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Nauta, A.; Dreu, C.K.W. de; Vaart, T. van der

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Social Value Orientation, Organizational Goal Concerns and Interdepartmental Problem-solving Behavior

Aukje Nauta, Carsten K.W. De Dreu, and Taco Van Der Vaart

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Abstract

In a study in 11 organizations among 120 manufacturing, planning and sales employees, support was found for the hypothesis that a prosocial value orientation – as a personality trait - increases the likelihood that employees show a high concern for the goals of other departments. This concern, combined with a high concern for own goals, furthermore appeared to increase the likelihood of problem-solving behavior during interdepartmental negotiations. Measures of goal concerns were attained, firstly, by asking employees how important they found six specific organizational goals and, secondly, by assessing which goals were found most important by members of which department. The results of this study suggest that problem solving can be induced by selecting or developing prosocial employees, because a prosocial value orientation increases the likelihood of having broad role orientations, in which employees not only care for goals characteristic of their own department, but also for goals of other departments.

Departments within organizations often aim at different organizational goals, yet the coordination of these goals is a prerequisite for overall organizational effectiveness. The need for goal coordination makes departments interdependent (Thompson, 1967), but this interdependence may become particularly problematic when the different departmental goals are incompatible (St. John, 1991). Consider, for example, the case of many industrial organizations with departments of manufacturing, planning, and sales (cf. Argyris, 1964; St. John 1991; McCann & Galbraith, 1981; Schmenner & Swink, 1998; Shapiro, 1977; Skinner, 1974; Walton, Dutton, & Fitch, 1966). Sales employees, in their aim for satisfying customer needs, tend to accept rush orders, but these rush orders disrupt the production schedules made by planning employees, and consequently, the swift and even flow of the manufacturing process. As this example illustrates, the sales goal of serving the customer is often partially incompatible with the planning goal of delivery performance and the manufacturing goal of efficiency (cf. St. John, 1991; Schmenner & Swink, 1998; Shapiro, 1977; Skinner, 1974; Walton, Dutton, & Fitch, 1966).

Interdepartmental goal incompatibility potentially hampers overall organizational effectiveness. As St. John (1991) wrote: 'If operating level decisions are guided by parochial rather than organization wide goals, the overall pattern will be inconsistent and counterproductive' (p. 213; see also McCann & Galbraith, 1981; Goldratt & Cox, 1993). Accordingly, scholars have considered a multitude of mechanisms by which coordination between interdependent departments can be managed. An important coordination mechanism is mutual adjustment, which Mintzberg (1979) defines as 'the coordination of work by the simple process of informal communication' (p. 3). When departmental goals are partially incompatible, the process of informal communication turns into negotiation which can be defined as the communication process by which interdependent parties seek to resolve a divergence of interests (Lax & Sebenius, 1986; Rubin, Pruitt & Kim, 1994). Indeed, a study by Walton, Dutton, and Fitch (1966) in six manufacturing plants has shown that coordination and decision making processes between production and sales managers are often characterized by distributive bargaining.

In the current research we assume that high organizational performance will be fostered by constructive negotiations between departments within organizations. We examined the proposition, derived from theory and laboratory research on dyadic negotiations (Blake & Mouton, 1970; De Dreu, Weingart, & Kwon, 2000; Rubin, Pruitt & Kim, 1994; Thomas, 1976), that constructive negotiation behavior between manufacturing and planning as well as between planning and sales is influenced by the degree to which department members have concern for the goals of the other departments. Moreover, we propose that the degree to which they have concern for other department's goals is partly rooted in individual differences in social value orientation. In doing so, we connect currently isolated fields of research on social value orientations and negotiation behavior on the one hand, and on interdepartmental coordination and organizational effectiveness on the other hand. This may improve our theoretical understanding of coordination and negotiation processes in organizations and may result in better practical tools to stimulate interdepartmental coordination.

Organizational Goal Concerns and Constructive Negotiation Behavior

When interdepartmental goals are partially incompatible, and department members face the dilemma between serving their own department's goals and the overall goal of organizational effectiveness, constructive negotiation may help parties to develop win-win solutions that meet the needs and desires of all parties involved (cf., Alper, Tjosvold & Law, 1998; Blake & Mouton, 1970; Lax & Sebenius, 1986). Key to finding win-win solutions is mutual willingness to engage in problem-solving behavior. Problem-solving behavior implies that two parties exchange information, ask each other questions, and search for mutually satisfactory solutions in an active and creative way (De Dreu, Harinck & Van Vianen, 1999; Fisher & Ury, 1981; Rubin, et al., 1994; Thomas, 1992; Tjosvold, 1991; Van de Vliert, Nauta, Euwema & Janssen, 1997).

