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The Impact of Social Value Orientations on Negotiator Cognition and Behavior

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Prior research using experimental games has demonstrated that social value orientations affect the ways in which individuals approach and react to interdependent others; prosocials exhibit greater cooperation than individualists and competitors. This article extends these lines of research by examining the influence of social value orientations on negotiation cognition and behavior. Consistent with predictions, prosocials, relative to individualists and competitors, exhibited lower levels of demand, exhibited greater levels of concessions, and ascribed greater levels of fairness and considerateness to the other person. Moreover, prosocials as well as individualists and competitors exhibited tendencies toward logrolling, making greater concessions on low-priority rather than high-priority issues. The discussion describes several theoretical and practical implications of these findings.

The fundamental assumption underlying the present research is that the various forms of prosocial behavior one may observe in the context of interdependent situations (e.g., yielding, constructive problem solving) cannot be sufficiently understood by the simple assumption that individuals approach others in terms of their immediate self-interest. Rather, individuals may take into account another person's interests, the more distal or long-term consequences of behaviors, or their perceptions of norms and roles. Interdependence theory defines such shifts from immediate self-interest to other preferences as *transformation of motivation*—a process that may lead the individual to relinquish immediate self-interest and to act based on broader goals (Kelley & Thibaut, 1978). Moreover, interdependence theory makes a distinction between transformations by which individuals reevaluate the situation in light of outcomes for others (i.e., *outcome transformations*) and transforma-

tions governed by the strategic and temporal aspects of the interdependent situation (i.e., *sequential transformations*). Although these are distinct processes, outcome transformations may underlie different types of sequential transformations (Kelley & Thibaut, 1978). For example, persons concerned with maximizing both their own and others' outcomes may adopt strategies that give the interdependent other the benefit of the doubt and may approach others cooperatively even when the other sometimes fails to cooperate. In contrast, those who primarily or exclusively tend to maximize their own outcomes may adopt strategies that are characterized by lower levels of trust and by a greater inclination to profit from others' cooperation (cf. McClintock & Liebrand, 1988).

The present research studies whether and how outcome transformations may affect behavioral strategies in a multi-issue negotiation task by examining the influence of individuals' social value orientations—preferences for particular patterns of self-other outcome distributions—on negotiation behavior and cognition. The major hypothesis of the present work is that persons with prosocial orientations approach and respond to interdependent others in a negotiation situation more cooperatively and trustfully than do persons with individualistic and competitive orientations.

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Social Value Orientations

Since the classic work of Messick and McClintock (1968), it has been well established that individuals differ in the ways in which they evaluate outcomes for self and others. Although an infinite number of such social value orientations can be distinguished (e.g., Knight & Dubro, 1984; MacCrimmon & Messick, 1976), empirically there is support for the three-category typology that Deutsch (1960) referred to as cooperation, individualism, and competition. Cooperators (also referred to as prosocials) are inclined to maximize joint outcomes; individualists are inclined to maximize their own outcomes with no regard for others' outcomes; and competitors are inclined to maximize their relative advantage over others' outcomes (e.g., Beggan, Messick, & Allison, 1988; Knight & Chao, 1991; Kuhlman & Wimberley, 1976; Liebrand & Van Run, 1985).

These social value orientations have been demonstrated to affect the ways in which individuals approach interdependent situations. One line of research has been concerned with the influence of this variable in so-called single-trial interdependent situations, revealing that prosocials are more inclined to choose cooperatively than individualists and competitors (e.g., Van Lange, 1992; Van Lange & Liebrand, 1991). Because behavior in single-trial interdependent situations presumably is not influenced by sequential transformations, these findings are consistent with the claim that social value orientations reflect different outcome transformations. This claim is further supported by research demonstrating that prosocials direct their attention to outcomes that benefit the other, whereas individualists and competitors focus on outcomes that are more advantageous to the self (Camac, 1992; Grzelak, 1982).

Another line of research has suggested that social value orientations are reflected in different strategies that individuals adopt in interdependent situations (i.e., they engage in different sequential transformations; Kuhlman & Marshello, 1975; McClintock & Liebrand, 1988). These experiments have used so-called iterated game situations in which a subject is interdependent on another person during a series of trials, and they have examined the way in which the behavioral strategies of prosocials, individualists, and competitors are differentially influenced by (preprogrammed) partners pursuing cooperative, noncooperative, or Tit-for-Tat strategies (i.e., a strategy of beginning with a cooperative choice and subsequently imitating the previous choice made by the partner; cf. Axelrod, 1984).

These studies have revealed the following sequential transformations: Prosocial subjects adopt cooperative strategies by approaching others cooperatively but become noncooperative when partners repeatedly fail to

reciprocate their cooperative choices (cf. behavioral assimilation; Kelley & Stahelski, 1970); individualists adopt noncooperative strategies, even when partners consistently cooperate, but become cooperative if there are obvious selfish reasons for doing so (e.g., if partners follow a Tit-for-Tat strategy); finally, competitors adopt noncooperative strategies, even when partners follow a Tit-for-Tat strategy. Thus there is evidence that social value orientations reflect different outcome transformations that are applied to interdependent situations and that such outcome transformations may underlie sequential transformations, or the strategies governing successive choices during a series of interactions.

