. *Journal of Personality and Social Psychology, 77,* 337–349.

Van Lange, P. A. M. (Ed.). (2006). *Bridging social psychology: The benefits of transdisciplinary approaches.* Mahwah, NJ: Erlbaum.

Van Lange, P. A. M., Agnew, C. R., Harinck, F., & Steemers, G. (1997). From game theory to real life: How social value orientation affects willingness to sacrifice in ongoing close relationships? *Journal of Personality and Social Psychology, 73,* 1330–1344.

Van Lange, P. A. M., & Kuhlman, D. M. (1994). Social value orientations and impressions of a partner's honesty and intelligence: A test of the might versus morality effect. *Journal of Personality and Social Psychology, 67,* 126–141.

Van Lange, P. A. M., Otten, W., De Bruin, E. N. M., & Joireman, J. A. (1997). Development of prosocial, individualistic, and competitive orientations: Theory and preliminary evidence. *Journal of Personality and Social Psychology, 73,* 733–746.

Van Lange, P. A. M., Ouwerkerk, J. W., & Tazelaar, M. J. A. (2002). How to overcome the detrimental effects of noise in social interaction: The benefits of generosity. *Journal of Personality and Social Psychology, 82,* 768–780.

Van Lange, P. A. M., Rusbult, C. E., Drigotas, S. M., Arriaga, X. B., Witcher, B. S., & Cox, C. L. (1997). Willingness to sacrifice in close relationships. *Journal of Personality and Social Psychology, 72,* 1373–1395.

Van Lange, P. A. M., & Semin-Goossens, A. (1998). The boundaries of reciprocal cooperation. *European Journal of Social Psychology, 28,* 847–854.

Van Lange, P. A. M., Van Vugt, M., Bekkers, R., Schuyt, T., & Schippers, M. (2005). *Ecological support for social value orientation: From games to prosocial behavior in the real world.* Unpublished manuscript, Free University, Amsterdam.

Van Vugt, M., & Van Lange, P. A. M. (2006). *Psychological adaptations for prosocial behaviour: The altruism puzzle.* In M. Schaller, D. Kenrick, & J. Simpson (Eds.), *Evolution and social psychology* (pp. 237–261). New York: Psychology Press.

Van Vugt, M., Van Lange, P. A. M., & Meertens, R. M. (1996). Commuting by car or public transportation? A social dilemma analysis of travel mode judgements. *European Journal of Social Psychology, 26,* 373–395.

Von Neuman, J., & Morgenstern, O. (1944). *Theory of games and economic behavior.* Princeton, NJ: Princeton University Press.

Neumann