An important proposition of theoretical models on conflict and negotiation is that the likelihood of problem solving is increased when employees are not only

concerned about the goals of their own department, but also about the goals of other departments (Blake & Mouton, 1970; Rubin, et al., 1994; Thomas, 1976). This proposition received support in a recent review of negotiation research, in which De Dreu et al. (2000) found that negotiators are more likely to engage in problem solving with resultant win-win solutions when they couple a high concern for their own outcomes with a high concern for the opposing negotiator's needs and interests. However, their review shows that most negotiation studies were performed in the laboratory. Therefore, a first goal of this research was to examine the extent to which the above proposition holds for interdepartmental coordination and negotiation as well. When manufacturing and planning employees both value manufacturing goals and planning goals, department members should be more likely to adopt a problem-solving negotiation style compared to a situation in which employees only value the goals of their own department. The same should hold for the interface of planning versus sales. Thus, the *first hypothesis* tested in the current research was that the more members of different departments show concern for the goals of their own department and for the goals of other departments, the greater their tendency to adopt a problem-solving negotiation style.

Social Value Orientation and Organizational Goal Concerns

Social psychological theory and research suggests that the extent to which individuals in organizations are concerned about the goals of other departments within their organization is contingent, to some extent, on individual differences in *social value orientation* – general preferences for the distribution of outcomes between oneself and interdependent others (Messick & McClintock, 1968). Social value orientation is a relatively stable personality trait, which is distinct from peoples specific and variable preferences for outcome distributions in specific situations of conflicting interests.

Although an infinite number of such social value orientations have been described (McClintock, 1976), research typically distinguishes individuals as having a prosocial orientation from individuals with an individualistic or competitive

(proself) orientation. Prosocial individuals attach importance to the achievement of high outcomes for both themselves and other people with whom they are interdependent. Prosocial individuals dislike receiving good outcomes at the expense of others and instead favor 'win-win solutions', in which all interdependent members within the system, including themselves, receive high outcomes. Proself individuals, in contrast, have a high concern for their own outcomes, and either tend to ignore the outcomes of interdependent others or tend to maximize the relative advantage over other's outcomes (e.g., Beggan, Messick, & Allison, 1988; Kuhlman & Marshello, 1975; Liebrand & Van Run, 1985).

Social psychological experiments have shown that social value orientation strongly influences how people think and behave in social settings (De Dreu & McCusker, 1997; De Dreu & Van Lange, 1995; Olekalns, Smith, & Kibby, 1996; Van Lange & Liebrand, 1991). Particularly relevant for current purposes is research showing that social value orientations influences cognition, motivation and behavior in negotiations. De Dreu and Boles (1998) showed that when people prepare for a negotiation, prosocial individuals choose and recall more cooperative heuristics such as 'equal split is fair', whereas proself individuals choose and recall more competitive heuristics such as 'your gain is my loss'. De Dreu and Boles (1998) explain this difference empirically by demonstrating that prosocial individuals perceive cooperative heuristics as morally appropriate, whereas proself individuals perceive them as relatively ineffective. Furthermore, research has shown that prosocial negotiators behave in more conciliatory and trusting ways, and achieve higher joint gain than proself negotiators (De Dreu & Van Lange, 1995; Olekalns, Smith & Kibby, 1996; for a review, see De Dreu et al., 2000).

As mentioned, research on social value orientations in negotiation has been confined to laboratory settings. The problem with this kind of research is that participants are often confronted with situations that are relatively new to them. Research has shown that individual difference variables are particularly influential in situations that are new or unstructured (so-called ill-defined situations, Kenrick & Funder, 1991). In ill-defined, unstructured situations, a person's behavior is not prescribed by, and therefore not dependent on, the rules and procedures that can be

derived from the structure. Rather, behavior is more an expression of how the person actually is. In organizational settings, where people coordinate their activities over longer periods of time, the influence of individual difference variables may be substantially reduced, because the rules, procedures, and habits in the particular organizational setting may determine to a large extent how people behave. Hence, a second goal of the current research was to assess, for the first time, whether the impact of individual differences in social value orientations on attitudes and behavior still exists outside the laboratory, in organizational settings characterized by long-term and structured relationships.