Social Value Orientations and Negotiation Behavior

A framework that uses concepts derived from interdependence theory allows one to understand how individuals with differing social value orientations differentially approach interdependent situations. However, the empirical literature underlying this framework relies to a great extent on research employing experimental games, in particular, Prisoner's Dilemma or related games. That is, prior research has paid little attention to situations that more closely parallel settings of interdependence one may face in everyday life or to real-life settings of interdependence. Granted, there is evidence that social value orientations are related to the likelihood with which one is willing to donate time to participate in psychological experiments (McClintock & Allison, 1989), that social value orientations affect judgments of daily-life incidents of cooperation and competition (Beggan et al., 1988), and that prosocials, individualists, and competitors are judged differently by friends and acquaintances (Bem & Lord, 1979; Knight, 1981). However, the body of research addressing the influence of social value orientations in situations other than experimental games is exceedingly small. Accordingly, the ecological validity of social value orientations could be strengthened by providing evidence in support of the claim that these orientations affect strategies in a multi-issue negotiation task designed to capture some important features of real-life negotiations (Carnevale & Pruitt, 1992; Pruitt & Lewis, 1975).

Beyond this, however, the nature of social interdependence underlying negotiation is substantially different from that underlying experimental games such as Prisoner's Dilemma (cf. Nemeth, 1972). First, unlike most experimental gaming situations in which subjects experience the consequences of their actions (i.e., outcomes) immediately thereafter, negotiation involves mixed-motive interdependence in which individuals communicate provisional offers and counteroffers that do not determine their outcomes until both parties agree (cf. Chertkoff & Esser, 1976; Thompson, 1990b). Thus nego-

tiation situations are more strongly characterized by actions toward accomplishing agreement and integration of interests, and the actual outcomes resulting from such actions typically are received after a series of interactions. Second, as outlined by Nemeth (1972), in experimental games, subjects usually are able to communicate their cooperative intentions only by making a cooperative choice, whereas in multi-issue negotiation, subjects may choose to communicate their pursuit of agreement and integration of interests by placing lower demands and by making greater concessions on either low-priority issues or high-priority issues or both, allowing for more diversity in the ways in which cooperative intentions can be communicated. Thus relative to experimental games, a multi-issue negotiation task provides a more complex situation of interdependence in which outcomes can only be obtained after a successful series of offers and counteroffers, and in which opportunities for communication of cooperative intentions take a more multifaceted form.

Furthermore, a multi-issue negotiation task provides a context in which two distinct types of sequential transformations can be examined. First, individuals may engage in yielding by making unilateral concessions on all issues. Second, concessions may depend on issue priority, such that individuals make larger concessions for low-priority issues than for high-priority issues; this has been referred to as *logrolling* (e.g., Lewicki & Litterer, 1985; Pruitt & Carnevale, 1982). These forms of cooperative strategies are psychologically distinct in that yielding may be governed by preferences regarding giving the other the benefit of the doubt, coupled with a concern for the other's well-being in the absence of clear evidence that this would be reciprocated by the other (cf. Pruitt & Rubin, 1986). In contrast, logrolling focuses more strongly on the use of integrative potential—a strategy that is primarily concerned with integrating own and other's interests to eventually obtain greater outcomes for oneself than otherwise would be available (e.g., by a 50-50 compromise; cf. Lax & Sebenius, 1986; Pruitt & Carnevale, 1993). Indeed, research has shown that individuals seek integration of interests through conceding on low-priority issues rather than on high-priority issues (e.g., Pruitt & Lewis, 1975; Thompson, 1990a).

The Present Research and Hypotheses

The major purpose of the present research was to examine the impact of social value orientations on negotiator behavior, testing the general hypothesis that prosocial subjects exhibit greater cooperation than do individualists and competitors. Moreover, to address two distinct mechanisms underlying cooperative strategies, we explored whether the greater level of cooperation we

anticipated from prosocials than from individualists and competitors takes the form of yielding, logrolling, or both. These questions were examined in a three-issue negotiation task, the issues differing in value to the negotiators (i.e., low-, intermediate-, and high-priority issues; cf. Pruitt & Lewis, 1975). Whereas yielding would imply that negotiators' concessions and demands do not vary as a function of low-priority versus high-priority issues, logrolling takes into account issue priority by making smaller concessions on high-priority than low-priority issues.

Based on the foregoing discussion regarding social value orientations and their role in interdependent situations, we advanced the following predictions. First, given prior empirical evidence supporting the claim that social value orientations reflect different outcome transformations, we expected prosocials to have lower levels of demand and concede more than individualists and competitors (i.e., we expected greater levels of yielding for prosocials than for individualists and competitors).

Second, in a more exploratory vein, we examined whether negotiation differences for prosocials versus individualists and competitors are present at the beginning of the negotiation or emerge in the course of the interaction with the other negotiator. One would expect behavioral differences in their initial approach to the negotiation if prosocials differ from individualists and competitors in their basic beliefs and goals (e.g., expectations and assumptions regarding the other negotiator or the task at hand). Alternatively, one would expect that differences between social value orientations emerge in the course of the negotiation if one assumes that such individuals develop different beliefs and/or different goals in response to actions of another negotiator. A priori, both lines of reasoning are plausible because prior work on experimental games has demonstrated that individuals differing in value orientation not only approach interdependent situations differently but also respond differently to identical strategies pursued by the interdependent other.

