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Why promises and threats need each other

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Abstract

Despite the pervasive use of promises and threats in social life, very little research has been devoted to examining the effectiveness of these interpersonal tactics in promoting cooperation in social dilemmas. Based on the Goal-Prescribes-Rationality principle, we hypothesized that cooperation should be most strongly enhanced when promises and threats are communicated in combination, rather than in isolation. Also, we hypothesized that the combination of promises and threats should be especially effective among individuals holding prosocial orientations rather than proself orientations. Two studies provided good evidence for the latter hypothesis, in that the combination of promises and threats was only effective in people with prosocial orientations, people who are concerned with equality and collective interest. Copyright © 2006 John Wiley & Sons, Ltd.

Social life would be easy if we could always pursue our interest without any harm to others. Yet life is not that easy, as we often face situations in which our own interests conflict with the interests of others and those of the collective situations which are known as *social dilemmas*. If we do what is best for us in such situations, then others may suffer as a result. Consider, for example, the consequences if we only made selfish choices: we would evade taxes, we would not conserve the environment, and, on a more interpersonal level, we would hurt one another by not considering each others' preferences or needs.

In each of these examples, the collective—be it the society as a whole or just two individuals who are interdependent—suffers when individuals pursue their own interest. In fact, if enough individuals pursue their own interests, they themselves will also end up being worse off than if all had pursued the collective interest: no one benefits if the government can no longer afford its services due to lack of tax revenue, no one benefits from the destruction of the environment, and no one can take advantage of others who seek to take advantage of you. The paradox of the social dilemma therefore is that what is rational for an individual (i.e., not to cooperate) is detrimental for the collective, while what is rational for the collective (i.e., to cooperate) goes at the expense of the individual. Fortunately, however, many

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people do take the interests of others into account. Indeed, many prefer a solution that is beneficial for both sides (i.e., for the collective) even though such a solution is irrational from an individual perspective. But how do people reduce the risk of being exploited that accompanies such a cooperative strategy? One way is by communicating.

People frequently use messages, such as promises and threats, to motivate others to cooperate in social dilemmas. Such interpersonal tactics give the recipient a potentially important reason to adopt a cooperative strategy when it is not in his or her immediate interest to do so. Promises communicate the potential of a reward in response to cooperative behavior ('Employees who use public transport will get a refund for their expenses'), whereas threats communicate the potential of a punishment in response to non-cooperative behavior ('If you commute by car you will be charged a parking fee'). In this example promises and threats are communicated explicitly, but this need not be the case. Nonverbal acts, for instance a smile or a scowl, may also cause people to infer possible positive or negative consequences of their behavior. Promises and threats therefore abound in everyday life, and in many cases, either message can potentially resolve a conflict. Consider the example of a workforce of an organization that underperforms. A manager could resolve the issue by promising a raise, but threatening a pay cut might have the same effect.

While promises and threats are quite ubiquitous in everyday life, it is surprising that these 'interpersonal mechanisms' have received little attention in social psychology. In fact, in contemporary textbooks, there is often very little, if any, discussion of promises and threats. The lack of attention for promises and threats is all the more surprising if we consider that results of the scant research that has been done on promises and threats are largely inconsistent. In some studies, people resolve conflicts more readily when they make promises (e.g., Lindskold, Betz, & Walters, 1986; Orbell, Van de Kragt, & Dawes, 1988; Schenkler, Bonoma, Tedeschi, & Pivnick, 1970) or threats (e.g., Horai & Tedeschi, 1969; Michelini, 1975). In other studies promises and threats have the opposite effect, and make conflicts less likely to be resolved (e.g., Chen & Komorita, 1994; Deutsch & Krauss, 1960; Lindskold & Collins, 1978). Some studies indicate that promises are more effective than threats (Rubin & Lewicki, 1973), while others argue the opposite (McClintock, Stech, & Beggan, 1987; Stech, McClintock, & Moss, 1984). Research on concession strategies even hints that promises and threats could be particularly effective when communicated together rather than in isolation (Hilty & Carnevale, 1993; Lindskold & Bennett, 1973; Lindskold & Collins, 1978; Loomis, 1959; Milburn, 1959; Osgood, 1959), although in these studies the unique effect of such messages cannot be disentangled from the effects of other elements of the concession strategy. Overall, then, research on promises and threats has mostly yielded inconsistent results. How can these inconsistencies be explained?

In part, inconsistencies between previous studies can be attributed to differences in methodology and in the operationalization of messages—both are so varied that it is exceedingly difficult to draw any firm conclusions about the effects of promises and threats on cooperation in social dilemmas. But we argue that these inconsistencies could also be explained by differences in personality among the recipients of promises and threats, an explanation, which has received only limited attention in previous studies (see Lindskold, Walters, & Koutsourais, 1983; Parks, Henager, & Scamahorn, 1996). Specifically, we suggest that the interaction goals with which individuals approach social dilemmas may be essential to the understanding of the combined impact of treats and promises. Promises, threats, and combinations of these messages explicitly emphasize what consequences the actions of the recipient of the message will have on the outcomes of the conflict. We therefore argue that personality characteristics that are associated with preferences for specific outcomes of conflicts, such as individual gain, equality of outcomes, and collective gain, may moderate the effect that promises, threats, and combinations of the two have on cooperation in a social dilemma. In the present contribution, we therefore focus on people's social value orientation, a characteristic, which is strongly predictive of people's inclination to pursue collective or self-serving interests.