Based on laboratory experiments, we expected that individual differences in social value orientation would influence organizational goal concerns of employees in organizations. Employees generally aim at goals characteristic of their own department. However, it is less likely that they will aim at the goals characteristic of other departments, despite the necessity for coordinating these goals for good organizational performance. Organizational leaders and consultants often complain that employees are 'throwing their stuff over the wall', instead of thinking through the consequences of their actions for other departments. Parker, Wall, and Jackson (1997), in a paper entitled 'That's not my job,' call this kind of attitudes a narrow role orientation, in which employees feel responsible for a limited number of tasks and goals (see also Porter & Lawler, 1968).

We expect that prosocial individuals more than proself individuals are inclined to develop a broader role orientation in which they consider not only the goals of their own department, but also those of other departments. Sales employees with a prosocial value orientation will be inclined to incorporate planning and manufacturing goals when making decisions about the acceptance of customer orders. Sales employees with an individualistic or competitive value orientation, in contrast, will be inclined to ignore the consequences of their decisions for planning and manufacturing goals, because these are not in their interest. Thus, the *second hypothesis* tested in the current research was that the more employees have a prosocial value orientation, the more they value the goals of other departments.

In essence, we are testing a path model, in which we expect that a prosocial value orientation leads to a high concern for the goals of other departments, which in turn leads to a problem-solving negotiation style. The *third hypothesis* therefore was that a high concern for other department's goals indeed serves as a mediating variable between prosocial value orientation and a problem-solving negotiation style.

Contextual Sidebar

Organizational Factors

The eleven Dutch manufacturing plants in this study were semi-autonomous parts of ten different (multinational) corporations, except one entirely autonomous plant. All plants had separate manufacturing, planning and sales departments at the same physical location. However, in some plants, the physical distances between the three departments were different than in other plants. At one plant, the sales and planning employees were located in the same room but separate from manufacturing, whereas at other plants, planning was located at the production floor, close to manufacturing, but separate from the sales office.

The production processes in the eleven plants in this study were relatively simple. They varied between 'batch processes' and 'mass processes', which means that the plants made an intermediate to high volume of products in intermediate to low variety (Slack et al., 1998). The plants made products such as flavors for food, soups and sauces, flexible food packaging, metal packaging, aluminum profiles, engine oil, paper, and (corrugated) cardboard. Most plants made their products to order instead of to stock (that is, they made their products only when there were real orders from customers, instead of producing them for future customers, based on forecasts about future demands). A make-to-order process requires more flexibility and more informal communication and coordination between manufacturing, planning and sales departments than a make-to-stock process, which may explain why the absolute level of interdepartmental problem solving was relatively high in this study.

Most plants had undergone several changes and restructurings prior to or during the study, ranging from a large investment in new machinery, an expansion with an extra physical location, a new owner, a merger, to a large-scale restructuring. Common in all these reorganizations was that many plants faced a growing variety, complexity and uncertainty in customer demands, with increasing levels of informal coordination between departments as an important consequence.

The financial health of most plants in this study was good to very good, with only one exception. Almost all plants competed on the basis of low cost and high quality of their products. They competed only marginally on high flexibility and high customer service. However, all plants expected that high flexibility and high customer service would become more important assets in the near future.

All plants in this study struggled to some extent with interdepartmental coordination, which was often one of the reasons why they participated in this study. They wanted to learn about how to improve informal communication, coordination and problem solving between departments. Hence, management and employees may well have realized the importance of effective interdepartmental coordination and problem solving.

Worker-Job Factors

The jobs of the participants in this study were relatively routine and narrow, with manufacturing employees having the most routine jobs, followed by planning employees, and finally sales employees. The settings therefore were relatively strong, leaving not much room for personality characteristics to influence problem solving behavior, because much coordination was done by means of rules and procedures about how to plan and manage manufacturing processes. Therefore, we believe that the influence of social value orientation upon organizational goal concerns and interdepartmental problem solving may be smaller in this study than in other organizational situations with broader and more complex jobs and with more room for informal rather than formal coordination mechanisms.

Almost all participants were autochthon Dutch. The relationships between peers within and between departments were relatively good, which may explain why the absolute level of problem solving was high. This may also be caused by the fact that the plants were all medium-sized, so everybody knew each other and physical distances were small. However, peers did not have much amicable relationships with each other: few saw their peers in leisure time.