Third, we have argued that people may engage in sequential transformations by adopting strategies that would provide good outcomes for the self in the long run (cf. Thompson, 1990a). Accordingly, we hypothesized negotiators to engage in logrolling and predicted a main effect for issue priority, with lower levels of demand and greater concessions for low-priority than for high-priority issues.

Fourth, we examined whether prosocials are more likely to engage in logrolling and to do so to a greater extent than individualists and competitors. In a sense, one could argue that because prosocials tend to attribute or project greater cooperative intentions toward others than do individualists and competitors (e.g., Kramer,

McClintock, & Messick, 1986; Kuhlman & Wimberley, 1976), prosocials may believe that cooperative strategies toward optimizing their own outcomes are more feasible than do individualists and competitors. However, there is also evidence supporting the claim that individualists rapidly adopt cooperative strategies when these are beneficial to the self, suggesting that they realize that in situations of repeated interaction, cooperation can be an effective means toward pursuing self-interest. In a negotiation context, this may imply that individualists pursue—and communicate tendencies toward—integration of own and other's interests by means of logrolling. Thus we were interested in examining whether social value orientations are reflected in different levels of logrolling, which would be revealed by an interaction of social value orientation and issue priority.

Fifth and finally, the present research explored perceptual differences expected to underlie social value orientations. Prior research using experimental games has begun to examine judgments of cooperative versus noncooperative others. This research has revealed that prosocials primarily rate such strategies in terms of morality, associating cooperation with goodness and noncooperation with badness; conversely, individualists and competitors rate such strategies in terms of power, associating cooperation with weakness and unintelligence, and noncooperation with strength and intelligence (e.g., Liebrand, Jansen, Rijken, & Suhre, 1986; McClintock & Liebrand, 1988). However, these studies have not examined how individuals with differing social value orientations perceive others whose behavioral strategies take an intermediate position between cooperation and noncooperation.

Moreover, it is not yet clear how they rate such a course of action in a rather complex interdependent situation like multi-issue negotiations. Given the high levels of ambiguity caused by the complex, strategic environment and by the other's mixture of cooperative and noncooperative choices (i.e., integrative and nonintegrative offers), it is exceedingly difficult for a negotiator to determine the other person's underlying motives and goals. We assume that under such circumstances, individuals with differing social value orientations exhibit tendencies toward projecting their own orientations onto the other persons. That is, in the absence of strong, unambiguous evidence regarding others' motivations, individuals tend to use their own orientations to interpret others' behavior (Dawes, McTavish, & Shaklee, 1977; Snyder & Ickes, 1985). Hence consistent with our earlier claim that prosocials are more likely than individualists and competitors to give others the benefit of the doubt, we expected prosocials, compared to individualists and competitors, to rate the others as fairer and more considerate. Finally, we explored subjects'

self-ratings and expected that, relative to individualists and competitors, prosocials would view themselves as more concerned with the other's well-being and with equality and less concerned with their own well-being.

METHOD

Subjects and Experimental Design

A total of 133 male and female undergraduate students at the University of Groningen participated in the experiment, for which they received 10 Dutch guilders (DF10 is about \$6 in American currency). Subjects were recruited through advertisements in the weekly university newspaper. By scheduling participants from different departments into one experimental session, we attempted to minimize the risk that subjects were previously acquainted with each other. The basic experimental design constituted one between-subjects factor, the subject's social value orientation (prosocials vs. individualists vs. competitors), and two within-subjects factors—issue priority (low vs. intermediate vs. high priority) and trial (trial 1 through 7). This design was tested using two major dependent variables—namely, level of demand and degree of concession.

Procedure

The experiment was described as a study about decision making; this neutral title was chosen to avoid specific expectations regarding the nature of the study. For each session, six to eight subjects were invited to the laboratory. Upon arrival, subjects were welcomed and placed in one of eight individual cubicles, preventing them from communicating with each other. Each subject was seated in front of a computer screen on which all information appeared. After receiving brief instructions regarding computer use, subjects were told that they could consult the experimenter if they had problems understanding the instructions. At that point, all the instructions followed on their computer screens, and the role of the experimenter was minimized. To ensure that the experimenter would not affect negotiation behavior in unforeseen ways, one of three different experimenters conducted each of these sessions (because exploratory analyses revealed no experimenter effects, this variable will not be further discussed). The experiment consisted of two tasks—the assessment of social value orientation and the negotiation task.

Assessment of social value orientations. Each subject's social value orientation was assessed by a series of decomposed games (Messick & McClintock, 1968)—a measurement technique that has been demonstrated to have good internal consistency (e.g., Liebrand & Van Run, 1985) as well as test-retest reliability (Kuhlman, Camac,

TABLE 1: Three Examples of Decomposed Games

Option	Example 1		Example 2		Example 3	
	Outcome to Self	Outcome to Other	Outcome to Self	Outcome to Other	Outcome to Self	Outcome to Other
1	50	20	50	15	60	30
2	40	0	40	0	50	10
3	40	40	40	40	50	50

& Cunha, 1986). In each decomposed game, subjects could choose from different distributions of outcomes to themselves and a (hypothetical) other person. Outcomes were presented in terms of points that were said to have value to both themselves and the other person. Subjects were given a choice among three alternatives, each corresponding to one of the social value orientations under study. In total, there were nine decomposed games, derived from the prior work of Kuhlman and Marshello (1975).