The present research seeks to attain two goals. First, we want to understand whether the combination of promises and threats may be more effective than either promises or threats alone. Second, and more importantly, we seek to demonstrate that the combination of promises and threats may be particularly effective for people who are inclined to pursue collective interests rather than self-serving interests. Hence, we examine whether the effects of promises and threats may be moderated by pre-existing differences in social value orientation. We turn to this variable next.

A NEW PERSPECTIVE ON PROMISES AND THREATS

Social value orientations are defined as people's preferences for particular distributions of outcomes between themselves and others (Messick & McClintock, 1968; Van Lange, Otten, De Bruin, & Joireman, 1997). Three orientations are often distinguished, including (a) *prosocial orientation*, the tendency to enhance outcomes for self and others and to enhance equality in outcomes, (b) *individualistic orientation*, the tendency to enhance outcomes for self, with little or no regard for other's outcomes, and (c) *competitive orientation*, the tendency to enhance relative advantage over others. These social value orientations predict how people behave in a wide range of situations in which their decisions have consequences for themselves and for others, for example, sacrifice in relationships, helping behavior, and donations to noble causes (McClintock & [Messick^{Q1}](#), 1988; Van Lange, Van Vugt, Bekkers, & Schuyt, 2006).

Q1

In social dilemmas, people's social value orientations explain the choices they make, the choices they expect from others, and the goals they pursue (Kelley & Stahelski, 1970a,b; Kuhlman & Marshello, 1975; Liebrand, Jansen, Rijken, & Suhre, 1986; McClintock & Liebrand, 1988; Sattler & Kerr, 1991; Van Lange, 1999; Van Lange & Kuhlman, 1994). Prosocials are particularly interested in outcomes that are beneficial for both sides, i.e., they seek to further the collective interest. Individualists and competitors, in contrast, are not concerned with the collective interest and seek to achieve (absolute or relative) individual gain, i.e., they focus primarily on the individual interest (for this reason we classified individualists and competitors to a superordinate category of *proselfs*, individuals primarily concerned with their own outcomes, in an absolute sense or in comparison to the other, cf. Van Lange & Semin-Goossens, 1998). For our present purposes, the distinction between prosocials on one hand and proselfs on the other is important, because prosocials and proselfs tend to take different *perspectives of rationality* in social dilemmas.

The Goal-Prescribes-Rationality Principle

According to the Goal-Prescribes-Rationality principle (see [Komorita^{Q2}](#) & Parks, 1995; Pruitt & Kimmel, 1977), prosocials and proselfs take different *perspectives of rationality* in social dilemmas—they have different beliefs about what constitutes a rational decision in such a situation (Van Lange, Liebrand, & Kuhlman, 1990; Van Lange & Kuhlman, 1994; see also Joireman, Kuhlman, Van Lange, Doi, & Shelley, 2003). Prosocials are inclined to adopt a collective perspective, and hence perceive social dilemmas as situations in which both parties can either achieve collective profit or incur collective loss. Consequently, prosocials see a cooperative choice as rational in a social dilemma: the collective outcome is greater if both parties make a cooperative choice than if both make a non-cooperative choice. In contrast, proselfs are inclined to adopt an individual perspective, and perceive social dilemmas as situations in which they can either achieve individual profit or incur individual loss. Proselfs therefore see a non-cooperative choice as rational in a social dilemma: one's individual outcome is greater if one does

Q2

not cooperate, irrespective of the other's choice (and non-cooperation is also rational if one seeks relative advantage over others: the cooperative choice can never yield relative advantage).

Perspective of Rationality and Promises and Threats

We argue that what perspective of rationality an individual takes may strongly determine how he or she is affected by promises and threats. The perspective of rationality a person takes determines on which outcomes that person is inclined to focus in a social dilemma—individual or collective outcomes (see Camac, 1992). We suggest that promises and threats refer to specific outcomes of the social dilemma (e.g., mutual cooperation, mutual non-cooperation, or both). We argue that if a message refers to outcomes which correspond with a recipient's perspective of rationality (i.e., outcomes that are individually or collectively rational), then such a message may be particularly persuasive—in the words of Loomis (1959): (in a situation of interdependence, an individual) ‘...must be assured that the other person's thinking is similar to his own before there is any basis for cooperation.’¹

To which outcomes do promises, threats, and combinations of promise and threat refer, and to whom should they appeal? Promises communicate the potential of a reward in response to cooperative behavior. A promise therefore conveys the mutual cooperation outcome: if the recipient cooperates, both parties achieve a desired outcome (cooperation for the communicator, the promised reward for the recipient). Threats, in contrast, communicate the potential of a punishment in response to non-cooperative behavior. A threat therefore conveys the mutual non-cooperation outcome: if the recipient does not comply, both parties achieve undesired outcomes (non-cooperation for the communicator, the threatened punishment for the recipient). Consequently, a message that consists of both a promise and a threat refers to *both* mutual cooperation and mutual non-cooperation. These two outcomes constitute the ‘diagonal of collective rationality,’ the optimal and worst outcomes in a social dilemma from the collective's point of view (Camac, 1992). As such, a message that consists of a promise and a threat might be considered an appeal to the recipient to take the collective interest into account.