External Environment

The plants were located in different places in the Netherlands, seven of them in urban places, four in rural places. The national economy of the Netherlands was very healthy at the time of the study (1998). The labor market started to grow tense, making job mobility easier. An important aspect of the Dutch national culture is that employers, unions and the government are used to negotiate agreements about wages and other working conditions, thereby striving for consensus (which is known as the 'Polder Model'). Such problem solving negotiation behavior at the level of the society is likely to occur also at the level of organizations, groups and individual employees. Thus, for Dutch employees, problem solving negotiation behavior may be a more common coordination mechanism than for employees in other countries.

Comment

In sum, the context of the eleven plants in this study encouraged employees to choose for problem solving negotiation behavior as an important informal coordination mechanism between departments. Employees worked physically close together, production processes were simple and flexible (make-to-order), with growing importance of high flexibility and high customer service, employees realized the importance of good interdepartmental coordination, relationships between peers were relatively good, and Dutch people are used to consensus seeking decision making.

Method

Sample

Eleven manufacturing organizations located in the Netherlands participated in the study. All organizations were manufacturing plants, with a minimum of 70 and a maximum of 1000 employees ($M = 286$; $SD = 299$). Only one of the eleven plants was an autonomous organization. Ten plants were semi-autonomous parts of ten different (multinational) corporations. All plants had separate manufacturing, planning and sales departments at the same physical location.

Data were collected through interviews with one hundred-twenty lower-level employees. Seventy-three percent were male. The average age was 38.2 years. Twenty-five percent had a college degree. They had worked in the current plant for 15.0 years on average, and in their current position for 6.9 years on average. Thirty-five employees (29%) worked in the manufacturing department, 41 (34%) in the planning department, and 44 (37%) in the sales department.

Procedure

Organizations were recruited via the network of (colleagues of) the first author. During initial conversations with one or more contact persons (usually the planning manager and/or the sales manager) of a participating organization, agreements were made about which employees would be interviewed. The selection criteria for participating in the research were, first, that employees worked in a low-level manufacturing, planning, or internal-sales function, and second, that employees engaged in operational day-to-day interdepartmental communication and decision making about the acceptance, planning and/or production of customer orders. These criteria applied to all planning and sales employees working at the lowest hierarchical level and to all foremen in the manufacturing departments. All planning

and sales employees were interviewed, as well as all foremen who were on day-duty at the time of interviewing.

Two interviewers, including the first author, interviewed all 120 employees. Participants were interviewed about goal concerns and problem-solving behavior, and they filled out a questionnaire to assess their social value orientation.

Measurements

Social value orientation. Social value orientation was assessed using the Kuhlman and Marshello (1975) decomposed game measure -- a measurement technique which has been demonstrated to have good internal consistency (e.g., Liebrand & Van Run, 1985), test-retest reliability (De Dreu & Boles, 1998; Kuhlman, Camac, & Cunha, 1986; Van Lange, 1999) and construct validity. As to the latter, Parks (1994) and Kuhlman and Marshello (1975) reported moderate negative correlations between this measure and a measure of generalized distrust, i.e., the F-scale (Robinson, & Shaver, 1973). The measure is introduced by the following instructions: "Below you see nine decisions in which you have to make a choice. Your choice influences the amount of points you and some other person will get. Think of the points as something that is valuable to you, to which you attach great importance. The other person also attaches great importance to the points."

Participants were subsequently asked to make decisions in nine decomposed games. In each decomposed game, participants could choose from different distributions of points to themselves and a hypothetical other person. Participants were given a choice among three alternatives, each corresponding to a different social value orientation. Table 1 provides some examples of the decomposed games used in the current study. In Example 1, option 1 represents an individualistic proself choice because one's own outcomes are larger (50) than are those in option 2 (40) or option 3 (40). Option 2 represents a competitive proself option, because it provides a greater advantage over the other's outcomes ($40 - 0 = 40$) than either option 1 ($50 - 20 = 30$) or option 2 ($40 - 40 = 0$). 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 ($40 + 0 = 40$).

The average number of prosocial choices was 5.22 ($N = 113$). The variable was far from normally distributed, and therefore, a median split was performed ($Md = 5.00$), with value = 0 representing a proself orientation (individuals who made less than 5 prosocial choices), and value = 1 representing a prosocial orientation (individuals who made 5 or more prosocial choices).