Table 1 provides some examples of the decomposed games used in the present study. In Example 1, Option 1 represents the individualistic choice, because one's own outcomes are larger (50) than are those in Option 2 (40) or Option 3 (40). Option 2 represents the competitive option, because it provides a greater advantage over the other's outcomes ($40 - 0 = 40$) than either Option 1 ($50 - 20 = 30$) or Option 3 ($40 - 40 = 0$). Finally, Option 3 corresponds to a prosocial choice, because it provides a larger joint outcome ($40 + 40 = 80$) than either Option 1 ($50 + 20 = 70$) or Option 2 ($40 + 0 = 40$). Subjects choosing at least six times a prosocial alternative were classified as prosocial ($n = 87$). Subjects choosing at least six times a competitive alternative were classified as competitors ($n = 6$), and subjects choosing at least six times an alternative that maximized own outcomes were classified as individualists ($n = 33$). Because of the low number of subjects that could be identified as competitive, we combined competitors and individualists into one group called *pro-self-oriented* subjects (cf. Kramer et al., 1986; Van Lange & Liebrand, 1991). The remaining 7 subjects failed to meet classification criteria (i.e., making at least six choices consistent with one of the above orientations) and were omitted from further analyses.

Although the percentage of subjects identified as individualists (26%) seems common, the low percentage of competitors (5%) and high percentage of prosocials (69%) may appear as somewhat unusual. To verify this, we gathered additional data with a U.S. sample (undergraduates at the University of Illinois at Urbana-Champaign participating for course credit) and a Dutch sample (undergraduates at the University of Groningen participating for payment). These distributions were very similar to those obtained in the current study: At

Urbana-Champaign ($N = 121$) and at Groningen ($N = 70$), these respective percentages were 54 and 60 (prosocials), 34 and 38 (individualists), and 5 and 6 (competitors). Other cross-cultural work using somewhat different decomposed game methodologies has revealed corresponding distributions of social value orientations, although the percentage of competitors appears to be somewhat higher (about 12%; Liebrand & Van Run, 1985; Van Lange & Kuhlman, 1994).

Negotiation task. After subjects completed the decomposed games, we asked them to participate in a second study that was described as a negotiation task. Subjects were told that the goal of this second experiment was to study negotiation behavior in situations in which negotiators could not see each other but had to use computers to communicate their offers and proposals. The subject was assigned the role of seller and was led to believe that another subject was assigned the role of buyer; however, in fact, subjects negotiated with a preprogrammed computer.

The negotiation task was a computerized version of the one used in past studies on multi-issue negotiation (e.g., De Dreu, Carnevale, Emans, & Van de Vliert, 1994; Hilty & Carnevale, 1993). This task is designed to capture the main characteristics of real-life negotiations: It involves multiple issues differing in usefulness to the negotiator, provides negotiators with information about their own pay-offs only, and meets the provisional offer/counteroffer characteristic of many negotiation situations (Pruitt, 1981; Thompson, 1990b). Specifically, the negotiation task involved the sale of appliances and focused on three issues that varied in usefulness to the subjects—namely, *delivery time* (low-priority issue), *discount terms* (intermediate-priority issue), and *financing terms* (high-priority issue; see Table 2).

It was explained to the subjects (the sellers) that when they reach an agreement with the buyer, their ultimate profits can be influenced in three ways: (a) longer delivery time causes lower profits because of the costs associated with keeping the appliances longer in expensive warehouses, (b) greater discount would proportionally lower their profits, and (c) the different ways of payment (financing terms; e.g., cash, monthly payment, credit cards, etc.) would affect their profits. Subjects then were

TABLE 2: Subject (Seller) Issue Chart

Delivery Time	Discount Terms	Financing Terms
1 DfI 1600	1 DfI 2400	1 DfI 4000
2 DfI 1400	2 DfI 2100	2 DfI 3500
3 DfI 1200	3 DfI 1800	3 DfI 3000
4 DfI 1000	4 DfI 1500	4 DfI 2500
5 DfI 800	5 DfI 1200	5 DfI 2000
6 DfI 600	6 DfI 900	6 DfI 1500
7 DfI 400	7 DfI 600	7 DfI 1000
8 DfI 200	8 DfI 300	8 DfI 500
9 DfI 000	9 DfI 000	9 DfI 000

NOTE: DfI = Dutch guilders. Subjects were permitted to propose any contract they wished (e.g., 1-1-1 or 3-5-1).

shown an issue chart that listed nine levels of possible agreement (denoted by a number from one to nine) with a corresponding positive number that represented the profit value at each agreement level (see Table 2). They were told that "You can see that the best deal for you is 1-1-1 for a total outcome of DfI 8000 (1600 + 2400 + 4000)." The corresponding chart for the buyer (the computer program) was not displayed, and subjects were told only that the buyer had a different chart. The three-issue task (delivery time, discount terms, and financing terms) allowed us to examine demands and concessions for low-, intermediate-, and high-priority issues, respectively, and were included to increase mundane realism of the negotiation task. Moreover, we attempted to enhance experimental realism (i.e., subjects' involvement in the task) by telling subjects that at the end of the study, the negotiation outcomes would be converted into lottery tickets that would give them a chance of winning one of three 50-guilder prizes; thus the larger the profit, the greater the chance of gaining 50 guilders.