We expect that an appeal to collective interest, based on a promise and a threat, makes a difference—but more so to prosocials than to proselfs. Relative to proselfs, prosocials are more uncertain about others' intentions (Kelley & Stahelski, 1970a,b). Consequently, prosocials should be more strongly motivated to identify their partner's intent—the intent of which our messages are informative. Prosocials might particularly infer that the partner shares their concern with the collective interest when they receive a message that consists of both a promise and a threat: a message that comprehensively conveys collective rationality. We therefore expect prosocials to cooperate more with a person who communicates both a promise and a threat than with a person who communicates either a promise or a threat in isolation. We do not expect an appeal to the collective rationality to have the same effect for proselfs, however. The collective interest means little for proselfs: they are interested in individual gain, not in collective gain and loss. Thus, the combination of promises and threats is expected to be more effective for prosocials than for proselfs.

RESEARCH OVERVIEW AND HYPOTHESES

In the above we have provided a conceptual framework, with which we can understand why promises and threats may yield more cooperation when they are presented together rather than individually. This

¹One could also argue the opposite, i.e., a message, which contradicts one's perspective would be novel and therefore particularly persuasive. The present findings, however, did not support this notion.

framework, based on the Goal-Prescribes-Rationality principle, also informs us how differences in social value orientation could determine if promises, threats and in particular combinations of promises and threats might persuade people to cooperate more.

We advanced two major hypotheses. First, we expected that the combination of promises and threats would elicit greater levels of cooperation than promises or threats in isolation (Hypothesis 1). Second, and more directly inspired by our framework, we expected that the combination of promises and threats (relative to their isolated effects) would be more effective among individuals with a prosocial orientation rather than proself orientation (Hypothesis 2).

Finally, in a more exploratory vein, we examined whether promises would be more effective than threats or *vice versa*. As alluded to earlier, past research has yielded somewhat inconsistent findings, even though the positive effects of promises seems to have been observed somewhat more frequently than the positive effects of threats. However, given that the empirical literature is not entirely clear, and given that our framework does not directly speak to the relative effectiveness of threats and promises, we did not advance a formal hypothesis.

STUDY 1

We first tested our hypotheses in a preliminary study, in which we compared participants' level of cooperation in a social dilemma task after they received a promise, a threat, or both a promise and a threat. Moreover, we examined whether the effects of these messages depended on pre-existing differences in social value orientation.

Method

Participants and Experimental Design

Sixty-one undergraduate students from the Free University at Amsterdam participated in Study 1. The sample consisted of 36 women and 25 men (average age 20 years). The experimental design was a 3 (message type: promise vs. threat vs. combination of promise and threat) by 2 (social value orientation: prosocials vs. proselfs) by 4 (rounds) design, the last variable being a within-participants variable.

Procedure

We recruited participants for the present study at the Free University campus. Upon their arrival in the laboratory, participants seated themselves in a cubicle. Each cubicle contained a computer, which we used to provide instructions and to register dependent measures. First, we measured the participants' social value orientation using a series of nine decomposed games (Messick & McClintock, 1968; for further information about the instrument, see Van Lange et al., 1997). Participants chose among three distributions of points between themselves and (hypothetical) other. In each decomposed game, one outcome distribution yielded equality (the prosocial option), one yielded individual gain for the participant (the individualistic option), and one yielded relative difference with the outcome of the hypothetical other (the competitive option). We classified participants in terms of their social value orientation if they made at least six choices (out of nine) that were consistent with a prosocial, individualistic, or competitive distribution of outcomes (cf. McClintock & Allison, 1989; Van Lange &

Kuhlman, 1994). We did not expect an appeal to the collective rationality to affect individualists and competitors differently, as neither group is concerned with the collective interest. For this reason, we categorized both individualists and competitors as proselves—people who are mostly self-interested. In our sample, this classification yielded a group of 31 prosocials and 22 proselves, with both categories distributed about evenly across the three message conditions. Eight participants could not be classified and were removed from the sample. After the participants completed all decomposed games, they proceeded to the instructions for the experimental task.

Participants learned that in the experimental task they would be making decisions together with another participant. The computers of the participant and the interaction partner were allegedly connected through a central server. In fact, the participants did not interact with another individual: their partner was simulated using a preprogrammed tit-for-tat strategy. The instructions subsequently explained the decision task itself in more detail.