Table 1.

Three Examples of Decomposed Games

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

Goal Concerns. To measure goal concerns, six goals were explained to participants. These goals were chosen because in the literature on operations management, there is general consensus that these six goals are important to strive for in all manufacturing organizations (e.g., Slack, Chambers, Harland, Harrison, & Johnston, 1998). The goal of *efficiency* was defined as minimizing costs, *quality* as making good products, *delivery speed* as delivering fast, *delivery reliability* as delivering on time, *flexibility* as delivering a variety of products, quantities, and delivery times, and finally, *service* was defined as offering services to the customer, such as product information. Participants were asked the following question: ‘For

each of the goals, can you indicate the degree to which you are actually aiming at it? This may be, for example, because the goal is part of your job, because you are rewarded for achieving it, or because you believe the goal to be important for another reason.' Answers on every goal ranged from '1' = I am certainly not aiming at it, to '5' = I am certainly aiming at it.

To assess and compute 'concern for own goals' and 'concern for the goals of other departments' for manufacturing, planning and sales employees respectively, we performed a 3 x 6 multivariate analysis of variance, with department (manufacturing, planning, and sales) as between-subjects factor, goal (efficiency, quality, delivery speed, delivery reliability, flexibility, and service) as within-subjects factor, and concern for the goal as the dependent variable. The interaction effect of department X goal was highly significant ($F(10,580) = 11.06; p < .001$), which means that members of different departments strive for different goals. Efficiency appeared to be a manufacturing goal as well as a planning goal, because manufacturing and planning employees both aimed significantly more strongly at efficiency than sales employees, but there was no significant difference in concern for efficiency between manufacturing and planning employees (see Table 2). Quality appeared to be a manufacturing goal, because manufacturing employees aimed significantly more strongly at quality compared to both planning and sales employees. Delivery speed appeared to be a planning as well as a sales goal, because planning and sales employees both aimed significantly more strongly at delivery speed than manufacturing employees, but there was no significant difference in concern for delivery speed between planning and sales employees. Like delivery speed, delivery reliability appeared to be a goal of both planning and sales employees, because they both aimed significantly more strongly at delivery reliability than manufacturing employees, but there was no significant difference in concern for delivery reliability between planning and sales employees. Flexibility appeared to be a sales goal, as sales employees aimed significantly more strongly at flexibility than both manufacturing and planning employees. Like flexibility, service appeared to be a sales goal, because sales employees aimed significantly more strongly at service than both manufacturing and planning employees.

Table 2.

Goal Concerns as a Function of Department

	Department		
	Manufacturing (<i>N</i> = 35)	Planning (<i>N</i> = 41)	Sales (<i>N</i> = 44)
<i>Goal</i>			
Efficiency	4.69^a	4.46^a	3.98 ^b
Quality	4.89^a	4.20 ^b	4.25 ^b
Delivery speed	4.06 ^a	4.61^b	4.48^b
Delivery reliability	4.14 ^a	4.83^b	4.82^b
Flexibility	4.11 ^a	4.02 ^a	4.59^b
Service	3.23 ^a	4.15 ^b	4.80^c

Note. Means in the same row that have different superscripts differ significantly ($p < .05$). In each column, bold-printed means refer to 'own goals' of the department (as defined on empirical grounds).

To summarize (see Table 2), manufacturing employees had two 'own goals' (efficiency and quality), planning employees had three 'own goals' (efficiency, delivery speed, and delivery reliability) and sales employees had four 'own goals' (delivery speed, delivery reliability, flexibility, and service). For manufacturing, planning, and sales employees separately, the 'own goals' were averaged into one measure of 'concern for own goals', and the remaining goals were averaged into one measure of 'concern for the goals of other departments'.

Problem-solving behavior. Problem-solving negotiation behavior was measured by nine items adapted from Janssen and Van de Vliert (1996). Manufacturing

employees were asked to give examples of opposing interests that occurred between themselves and planning employees. The same was asked to manufacturing employees with regard to sales, to planning employees with regard to manufacturing as well as with regard to sales, and to sales employees with regard to manufacturing as well as with regard to planning. The employees gave examples such as the following: "Sales does not grasp how much work they saddle us when they come up with a rush order"; "Efficiency is very important for manufacturing and this collides with rush orders"; "Sales sometimes promises things to customers that are not feasible"; "Planning wants to schedule large batch sizes, whereas sales prefers small ones"; "Sometimes sales does not take costs into account: they order new packaging while the old ones are far from out of stock"; "Planning forces us to inefficient set-ups of the machines"; "Planning often schedules orders which, in terms of their format, run inefficiently on the machines".