Thereafter, we explained more specific rules of the negotiation task. Subjects were told that the buyer would make the first offer, that they could respond with a counteroffer, and that negotiation would end upon agreement or when time ran out. In the latter case, no points would be obtained and hence no lottery prize should be anticipated. It should be noted that during the explanation of the instructions, no indication was given as to (a) what may be the best strategy or (b) the maximum number of rounds. The negotiation continued for a maximum of seven rounds. The reason for a relatively small number of rounds is that we assumed that this series of concessions and demands provides a valid measure of negotiation behavior. Moreover, prior research using a similar negotiation task has indicated that after seven rounds, only a few subjects settle the negotiation (De Dreu et al., 1994; Hilty & Carnevale, 1993). This was important because we administered a postnegotiation

questionnaire to gain more insight into the perceptions and judgments during rather than after negotiation (i.e., we assumed that whether the negotiation ended successfully would strongly color such judgments). In fact, in the present study, no subjects settled before the seventh round of negotiation.

In the study, we controlled for the buyer's strategy and attempted to simulate a buyer who does not take an overly cooperative or an overly competitive approach to the negotiation task. That is, we wished to induce some ambiguity and uncertainty about what sales strategy is most efficient and appropriate in order to create a *weak* situation—an environment that leaves room for different interpretations, expectations, and goals (cf. Snyder & Ickes, 1985). Therefore, rather than simulating a buyer sending strongly integrative offers (e.g., 9-5-1 or 8-5-2; see Table 2) or one sending nonintegrative offers (e.g., 9-9-9 or 6-6-6), we programmed a buyer's strategy that takes an intermediate position between these two extremes. Across the seven negotiation rounds, the programmed buyer sent the following offers: 9-8-9; 9-8-8; 8-8-8; 9-7-7; 8-7-6; 7-7-5; 8-5-6 (see Table 2). This strategy generates a perception that the buyer's position is somewhere between cooperative and competitive (e.g., De Dreu et al., 1994). After the experiment, subjects were debriefed, and each subject was paid DfI 10.

Dependent measures. The offers in each round were recorded and transformed into a concession-level and a demand-level index (details are discussed in the Results section). In the postnegotiation questionnaire, we measured (a) perceptions of the other person in terms of fairness and considerateness and (b) perceptions of the self (i.e., concern with the other's well-being, concern with equality, as well as concern with subject's own well-being). The specific questions are described in detail in the Results section.

RESULTS

We transformed the offer data into two indexes, one revealing the negotiator's demand level (the points asked for an issue at each round of negotiation; see Table 2), the other revealing the negotiator's total concession at each of the seven negotiation rounds (the total steps taken). Although both measures are closely related (the first can be reasonably well deduced from the second), we present both analyses for the reader's convenience and to allow comparisons with past research on multi-issue negotiation.

Demand level. Level of demand was analyzed by a 2 (social value orientation) \times 3 (issue priority) \times 7 (negotiation round) ANOVA, the latter two variables being within-subjects factors.¹ As predicted, there was a signifi-

TABLE 3: Mean Demand Levels as a Function of Social Value Orientation and Negotiation Round

Social Value Orientation	Negotiation Round						
	1	2	3	4	5	6	7
Prosocial	6584	5986	5297	4885	4616	4437	4288
Individualistic/competitive	6683	6316	5922	5524	5308	5017	4760

NOTE: Figures represent Dutch guilders.

TABLE 4: Mean Demand Levels as a Function of Issue Priority and Negotiation Round

Issue Priority	Negotiation Round						
	1	2	3	4	5	6	7
Low	1212	1090	857	785	771	719	628
Intermediate	1930	1769	1602	1480	1354	1330	1354
High	3503	3203	3031	2817	2702	2567	2452

NOTE: Figures represent Dutch guilders.

cant main effect for social value orientation, showing that prosocial subjects placed lower demands than did individualists and competitors ($M = \text{DFI } 5157.31$ vs. $\text{DFI } 5661.82$, respectively), $F(1, 124) = 5.41, p < .025$. This effect was qualified by a two-way interaction between social value orientation and negotiation round, $F(6, 744) = 2.44, p < .024$. As can be seen in Table 3, prosocial subjects demanded about the same as individualists and competitors in the first two rounds of negotiation, but thereafter, the former showed a greater decline in demand level than the latter. It thus appears as if prosocial subjects give their partners the benefit of the doubt more readily than do individualists and competitors.

The predicted main effect for issue priority was also significant, $F(2, 248) = 964.15, p < .001$, revealing that subjects placed lower demands on the low-priority issue ($M = \text{DFI } 885.91$) than on the intermediate-priority issue ($M = \text{DFI } 1573.21, p < .05$), which, in turn, triggered lower demand levels than the high-priority issue ($M = \text{DFI } 2954.42, p < .05$). Finally, there was a significant main effect for negotiation round, revealing that levels of demand declined over time, $F(6, 744) = 185.56, p < .001$ (for cell means, see Table 4).