We informed participants that in the decision task both they and their partner would individually make decisions about money. At the start of each round, participant and partner would both receive 10 coins, any number of which they could keep or give to the other. Any coins the participant or partner kept would remain equal in value, while any coins they gave would have double the value for the recipient. The task, then, represents a social dilemma: the individually rational choice (i.e., keeping as many coins as possible) is directly opposed to the collectively rational choice (i.e., giving each other as many coins as possible). Participants' contributions to their partner therefore are a scale measure of cooperation, with a contribution of no coins reflecting minimal cooperation and a contribution of 10 coins reflecting maximal cooperation (this task was adapted from Van Lange, Ouwerkerk, & Tazelaar, 2002).

How many coins the partner contributed depended on the participants' own contributions: we simulated the interaction partner using a preprogrammed tit-for-tat strategy. As such, the partner contributed six coins in the first round of the interaction, and subsequently reciprocated the exact number of coins the participant had contributed in the preceding round. In total, the task consisted of four decision rounds in which the participant and the partner simultaneously made their decision. The exact number of rounds was unknown to the participants, however. At the end of each round, the computer displayed the number of coins the participant and the partner had given, and summarized the outcomes of the present round.

The outcomes of the social dilemma were presented in terms of money. We did inform the participants, however, that these outcomes were hypothetical and would not affect their actual payment. Instead, participants would increase their chances in a raffle for a book certificate (worth 15 Euros, about \$15) if they achieved high outcomes. We stressed that the participants' absolute outcomes, rather than their outcomes relative to those of the partner, would determine their chances in the raffle: as the number of certificates was not fixed, participants did not need to outperform their partner to obtain the prize (an identical procedure was employed by Van Lange and Visser (1999) and Van Lange et al. (2002)). In fact, each participant had an equal chance in the raffle, regardless of their outcomes in the task.

Manipulation of Message

After the instructions for the decision task, the instructions proceeded to address communication. Participants learned that one randomly determined member of their dyad would be able to send a message before the start of the social dilemma task. In fact, we preprogrammed the computer to assign the ability to communicate to the simulated interaction partner; this enabled us to manipulate the content of the messages. Depending on the message condition, participants received one of the following messages: (a) a promise: 'If you give me many coins, I will give you many coins as well'; (b) a threat: 'If you give me few coins, I will give you few coins as well'; or (c) a combination of promise

and threat: 'If you give me many coins, I will give you many coins as well. But if you give me few coins, I will give you few coins as well.' After they received the message, the participants proceeded with the first round of the social dilemma task. After the last round, we debriefed the participants and paid them for their participation.

Results and Discussion

As described above, our measure for cooperation was the number of coins participants gave to their partners in the social dilemma task. We analyzed these contributions in a 3 (message type) $\times$ 2 (social value orientation) $\times$ 4 (rounds) analysis of variance, the last variable being a within-participant variable. In the present study, we aimed to establish if a combination of promise and threat would elicit more cooperation than a promise or threat in isolation, and if social value orientation would moderate this effect. We therefore computed two orthogonal contrasts: (1) a contrast comparing participants' cooperation after the combination of promise and threat with cooperation after either promise or threat in isolation (a *combined* vs. *single* contrast), and, in a more explorative vein, (2) a contrast comparing participants' cooperation after a promise with cooperation after a threat (a *promise* vs. *threat* contrast). The first contrast directly tests our hypotheses regarding the effect of an appeal to the collective rationality; the second, although not directly related to our hypotheses, addresses inconsistent findings regarding the effects of promises and threats.

The 3 (message type) $\times$ 2 (social value orientation) $\times$ 4 (rounds) analysis of variance on participants' contributions yielded no main effect for message type, $F(2, 47) = 0.14, n.s.$, but did reveal a significant interaction between message and social value orientation, $F(2, 47) = 3.46, p < 0.05$. To evaluate Hypotheses 1 and 2, we computed the combined versus single contrast. While the contrast itself was not significant, $F(1, 47) = 0.13, n.s.$, we did obtain a significant interaction of the contrast and social value orientation, $F(1, 47) = 6.61, p < 0.05$. As can be seen in Figure 1, among prosocials, promises and threats were more effective ($M = 8.16, SD = 1.74$) than promises alone ($M = 6.50, SD = 2.74$) or threats alone ($M = 5.68, SD = 1.26$). Indeed, the contrast was significant for prosocials,

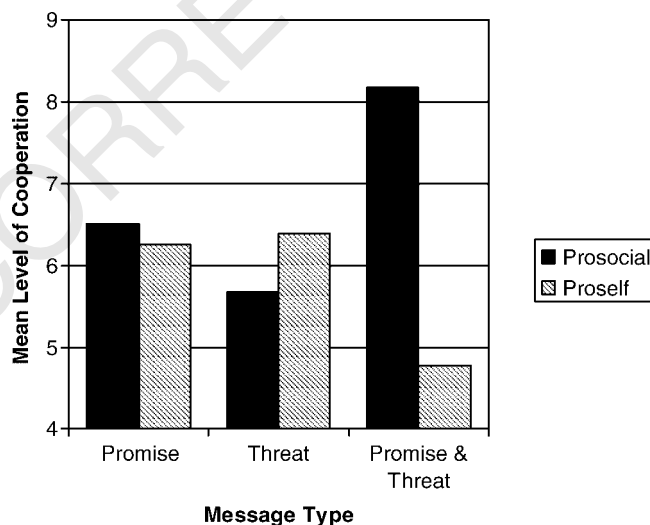


Figure 1. Mean level of cooperation for participants with a prosocial or proself orientation in three message type conditions, Study 1