Employees were asked about two negotiation situations, and therefore, the negotiation situation (instead of the individual) served as the unit of analysis in all statistical analyses that included negotiation behavior. Although most planning employees indeed negotiated with both manufacturing and sales employees, most manufacturing and sales employees said that they never negotiated with sales and manufacturing respectively, because all communication went via planning employees. The negotiation situations ($N = 150$) in the current study are therefore mainly concerned with the interfaces of manufacturing vs. planning ($n = 54$; 36%) and planning vs. sales ($n = 77$; 51%), whereas a small number of negotiation situations refers to the interface of manufacturing vs. sales ($n = 19$; 13%).

After the employees had given an example of opposing interests with the other department, they were asked to describe, by using the nine questionnaire items, whether they generally showed problem-solving negotiation behavior towards their colleagues in such a situation. Examples of problem-solving items are: 'Putting much energy in the work-out of a decision that meets both own as well as other's interests', and: 'Negotiating firmly about a middle course (Cronbach's $\alpha = .83$). Answers ranged from 1 = I certainly do not do that, to 5 = I certainly do that.

Results

Preliminary Analyses

To control for alternative explanations of differences in problem-solving behavior and concern for own goals and those of other departments, we examined whether there were significant differences between departments in demographic characteristics, prosocial value orientation, concern for own goals and those of other departments, and problem solving. It appeared that manufacturing employees were significantly older than planning and sales employees ($M = 42.9$, $M = 37.0$, and $M = 35.6$ years, respectively; $F(2,117) = 7.52$; $p < .005$), and worked significantly longer in the current plant ($M = 20.0$, $M = 14.0$, and $M = 11.9$ years, respectively; $F(2, 116) = 6.10$; $p < .005$). There were also gender differences ($\chi^2(2) = 37.55$; $p < .001$). At manufacturing, 100% of the employees were male, and at planning and sales 83% and 41% respectively. There were no significant interdepartmental differences in education level. Although there were significant interdepartmental differences in age, employment duration, and gender, these demographic variables were not related to social value orientation, goal concerns, or problem solving. Especially the absence of gender differences is noteworthy, since research has shown gender differences in negotiation-related behavior and attitudes (i.e., females are more cooperative than males), although these differences tend to be very small (Stuhlmacher & Walters, 1999; Walters, Stuhlmacher, & Meyer, 1998; see Table 3). Because none of the demographic variables was related to the variables of interest, there was no need to control for education level, age, employment duration, and gender in further analyses.

The employees of manufacturing, planning and sales did not differ in prosocial value orientation ($\chi^2(2) = 2.92$; ns ; $N = 113$) nor in concern for own goals ($F(2,117) = 1.33$; ns), nor in concern for the goals of other departments ($F(2,117) = .76$; $p < .05$), nor in problem-solving behavior ($F(2,147) = 2.76$; ns).

Table 3.

Means of Problem Solving, Concern for Own goals, Concern for the Goals of Other Departments, and Prosocial Value Orientation as a Function of Gender

	Male	Female	<i>t</i>	χ^2	df
Problem solving	3.40	3.63	-1.38		148
Concern for goals of own department	4.71	4.63	.93		118
Concern for goals of other departments	4.07	3.98	.46		118
Prosocial value orientation	52%	61%		.71	1

* $p < .05$; ** $p < .01$; *** $p < .001$.

Tests of the Hypotheses

The first hypothesis stated that a high concern for the goals of one's own department and a high concern for the goals of other departments are both positively related to problem-solving negotiation behavior. The second hypothesis stated that a prosocial value orientation is positively related to a high concern for other department's goals. Table 4 shows the intercorrelations between problem solving, concern for own goals and those of other departments, and a prosocial value orientation. As expected in the first hypothesis, both a high concern for the goals of one's own department and a high concern for the goals of other departments were positively related to a problem-solving negotiation style ($r = .20$; $N = 142$; $p < .05$, and $r = .44$; $N = 142$; $p < .001$, respectively). A regression analysis (see Table 5, Model 1) of problem solving on concern for own goals and concern for the goals of other departments showed that they jointly explained problem solving ($R^2 = .22$; $F(2, 139) = 19.23$; $p < .001$), but that the contribution of concern for own goals was not significant ($\beta = .14$; *ns*), whereas the contribution of concern for other's goals was highly significant ($\beta = .42$; $p < .001$).