The interaction between social value orientation and issue priority was not significant, $F(2, 248) = 1.48, p > .22$, but there was a significant Issue Priority \times Negotiation Round interaction, $F(6, 744) = 12.37, p < .001$. As can be seen in Table 4, logrolling was stronger in later negotiation rounds, a pattern quite compatible with that observed by Thompson (1990a). Finally, the three-way interaction between social value orientation, issue priority, and negotiation round was absent, $F(12, 1488) > 1$.

Negotiator concessions. The concession per issue at each negotiation round was analyzed by a 2 (social value

orientation) \times 3 (issue priority) \times 7 (negotiation round) ANOVA, the latter two variables being within-subjects factors. The predicted main effect for social value orientation was significant, $F(1, 124) = 5.58, p < .020$, and was qualified by a two-way interaction between social value orientation and negotiation round, $F(6, 744) = 2.28, p < .05$. The nature of this interaction effect is displayed in Figure 1, in which we plotted the other's strategy for heuristic reasons as well. Like the results for demand level, prosocial subjects conceded as much as individualists and competitors in the first two negotiation rounds. After the second round, however, prosocials made larger concessions that at the sixth and seventh round converged with those made by individualists and competitors.

The ANOVA further revealed that subjects conceded more on low-priority issues ($M = 4.75$) than on issues with intermediate priority ($M = 3.75, p < .05$), which, in turn, triggered greater concessions than high-priority issues ($M = 3.04, p < .05$), $F(2, 248) = 93.62, p < .001$. This effect was qualified by a significant interaction between issue priority and negotiation round, $F(6, 744) = 7.05, p < .001$, revealing that the impact of issue priority was stronger as negotiation continued (see Table 5). Concessions did not vary as a function of the interaction between social value orientation and issue priority, $F(2, 248) > 1$, nor as a function of value orientation, issue priority, and negotiation round, $F(12, 1488) > 1$.

Perception of the other: Fairness and considerateness. We assessed subjects' perceptions of others' fairness and considerateness by asking them the following questions: How fair and reasonable did you feel the other person's offers were? (In Dutch, *fairness* is hard to translate; we used the Dutch word *redelijk*, meaning "fair and reasonable.") Did you feel that the other person considered

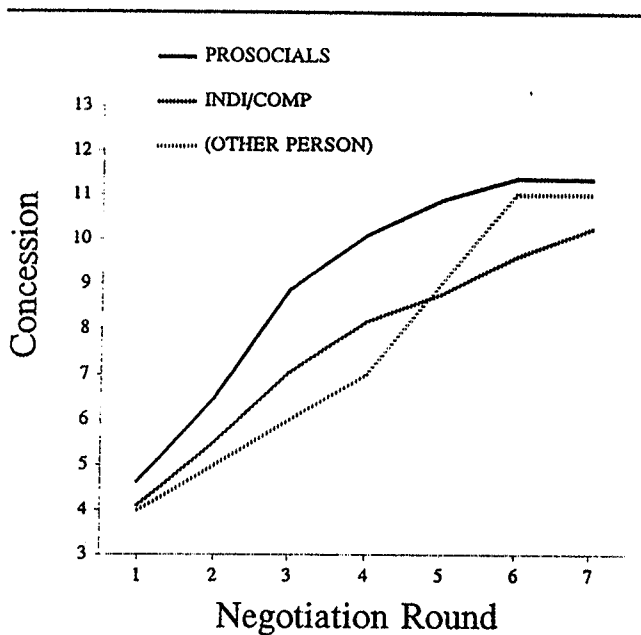


Figure 1 Mean degrees of concessions as a function of social value orientation and negotiation round.

your needs and interests? Answers could range from 1 (*Not at all*) to 7 (*Very much*). A MANOVA on these ratings revealed a multivariate main effect for social value orientation, $F(2, 123) = 4.19, p < .05$. As predicted, prosocial subjects ($M = 3.24$) more than individualists and competitors ($M = 2.59$) viewed the other's strategy as fairer, $F(1, 124) = 7.82, p < .01$. Also, prosocial subjects ($M = 3.12$) tended to ascribe greater considerateness to the other person than did individualists and competitors ($M = 2.69$), $F(1, 124) = 3.70, p < .06$. These findings are consistent with the claim that prosocials exhibit a greater tendency to give the other the benefit of the doubt than do individualists and competitors.

Perceptions of the self: Concern with others' well-being, equality, and own well-being. We assessed subjects' concern with the other person's well-being and their concern with equality by asking them the following questions: How important is it to you that the other person is satisfied afterwards? How important is it to you that you and the other person both get equal outcomes? Answers could range from 1 (*Not at all*) to 7 (*a lot*). A MANOVA yielded the expected main effect for social value orientation, $F(2, 123) = 11.49, p < .001$. Compared to individualists and competitors ($M = 3.62$), prosocials ($M = 4.32$) reported a greater concern with the other's well-being, $F(1, 124) = 7.18, p < .01$. Also, relative to individualists and competitors ($M = 3.52$), prosocials reported being more strongly concerned with obtaining equal outcomes ($M = 4.69$), $F(1, 124) = 22.71, p < .001$.