$F(1, 47) = 6.30, p < 0.05$. However, among proselves, there was no significant contrast, $F(1, 47) = 2.21, n.s.$: among proselves, promises and threats did not elicit significantly greater cooperation than did promises alone or threats alone ($M = 4.78, SD = 2.55$, vs. $M = 6.25, SD = 3.46$ and $M = 6.39, SD = 2.69$). Also, there were no significant effects involving the promise versus threat contrast. Finally, in the overall analysis, we did not find any significant effect associated with rounds, suggesting the generality of the findings across trials 1 through 4.

Thus, while promises and threats did not yield an overall effect (i.e., did not support Hypothesis 1), the findings provided good, initial support for Hypothesis 2. For prosocials, a message consisting of both a promise and a threat (i.e., which we assumed to appeal to collective rationality) elicited greater levels of cooperation than did either a promise or a threat in isolation. For proselves, in contrast, our manipulation of message type appeared to have no significant effect.

STUDY 2

The major purpose of this study is to extend and complement Study 1 in at least two important respects. First, Study 1 used a simultaneous-choice social dilemma, in which individuals were forced to make a choice simultaneously. This paradigm has several benefits, in that it allows researchers to examine choice in a manner independent of the other's actual choice. At the same time, the paradigm is not necessarily realistic, as many real-life situations involve sequences of behaviors. In fact, most exchanges of favors, services, or help (e.g., assistance in moving, baby-sitting) occur in alternation, rather than simultaneously. Moreover, promises and threats would also seem more appropriate in a sequential rather than simultaneous choice paradigm: if promises or threats are to motivate people to cooperate, then the relationship between the recipient's decision and the corresponding promised reward/threatened punishment must be immediate and clear. This goal is better attained when people decide in alternation rather than simultaneously. A sequential decision task, therefore, may better describe the way in which people decide in conflicts of interest, and the way in which people use promises and threats. In study 2, we therefore adopted a sequential social dilemma paradigm.

Second, a sequential social dilemma also allowed us to establish whether the contribution the partner made in the first round would affect the persuasiveness of promises, threats, and their combinations. For example, a request to cooperate from a partner who behaves non-cooperatively may be less persuasive than a similar request from a partner who behaves cooperatively. In the case of promises and threats, however, this may not always be the case. People could perceive a threat as more forceful and credible when it is accompanied by a non-cooperative initial choice, while the opposite might be true for a promise accompanied by an uncooperative initial choice. Similarly, people might perceive a threat accompanied by a cooperative initial choice as less credible, and a promise accompanied by cooperation as more credible. To examine whether the effect of initial choices would differ among our message conditions, we manipulated the partner's contribution on the first trial to be low, moderate, or high.

Method

Participants and Experimental Design

Participants were 119 undergraduate students from the Free University at Amsterdam. The sample consisted of 65 women and 54 men (average age 20 years). The experimental design was a 3 (initial choice: low vs. moderate vs. high) by 3 (message type: promise vs. threat vs. combination of promise

and threat) by 2 (social value orientation: prosocials vs. proselfs) by 4 (rounds) design, the latter variable being a within-participant variable.

Procedure

The procedure of Study 2 was identical to that of Study 1. Like in Study 1, we measured participants' social value orientation and assigned them to the prosocial or the proself group. Of our 119 participants, 53 had a prosocial orientation and 45 had an individualistic orientation. Both categories were distributed about evenly across the three message conditions. Twenty-one participants made fewer than six consistent choices, and therefore could not be classified. These participants were excluded from the data analyses.

The Experimental Task

In Study 2, we made two changes to the experimental task. First, as noted earlier, the participant and interaction partner now made their decisions in alternation, rather than simultaneously. We used a lottery to assign the ability to communicate and to determine the decision order. We fixed the result of this lottery, and as a consequence the interaction partner was always the one to send a message and to decide first. Second, in Study 2 we manipulated not only the type of message the partner sent, but also the partner's initial contribution on the social dilemma task. In the first round, the partner contributed no coins in the low initial contribution condition, five coins in the moderate initial contribution condition, and 10 coins in the high initial contribution condition.

Results and Discussion

Like in Study 1, our measure for cooperation was the number of coins participants gave their partner. We analyzed these contributions in a 3 (initial contribution) $\times$ 3 (message type) $\times$ 2 (social value orientation) $\times$ 4 (rounds) analysis of variance, with the last variable being a within-participants variable. We computed the same orthogonal contrasts as in Study 1: (1) a contrast comparing the participants' cooperation after the combination of promise and a threat with cooperation after either promise or threat in isolation (a *combined* vs. *single* contrast), and (2) a contrast comparing participants' cooperation after a promise with cooperation after a threat (a *promise* vs. *threat* contrast).

