

Mixed-Motive Conflict in Social Dilemmas: Mood as Input to Competitive and Cooperative Goals

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Four studies using diverse manipulations demonstrated that moods interacted with competitive and cooperative goals to influence people's behaviors in social dilemmas. This was true whether moods were manipulated by films (Studies 1 and 2) or music (Study 4) or were assessed dispositionally (Study 3); whether specific or global goals were manipulated (Studies 1, 3, and 4) or were assessed dispositionally (Study 2); and whether participants' actions were tested in a resource dilemma (Studies 1, 2, and 4) or prisoner's dilemma game (Study 3). In 3 studies, bad moods led to more competition (less cooperation) with competitive goals in mind but to more cooperation (less competition) with cooperative goals in mind. A 4th study reversed this pattern with goals framed in terms of enjoyment.

Mixed-motive conflict refers to situations in which people are faced with a tension between motives to compete and cooperate (Komorita & Parks, 1995; Messick & Brewer, 1983; Schelling, 1960). Psychologists and other scientists, spurred in part by Hardin's (1968) article on the tragedy of the commons, have emphasized one type of mixed-motive conflict, the *social dilemma* (Dawes, 1980; Komorita & Parks, 1996; Schroeder, 1995). An example of a social dilemma is fishing the oceans. It may be profitable

for fishers to maximize selfish interests by harvesting all they can. However, if other fishers also maximally harvest from the same common and depletable pool, the dilemma is that chronic overharvesting eventually results in the resource drying up, leading all fishers to be collectively worse off. Mixed-motive conflicts are ubiquitous, with broad theoretical and practical significance. As testament to this, social dilemmas have been used to explain topics such as evolution (e.g., Boyd, 1988), governmental funding (e.g., Kotlikoff, 1987), international (e.g., Lichbach, 1990) and close relationships (e.g., Van Lange, Agnew, Harinck, & Steemers, 1997), marketing trends (e.g., Pruyn & Riezebos, 2001), decision making and performance (e.g., Shepperd, 1993), and organizational behavior (e.g., Rutte, 1990).

One primary objective has been to identify ways of producing greater cooperation. All else being equal, typical cooperation rates are between 30% and 40% (Komorita & Parks, 1996; Schroeder, 1995). If one believes that maximizing collective welfare is important, then these findings are not particularly encouraging. Methods of inducing more cooperation have generally been distinguished as belonging to one of two categories: structural and individual (Komorita & Parks, 1995; Messick & Brewer,

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1983). However, whatever the category, relatively little attention has been given to the potentially critical role of another variable—people's *moods*—in influencing choice behaviors within social dilemmas (see Parks & Sanna, 1999). This is true despite accumulating evidence that moods influence a variety of judgments and responses (e.g., Schwarz & Clore, 1996) in other contexts. Accordingly, it is likely that social dilemma behaviors do not take place in an affective vacuum either (see also Hertel, 1999). Because moods are such a big part of people's lives, it makes sense that they can also have important implications within social dilemmas. As a further crucial step toward filling this gap, we report the results of four studies in which we tested the role of moods, in interaction with competitive and cooperative goals, in social dilemmas.

Mood as Input to Goal Processes

Goals are well known to influence behaviors. Researchers and practitioners have demonstrated that both individual and group goals are clearly related to people's responses across a variety of situations. For example, in the area of goal setting, research has established that specific, challenging goals lead to higher levels of task performance than do vague goals, easy goals, or no goals (Chidester & Grigsby, 1984; Hunter & Schmidt, 1983; Locke & Latham, 1990; Locke, Shaw, Saari, & Latham, 1981; Tubbs, 1986; Wood, Mento, & Locke, 1987). Interest also has focused on specifying the theoretical limits of goal setting and on the variables that may moderate the beneficial influences of goals (e.g., Austin & Bobko, 1984; Locke et al., 1981; Naylor & Ilgen, 1984). The emphasis of this research has been on the role of cognitive processes and on intentional behavior. However, although research and practical experience document that goals can have a tremendous effect on people's actions, behaviors, and performances, surprisingly little emphasis has been placed on another potentially important variable in this process, namely, affect (see, e.g., Locke & Latham, 1990, for a review).

One notable exception to the lack of emphasis on the role of affect and on relations between moods and goals was suggested by Carver and Scheier (1998; see also Carver & Scheier, 1990). According to Carver and Scheier, people

regulate their actions to minimize discrepancies between actual acts and desired or intended acts. Moods, in this view, are a result of a meta-monitoring process that senses whether there is a sufficient rate of change toward discrepancy reduction. When people believe they are making satisfactory progress toward goals, they have positive feelings or moods, which can be experienced variously as enthusiasm, hope, excitement, joy, elation, or happiness (cf. Stotland, 1969). However, when people believe that they are not making satisfactory progress toward goals, they have negative feelings or moods, such as anxiety, dysphoria, despair, or sadness. Good moods thus indicate satisfactory progress toward goals or that goals have been met, whereas bad moods indicate unsatisfactory progress toward goals or that goals have not yet been met (Carver & Scheier, 1998). In short, affect or moods can be a result or consequence of people's assessments of goal progress or attainment.