Concern with own well-being was assessed by asking subjects the following questions: To what extent were you trying to reduce your costs and losses? To what extent were you trying to maximize your gains? Answers could range from 1 (*Not at all*) to 7 (*Very strongly*). Again, a MANOVA revealed a significant effect for social value orientation, $F(2, 123) = 5.26, p < .01$. Consistent with predictions, compared to individualists and competitors ($M = 5.33$), prosocial subjects ($M = 4.74$) reported being less strongly concerned with reducing their own costs and losses, $F(1, 124) = 5.82, p < .05$. Moreover, prosocials ($M = 4.81$) reported being less strongly inclined to maximize their own gains than did individualists and competitors ($M = 5.62$), $F(1, 124) = 10.04, p < .01$. Thus, compared to individualists and competitors, prosocial subjects reported a greater concern with others' well-being, less of a concern with their own well-being, and a somewhat greater concern with equality.

Correlations between perceptions and negotiation behavior. We correlated each of the judgments described above with the average demand and average concession indexes to study the relationship between perceptions of self and other with negotiation behavior. As can be seen in Table 6, significant correlations between perceptions of self and negotiation behavior indicate that a stronger concern for one's own outcomes is associated with a lower level of concessions and a higher level of demands. No significant correlations were found between perception of other and negotiation behavior. Separate analyses for prosocial and prosocial subjects did not reveal any systematic deviations from this overall pattern.

DISCUSSION

The present research provides good evidence in support of the claim that social value orientations affect individuals' cognition, motivation, and behavior in negotiation situations. Based on different outcome transformations related to social value orientations, we predicted that prosocial subjects would engage in greater levels of yielding than individualists and competitors. Consistent with this prediction, prosocials placed lower demands and made greater concessions than did individualists and competitors. However, such differences were not significant in the first two rounds but emerged in the course of the negotiation. Moreover, relative to individualists and competitors, prosocials ascribed greater levels of fairness and considerateness to the other, although they were rating another person pursuing an identical negotiation strategy. These findings are consistent with the claim that prosocials more than individualists and competitors tend to give others the benefit of the doubt, making more benign judgments of others in strategically complex situations of

TABLE 5: Mean Degrees of Concessions as a Function of Issue Priority and Negotiation Round

Issue Priority	Negotiation Round						
	1	2	3	4	5	6	7
Low	2.93	3.55	4.71	5.07	5.14	5.04	5.86
Intermediate	2.56	3.10	3.65	4.07	4.48	4.56	4.48
High	1.92	2.54	2.93	3.36	3.59	3.86	3.67

interdependence. Furthermore, prosocials viewed themselves as being more concerned with the other's well-being and with equality than individualists and competitors who reported to be more strongly concerned with their own well-being. Finally, we obtained evidence in support of the notion that negotiators engage in logrolling by making greater concessions and placing lower demands on low-priority issues than on high-priority issues. These tendencies toward logrolling to about the same extent characterized prosocials' as well as individualists' and competitors' strategies.

These findings extend prior research on social value orientations to the domain of negotiation and, therefore, need to be discussed in terms of their implications for prior research and theories regarding social value orientation as well as negotiation. First, as noted earlier, a few researchers have examined the role of social value orientations beyond settings such as experimental games. Although those studies provide support for the ecological validity of social value orientations, not one of these studies has examined the relationship between social value orientation and negotiation. Moreover, prior research on social value orientations has revealed robust effects providing evidence for different outcome and sequential transformations they apply to interdependence situations (i.e., experimental games). The present three-issue negotiation task provided a suitable context in which other types of sequential transformations may take place than in experimental games, primarily because it is a more complex situation of interdependence in which outcomes can be obtained only when both persons agree (typically after a series of offers and counteroffers) and in which opportunities for communication take a more multifaceted form. Hence the present findings provide support for the ecological validity of social value orientations and demonstrate that such individual differences are related to sequential transformations, or strategies that individuals develop in the course of the negotiation.

Second, the present research revealed that social value orientations affect levels of yielding but do not influence tendencies toward logrolling. This may advance our understanding of the underlying mechanisms governing these sequential transformations. Yielding, at

TABLE 6: Correlations Between Perceptions of Self and Other and Negotiation Behavior

Perception	Average Demand	Average Concession
Of self		
Importance of satisfying other	-.29**	.27**
Concern for equality	-.12*	.11*
Overall concern	-.29**	.27**
Trying to reduce one's own losses	.25**	-.20**
Trying to maximize one's own gains	.40***	-.38***
Of other		
Fairness of other's strategy	-.03	.03
Other's consideration of subject's needs	.04	-.03

$N = 126$.