We performed the 3 (initial choice) $\times$ 3 (message type) $\times$ 2 (social value orientation) $\times$ 4 (rounds) analysis of variance on participants' contributions. This analysis revealed no significant main effect of message type, $F(2, 80) = 1.43$, *n.s.* However, the combined versus single contrast was marginally significant, $F(1, 80) = 2.73$, $p = 0.10$, revealing that participants exhibited somewhat greater cooperation when they received both a promise and a threat ($M = 6.73$, $SD = 3.63$) rather than a promise ($M = 5.58$, $SD = 3.11$) or a threat ($M = 5.25$, $SD = 3.55$) in isolation. This finding provides some support for Hypothesis 1.

Relevant to Hypothesis 2, the analysis revealed a significant interaction between message and social value orientation, $F(2, 80) = 5.26$, $p < 0.01$. Next, we computed the combined versus single contrast to establish whether the interaction supported our hypothesis regarding the effects of promises, threats and combinations for prosocials and proselfs. As predicted, planned comparisons revealed a significant interaction between the combined versus single contrast and participants' social value orientation, $F(1, 80) = 10.50$, $p < 0.005$. As in Study 1, the combined versus single contrast was significant for

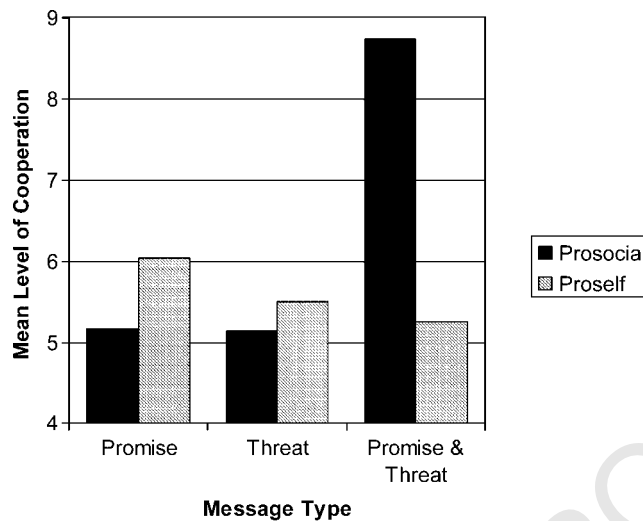


Figure 2. Mean level of cooperation for participants with a prosocial or prosself orientation in three message type conditions, Study 2

prosocials, $F(1, 80) = 11.32, p = 0.005$, indicating that prosocials exhibited significantly greater levels of cooperation when they received a message consisting of both a promise and a threat than when they received either a promise or a threat in isolation ($M = 8.73, SD = 1.80$, vs. $M = 5.16, SD = 3.36$ and $M = 5.14, SD = 3.40$, see Figure 2). The combined versus single contrast was not significant for prosselfs, $F(1, 80) = 0.51, n.s.$: for prosselfs, a combination of promise and threat yielded no more cooperation than either a promise or a threat in isolation ($M = 5.25, SD = 3.95$, vs. $M = 6.03, SD = 2.85$ and $M = 5.50, SD = 4.04$). Also, we should note that the interaction of the promise versus threat contrast and social value orientation was not significant, $F(1, 80) = 0.02, n.s.$ Thus, the present findings provide strong evidence in support of Hypothesis 2.

The analysis revealed two effects for the partner's initial choice (initial contribution as low, moderate, or high). The first effect was a main effect for initial choice, $F(2, 80) = 26.35, p < 0.001$, revealing that cooperation was greater following a high initial choice than following a moderate initial choice, which in turn was greater than cooperation following a low initial choice ($M = 8.69, SD = 2.74$, $M = 5.95, SD = 1.91$, and $M = 3.34, SD = 3.38$, respectively). The second effect was an interaction between social value orientation and initial choice, $F(2, 80) = 4.62, p < 0.05$. Additional analyses revealed that a low initial choice by the partner elicited significantly lower levels of cooperation among prosselfs than among prosocials ($M = 2.12, SD = 2.35$, vs. $M = 4.44, SD = 3.82$), $F(1, 80) = 7.30, p < 0.01$. Such differences between prosocials and prosselfs were not significant when the initial choice by the other was moderate or high (moderate: prosselfs, $M = 6.33, SD = 1.85$, vs. prosocials, $M = 5.63, SD = 1.96$; high: prosselfs, $M = 8.94, SD = 2.47$, vs. prosocials, $M = 8.50, SD = 3.01$; both F s $< 1, n.s.$). A complementary interpretation is that relative to prosocials, prosselfs respond more strongly to the initial choice by the other, by responding more non-cooperatively to another who initiated with low cooperation.

Finally, the analysis yielded three significant effects involving rounds. First, a significant main effect for rounds, $F(3, 78) = 3.91, p < 0.05$, indicated that during the interaction, cooperation increased over rounds. Second, a significant interaction between rounds and initial choice, $F(6, 158) = 3.82, p < 0.001$, indicated that the effect of the partner's initial choice became less pronounced as the interaction progressed. The third effect was the only effect that was relevant to our hypotheses.