Table 4.

Means, Standard Deviations and Intercorrelations of Problem Solving, Concern for Own goals, Concern for the Goals of Other Departments, and Prosocial Value Orientation (N = 142 negotiations)

	<i>M</i>	<i>SD</i>	1.	2.	3.
Problem solving	3.44	.86			
Concern for goals of own department	4.65	.43	.20*	.	
Concern for goals of other departments	4.07	.89	.44***	.14	
Prosocial value orientation	.54	.50	.25**	-.05	.36***

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5.

Regression Analysis with Problem Solving as the Dependent Variable and with Concern for Goals of Own Department and Concern for Goals of Other Departments as Independent Variables (N = 142 negotiations)

	β
Concern for goals of own department	.14
Concern for goals of other departments	.42***
R^2	.22
Adjusted R^2	.21
F	19.23***
Df	2, 139

* $p < .05$; ** $p < .01$; *** $p < .001$.

In support of the second hypothesis, there was a positive correlation between a prosocial value orientation and a high concern for the goals of other departments ($r = .36$; $N = 142$; $p < .001$). Prosocial value orientation was also positively related to problem-solving negotiation behavior ($r = .25$; $N = 142$; $p < .01$).

To test our third hypothesis, whether a high concern for the goals of other departments serves as a mediating variable, we followed the procedure recommended by Baron and Kenny (1986) by building three regression models (see Table 6). In the first model, concern for the goals of other departments – the expected mediator - was regressed on prosocial value orientation ($\beta = .36$; $p < .001$). In the second model, problem solving was regressed on prosocial value orientation ($\beta = .25$; $p < .01$; the regression coefficients in both Model 1 and Model 2 are of course equal to the correlations as mentioned above, because both regression models have only one independent variable). In the third model, problem solving was regressed on both prosocial value orientation and concern for the goals of other departments. The third model shows that when concern for goals of other departments is added (with a significant effect of $\beta = .41$; $p < .001$), the regression coefficient of prosocial value orientation drops to non-significance ($\beta = .11$; *ns*). All conditions for mediation were met, because prosocial value orientation (the independent variable) affected concern for goals of other departments (the mediator) as well as problem solving (the dependent variable), because concern for goals of other departments affected problem solving, and because prosocial value had no significant effect upon problem solving anymore when concern for the goals of other departments was controlled (cf. Baron & Kenny, 1986). In other words, a prosocial value orientation did not directly increase problem solving, but indirectly, via its positive impact on concern for goals of other departments, which is in support with the third hypothesis.

Table 6.

Regression Analyses to Test whether Concern for Goals of Other Departments Mediates between Social Value Orientation and Problem Solving (N = 142 negotiations)

Criterion variable:	Model 1 Concern for goals of other depts.	Model 2 Problem solving	Model 3 Problem solving
Prosocial value orientation	.36***	.25**	.11
Concern for goals of other depts.			.41***
R^2	.13	.06	.21
Adjusted R^2	.12	.06	.20
F	20.39***	9.38**	18.12***
Df	1, 140	1, 140	2, 139

* $p < .05$; ** $p < .01$; *** $p < .001$.

Note. Standardized regression coefficients are reported.

Discussion

In line with the predictions, the current research has demonstrated that a prosocial value orientation increases the likelihood that individuals in organizations show a high concern for the goals of other departments. A high concern for the goals of other departments combined with a high concern for own goals increases the likelihood that individuals will adopt a problem-solving negotiation style during interdepartmental negotiations, although concern for the goals of other departments appears to be a better predictor than concern for own goals. As predicted, a high concern for the goals of other departments serves as a mediating variable between a prosocial value orientation and a problem-solving negotiation style.