* $p < .10$. ** $p < .01$. *** $p < .001$.

least in part, seems to be governed by prosocial motivations, evaluating the negotiation situation not only in terms of one's own outcomes but also in terms of the outcomes for the other person involved. In contrast, logrolling may be a strategy that is affected more strongly by tendencies toward maximizing one's own interest in the long run. There has been some discussion in the literature about whether prosocials exhibit cooperation because they are intrinsically concerned with joint outcomes and the well-being of others or because they think that a prosocial approach to interdependent others is associated with good outcomes for the self in the long run (cf. Kuhlman et al., 1986). This intriguing question admittedly is likely to elicit speculative answers. However, if it is true that yielding primarily comes about through intrinsic prosocial motivations, whereas logrolling is affected more strongly by motivations toward long-term self-interest, then it seems that prosocials may engage in cooperative strategies for both reasons and that the former reason (i.e., intrinsic prosocial concerns) discriminates them best from individualists and competitors. This notion is further supported by the finding that prosocials viewed themselves as being more concerned with the other's well-being, more concerned with equality, and less concerned with their own well-being than did individualists and competitors.

Third, in the literature regarding negotiation behavior, the role of individual differences has received little

theoretical or empirical attention. For example, it has been argued that "from what is known now, it does not appear that there is a single personality type or characteristic that is directly and clearly linked to success in negotiation" (Lewicki & Litterer, 1985, p. 276). Moreover, it has been frequently asserted that individuals take an overcompetitive perspective to negotiation situations, transforming the situation into a zero-sum situation and approaching each other in a distrustful manner (e.g., little open exchange of accurate information), although often, both persons can win to some extent (cf. Thompson, 1990b; Thompson & Hastie, 1990). The present findings suggest that although individuals with differing social value orientations tend to approach the negotiation situation in a similar manner, prosocials, compared to individualists and competitors, more rapidly take a cooperative perspective to the negotiation situation, thereby communicating greater trust and openness to the other negotiator.

This latter finding may be explained by the idea that relative to individualists and competitors, prosocials are more prepared to give the other the benefit of the doubt, hoping that the other will reciprocate such cooperative efforts. Alternatively, it may be that during the interaction, prosocials become more conflict avoidant or more strongly concerned with the other's welfare than do individualists and competitors.² Although the precise mechanisms underlying these differences remain to be determined, it seems plausible that the beliefs and goals that prosocials develop in the course of the interaction are quite effective and functional, especially in more complicated situations of negotiation in which openness and trust are necessary ingredients in reaching integrative solutions (cf. Kimmel, Pruitt, Magenau, Konar-Goldband, & Carnevale, 1980). In terms of future research, it would be useful to extend the current findings by examining whether alternative personality variables—conceptually related to social value orientations—similarly affect the perceptual and motivational processes relevant to reaching integrative solutions (e.g., individual differences in trust, sympathy, or altruism; cf. Eisenberg & Farbes, 1991; Yamagishi, 1992).

Before closing, we wish to briefly outline some limitations of the present research and directions for future research. One limitation of the study concerns the fact that the measurement of social value orientations took place just prior to the negotiation task. It is possible that the decomposed game measure may have heightened subjects' awareness of their social value orientations and/or may have evoked motivations to behave consistently on the two tasks (e.g., a concern with making a coherent impression). Although the present research cannot rule out these explanations, it seems useful to point out two issues that seem to be somewhat conflicting

with these accounts. First, in light of these concerns, one would expect differences between prosocials and individualists and competitors at the very beginning of the negotiation task; this finding was not obtained. Second, there is increasing evidence that effects of social value orientations on behavior and cognition in settings of interdependence are robust, whether value orientation is measured shortly before the experiment (as in this study) or several weeks prior to the actual research (e.g., Dehue, McClintock, & Liebrand, 1993; Eisenberger, Kuhlman, & Cotterell, 1992). Nevertheless, it would be fruitful to replicate the present work by measuring social value orientations a substantial period of time prior to the negotiation task.

A second limitation of this study concerns the fact that in the negotiation task there was no real interaction between the seller (the subject) and the buyer and that the strategy of the buyer was somewhat integrative but was otherwise held constant. Hence it is not yet clear whether and how social value orientations affect negotiation behavior in settings that allow for free exchange of information about preferences, priorities, and desired outcomes. Also, it would be relevant to identify the social value orientations of the buyers to determine whether negotiations among pairs of prosocials, individualists, and competitors would yield different patterns. Because prosocials are more likely to yield than individualists and competitors, negotiations between prosocials may be, in fact, more efficient than those between individualists and competitors. Although this line of reasoning is speculative, the present findings encourage future research along these lines.

The present research can be seen as one of the first steps toward integrating two lines of research (social value orientation and negotiation) that, to our knowledge, have never been directly linked to each other. This integration is promising because it may provide more insight into the types of sequential transformations that discriminate prosocial subjects from individualists and competitors, as well as the specific motives that may underlie different negotiation strategies. Put differently, there seems to be some "integrative potential" for researchers working in these fields.

NOTES

1. Exploratory analyses including gender as a variable in the design yielded no interactions between value orientation and gender. There was, however, an interaction between gender and negotiation round, $F(6, 732) = 2.24, p < .05$, showing that male ($M = DFI 6594$) and female ($M = DFI 6710$) negotiators started with about the same initial demands but that female negotiators decreased their demands to a greater extent ($M = DFI 2550$) than did male negotiators ($M = DFI 1924$). This effect is consistent with much research on bargaining showing that females are more inclined to cooperate than males (e.g., Pruitt, 1981).

2. We are grateful to an anonymous reviewer for suggesting these possibilities.

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