Specifically, we found a significant interaction between rounds, message type, and social value orientation, $F(6, 158) = 2.58, p < 0.05$. Planned comparison analyses revealed that the combined versus single contrast interacted significantly with social value orientation and rounds, $F(3, 78) = 3.22, p < 0.05$, whereas the promise versus threat contrast did not, $F(3, 78) = 2.34, n.s.$ ²

Taken together, Study 2 provided some evidence in support for Hypothesis 1, the prediction that the combination of promises and threats would elicit greater levels of cooperation than either promises alone or threats alone. But more importantly, Study 2 provided strong evidence in support of Hypothesis 2. As predicted on the basis of the Goal-Prescribes-Rationality principle, for prosocials, the combination of threats and promises elicited considerably greater levels of cooperation than either promises or threats alone. In contrast, for proselves, there were no significant differences among these three conditions. Neither of these effects was influenced by the initial choice of the other.

GENERAL DISCUSSION

The major purpose of the present research was to compare the effectiveness of promises, threats, and combinations of promise and threat in promoting cooperation in a social dilemma task. We advanced two major hypotheses. First, we hypothesized that when communicated in combination, a promise and a threat would be more persuasive than when presented in isolation (Hypothesis 1). While Study 1 revealed no support, Study 2 provided some support, in that the combination of promise and threat condition tended to elicit greater cooperation than did the other two conditions (a marginal effect). Second, both studies provided good evidence in support of Hypothesis 2, the prediction that the combination of promise and threat (vs. either promise or threat in isolation) would be more persuasive for prosocials than for proselves. Taken together, the results of these two studies indicate that the combination of promise and threat is more effective than either message in isolation, but only for individuals who hold prosocial orientations.

The present findings are interesting from various perspectives. To begin with, we provided a new framework—based on the Goal-Prescribes-Rationality principle—which may help us understand the benefits of combining promises and threats. Our findings suggest that what decision people see as rational in social dilemmas also affects their responsiveness to promises and threats, messages, which convey information about others' (intended) decisions. Perspectives of rationality have previously been linked in particular to how people associate cooperative and uncooperative decisions with concepts like intelligence or competence (Joireman et al., 2003; Van Lange & Kuhlman, 1994; Van Lange & Liebrand, 1991; Utz, Ouwerkerk, & Van Lange, 2004). The present results suggest that people's perspective of rationality affects not only their impressions and expectations of others, but also how they respond to interpersonal communications from others—a finding with far-reaching consequences if one considers how frequently people use promises and threats in interpersonal situations in everyday life.

Second, it is noteworthy that past research has yielded inconsistent findings as to the benefits of promises, threats, or combinations of promises and threats. The present research may illuminate this

²Additional analyses revealed a complex pattern suggesting that the effect of promises and threats (vs. promises alone or threats alone) was less pronounced for prosocials in round 1 than in rounds 2 through 4; in contrast, for proselves we did not observe such a pattern. One might speculate that because other's initial choice (manipulated in Study 2) and message type exerted independent effects (i.e., they did not yield an interaction effect), it is possible that the strong effects of other's initial choice attenuated the effects of promises and threats for prosocials at the first round, but became more pronounced as the interaction developed simply because the effects of initial choice became less pronounced. Clearly, this line of reasoning is speculative. Indeed, because we advanced no *a priori* logic for predicting an interaction of rounds, message type, and social value orientation—and because we did not obtain this interaction effect in Study 1—the meaning and robustness of this effect awaits further research.

inconsistency, in particular with regard to the benefits of combinations of promise and threat. We examined individual differences in social value orientation, and these differences fully accounted for the effectiveness of combining promises and threats. That is, some people seem almost irresponsive to the combination of promises and threats (i.e., proselves), whereas others are persuaded very effectively by the combination of promises and threats (i.e., prosocials). This is important because prosocials are likely to adopt a conditionally cooperative strategy in social dilemmas (Kelley & Stahelski, 1970b; Kuhlman & Marshello, 1975). From this perspective, prosocials should be particularly sensitive to cues they perceive as indicative of the other's willingness to cooperate (cf. Pruitt & Kimmel, 1977). In line with the Goal-Prescribes-Rationality principle, the present study indicates that prosocials are particularly sensitive to communications, which might reflect a collective perspective on the situation—a perspective similar to the one they themselves are inclined to take. As such, a message that communicates cooperative intent with clarity—such that one should no longer be doubtful of any reason for non-cooperation, seems essential to prosocials. The notion that prosocials may hold heterogeneous views of others (Kelley & Stahelski, 1970a,b), and are less confident than proselves in their expectations about others' behaviors in social dilemmas (Van Lange, 1992) helps us understand why prosocials want to make sure that the other is indeed cooperative.