The present study suggests that a prosocial value orientation can explain why some individuals in organizations develop broad role orientations (cf. Parker et al., 1997), in which they are concerned with a large number of goals, whereas other individuals develop a narrow role orientation, in which they only focus on goals characteristic of their own department, thereby neglecting other organizational goals. Especially for organizations that depend on mutual adjustment as the main coordination mechanism between departments, it seems important to select their employees partly on the basis of personality characteristics, such as their tendency to respect and be concerned with the interests of other people. Alternatively, organizations may seek to train and develop prosocial value orientations, which may be achieved by emphasizing collective goals, by rewarding prosocial orientations more than individualistic or competitive orientations, or by emphasizing the continuity of future collaborations (for a review, see De Dreu et al., 1999). When selecting or developing prosocial value orientations within one's organization, the organization can trust that its employees will focus on organization wide rather than parochial goals. In future research, it may be interesting to test whether the influence of a prosocial value orientation can be generalized to other forms of altruistic attitudes and behavior in organizations, such as 'organizational citizenship behavior'

(Lam, Hui, & Law, 1999; VanYperen, Van den Berg, & Willering, 1999) and ‘extra-role behavior’ (Schaubroeck & Fink, 1998; Van Dyne & LePine, 1998).

We can have confidence in the validity of the current results because past research has revealed (a) the measurement of social value orientations to be resistant to social desirability biases (Van Lange, 1999), (b) social value orientations to predict cognition, motivation and actual behavior over longer time intervals (e.g., De Dreu & Boles, 1998; Van Lange, 1999) and (c) self-reported social value orientations and goals concerns to be related to actual problem-solving behavior in negotiation (De Dreu & Van Lange, 1995; De Dreu et al., 2000; Olekalns, Smith & Kibby, 1994).

The current study replicated the dual concern model of Rubin, Pruitt, and Kim (1994) and Thomas (1976) outside the laboratory and with indirect measures of goal concerns. Rather than asking people how important they in general find their own goals and goals of another negotiation party, we asked for the importance of specific organizational goals derived from the literature on the daily management of manufacturing processes (Slack et al., 1998). By doing so, we could empirically determine which organizational goals are attributed to which departments, and then derive measures of concern for own goals and for the goals of other departments. The significant correlations found between, on the one hand, these measures of concern for own and other's goals and, on the other hand, a problem-solving negotiation style provide strong support for the dual concern model.

Although it was not a central issue of the current study, it is interesting to note that we have empirically demonstrated what kind of goals are important for employees in different departments. The six organization goals examined in this study were selected from the field of operations management, in which there is consensus that these six goals are the main general goals that manufacturing firms more or less strive for (e.g., Slack et al., 1998). It appeared that within the eleven plants in this study, manufacturing employees aimed at efficiency and quality, planning employees aimed at efficiency, delivery speed, and delivery reliability, and sales employees aimed at delivery speed, delivery reliability, flexibility and service. Knowledge of these goal differences may help clarify the structural conflicts of

interests that possibly divide manufacturing, planning and sales departments. Such insights in underlying interests may contribute to finding integrative solutions (cf. Lax & Sebenius, 1986).

However, the specific distribution of organizational goals over different departments is likely to depend on the organizational structure of a firm. It is likely that in traditional, functionally-oriented firms, with clear boundaries between manufacturing, planning and sales departments, goal differences will be larger and clearer than in modern, product-oriented firms, with multifunctional teams organized around products. An interesting hypothesis for further research thus seems to be to test whether a product-oriented structure indeed dampens clear goal differences between manufacturing, planning, and sales employees, and, consequently, increases the likelihood of problem solving.

In this study, no gender differences were found in prosocial value orientation, goal concerns, or problem-solving behavior. This is consistent with meta-analytic reviews of gender differences in negotiation-related attitudes and behaviors, which report that there are hardly any gender differences in cooperativeness (Bettencourt & Miller, 1996; Gayle, Preiss, & Allen, 1994; Krone, Allen, & Ludlum, 1994; Stuhlmacher & Walters, 1999; Walters, Stuhlmacher, & Meyer, 1998; Watson, 1994). For example, Walters, Stuhlmacher, and Meyer (1998) examined 62 research reports on the relationship between gender and competitive bargaining behavior and concluded that women bargain more cooperatively than men, but that this difference is very slight.

To conclude, the results of the current study demonstrate the relevance of connecting knowledge of experimental laboratory studies on social value orientations and negotiation behavior on the one hand, and applied organizational behavior studies on interdepartmental coordination on the other hand. Specifically, the practical contribution of this study is that for jobs that require collaboration with employees of other departments, it seems to be important to select or develop prosocial individuals, for this study has shown that a prosocial value orientation is positively associated with collaborative attitudes and behavior that employees demonstrate in their daily working lives.

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