Third, we suggest that the present findings are relevant to various other literatures that relate to prosocial versus selfish motivation. Indeed, although we examined pre-existing individual differences in social value orientation, there is good evidence that under some circumstances one is very likely to think in terms of self-interest (or relative advantage) or collective interest (e.g., De Dreu & Carnevale, 2003; Van Lange, 1999). As such, characteristics of the situation or the relationship between the interacting parties may affect how one deals with promises and threats. For example, when individuals identify very strongly with a group and its members (e.g., one's closest group of friends), then prosocial orientation is most likely the dominant orientation; conversely, when individuals are forced to interact with members of another group under climates of distrust, then prosself orientation is more likely the dominant orientation (e.g., De Cremer & Van Vugt, 1999; Van Lange, De Cremer, Van Dijk, & Van Vugt, in press). **Future^{Q3}** research could examine whether situational or relational determinants of prosocial and prosself orientations affect the persuasiveness of combinations of promise and threat.

We should also note some limitations of the present research, along with outlining some further avenues for future research. To begin with, we should note that our manipulation of threats and promises, which in the present studies referred explicitly to the strategy that the sender intended to adopt during subsequent interactions, is one of many possible manipulations. As in most previous research, we examined threats and promises in a fairly explicit manner—by examining verbal statements that are explicit and leave little doubt about the intention that is being communicated. As a first step, it is interesting that these manipulations provide support for our reasoning based on the Goal-Prescribes-Rationality principle. At the same time, it is not clear whether threats and promises that are more nonverbal, less explicit, or not tied as explicitly to strategy would exert similar effects. We regard this to be an important topic for future research, especially because threats and promises are often conveyed in a less explicit manner in everyday life.

We should also note that, while the present findings are in line with the Goal-Prescribes-Rationality principle, we did not provide direct evidence in support of mechanisms that may follow from that principle. For example, we did not include measures that assessed individuals' tendencies to take a collective versus an individual perspective on rationality. As such, we cannot rule out alternative interpretations for the present findings, such as differences between the three messages in credibility, or in impressions of trustworthiness or concern for fairness. Differences in uncertainty reduction could also be an alternative explanation for the present findings: the combination of promise and threat may have been particularly effective because it provides a comprehensive description of the sender's

strategy, thereby reducing prosocials' uncertainty about their partner's intentions (see Kelley & Stahelski, 1970a,b). In isolation, promises and threats provide only a partial description, thereby maintaining uncertainty about the partner's intentions and perhaps even giving rise to suspicion.

A final limitation of the present research is the absence of a baseline condition, which would help to put these findings into perspective, in that it helps to assess the unique impact of threats alone or promises alone. At the same time, the key question is: What constitutes a valid baseline for these findings? There are several possibilities. First, a condition in which communication is not at all possible, in which a lack of communication is confounded with a lack of opportunity to communicate. Second, a condition in which there is no communication despite there being an opportunity to communicate, which can be experienced as suspicious. And finally, a condition in which there is communication about something quite irrelevant, which may also elicit ambivalence or even suspicion—why doesn't one exploit the opportunity to communicate about the task at hand? Indeed, creating a condition that unambiguously may serve as an objective baseline is 'easier said than done,' which is perhaps why most (classic) studies do not have 'the perfect' base-line condition (see Dawes, McTavish, & Shaklee, 1977; Orbell, Van de Kragt, & Dawes, 1988; Radlow & Weidner, 1966).

We wish to note that, although threats and promises constitute classic topics in social psychology, they have not received much attention in recent research. We hope, of course, that the new perspective provided in the present paper may lead to a renewed interest in this topic. Moreover, we suggest that other recent lines of research may be highly relevant to our understanding of threats and promises. For example, power and status constitute important topics, because individuals high in power or status might be particularly likely to use certain messages to motivate others to cooperate or to comply, whereas individuals low in power or status might be particularly sensitive to such communications (e.g., Keltner, Gruenfeld, & Anderson, 2003; Van Kleef, De Dreu, & Manstead, 2004). Also, there may be intriguing differences between individuals and groups in how they interpret and behaviorally respond to promises and threats, as intergroup interactions have been shown to be more competitive and less trusting (cf. Insko & Schopler, 1998; Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). Last but not least, threats and promises may often be made in an implicit manner, perhaps sometimes even in an unconscious manner (e.g., Bargh, 1994; Dijksterhuis & Bargh, 2001). For example, without being consciously aware of it, people may sometimes engage in nonverbal behaviors that signal a threat, a promise, or both, which in turn may shape interactions in a positive or a negative manner. We regard such issues as promising integrative topics of future research.

CONCLUDING REMARKS

Promises and threats are used widely in everyday life. This fact alone may inspire one to believe in the functional value of both tactics to motivate another person to cooperate. The present findings help us to think in terms of 'contingencies,' such that the functional value of these tactics depend on (a) the ways in which they are communicated to another person—in combination or in isolation, and (b) the primary interaction goals of the partner. The fact that the sizeable group of people with prosocial orientation can be motivated by the combination of threats and promises is encouraging. But we also think that the present findings need not be restricted to prosocial orientation as a stable disposition, as prosociality can also be activated as a 'state' in people who are normally not prosocially oriented, for instance by group identification, by attachment, or perhaps by subtle influences such as priming. Even though one should never disregard proself orientation, when in doubt, it seems advisable to use both promises and threats if one really intends to pursue collective interests.

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