But there is a converse, equally intriguing, and less studied alternative. Moods can additionally serve as *input* or antecedents to goal effects (Martin, Ward, Achee, & Wyer, 1993; see also Martin, Abend, Sedikides, & Green, 1997), and it is this view that is the focus of our present research on social dilemmas. That is, people may construe preexisting bad moods as meaning they have not yet obtained their goals, whereas people may construe preexisting good moods as meaning they have obtained their goals. This can consequently influence how long people persist or continue specific behaviors versus desist or discontinue those behaviors. In particular, Martin et al. (1993) found that when participants considered performance adequacy (a *performance goal*, e.g., "Have I done enough?"), bad moods led them to construe performances as less adequate ("I haven't done enough"), resulting in *greater* persistence when in bad than good moods. In contrast, when participants considered task enjoyment (an *enjoyment goal*, e.g., "Am I enjoying this task?"), bad moods led them to construe tasks as less enjoyable ("I am not enjoying this task"), resulting in *lesser* persistence when in bad than good moods. In short, the same moods led to very different implications depending on the specific goals that people had in mind.

The Present Research: Moods in Social Dilemmas

Most research on motivational effects of moods has centered on the role of affect as a determinant of the type of cognitive processing in which people engage (see, e.g., Sinclair & Mark, 1992, for a review). For example, although effects have often been inferred indirectly from the nature of the judgments, research suggests that being in good moods results in shallow or peripheral processing (Bless, Bohner, Schwarz, & Strack, 1990; Fiedler, 1988), reliance on heuristics (Mackie & Worth, 1989; Worth & Mackie, 1987), less accuracy (Sinclair & Mark, 1995), broad categorization (Isen & Daubman, 1984; Isen, Johnson, Mertz, & Robinson, 1985), cognitive flexibility (Murray, Sujan, Hirt, & Sujan, 1990), and reliance on stereotypes (Bodenhausen, 1993). In contrast, research suggests that being in bad moods results in deep processing, reliance on systematic assessment, narrow categorization, and less reliance on stereotypes. However, the mood-as-input model demonstrates that moods may not have such strong default links to processing strategies. As described previously, it is not the mood per se that has particular implications (e.g., increased or decreased processing capacity); rather, it is people's interpretations of the meaning of those moods (Martin et al., 1993, 1997; see also Sanna, Turley, & Mark, 1996).

One view of the existing social dilemma literature is that bad moods decrease cooperation and good moods increase cooperation (e.g., Carnevale & Isen, 1986; Knapp & Clark, 1991). The general idea here is that happy persons are cooperative and sad persons are competitive. This seems to make intuitive sense to many people, and perhaps in part because of this, it was also used as a point of departure for research in this area. However, although there is some support for this position, a more recent and closer inspection actually reveals somewhat conflicting findings (for a review, see Hertel, 1999). We propose that mood-as-input ideas not only may provide a resolution and possible integration of prior results but also suggest some novel and perhaps at first seemingly counterintuitive predictions about the influences of moods in social dilemmas. Consider, for example, a person with a goal such as "Am I being *competitive* enough?" A person in a bad mood

would answer "no" and a person in a good mood would answer "yes," resulting in more *competitive* behaviors in bad than in good moods. Alternatively, consider a person with a goal such as "Am I being *cooperative* enough?" A person in a bad mood would again answer "no" and a person in a good mood would answer "yes." However, in contrast to the prior example, this person would engage in more *cooperative* behaviors in bad than in good moods. In short, bad moods may lead to more competition (or less cooperation) with competitive goals but to more cooperation (or less competition) with cooperative goals, thus producing very different social dilemma behaviors.

As an example, Knapp and Clark (1991) directly tested the effects of moods in social dilemmas, using a resource dilemma like the description with fishers given in the opening paragraph of this article. In a laboratory simulation, participants "harvested fish" from a common and depletable resource pool that was only partially replenished at fixed intervals (e.g., Komorita & Parks, 1996), with the dilemma being that chronic overharvesting would lead to a drying up of the pool. In addition, Knapp and Clark induced happy, sad, and angry moods by having participants read stories before playing the resource dilemma game. A neutral (control) mood condition was also included. Across two studies, sad and angry participants took more fish (i.e., they competed more) than did participants in the neutral and positive mood conditions—the two negative mood conditions, sad and angry, did not differ from each other. Interestingly, the goal participants were given was to "maximize your *own* profits" (italics added; Knapp & Clark, 1991, p. 680). This most likely would have been viewed by participants as a competitive goal and, as predicted by our present hypotheses, should have led to more competition when in bad than good moods, as was in fact found. The goal of cooperation was not provided by Knapp and Clark, so the full hypotheses of our present research cannot be assessed by those studies.

Overview of Four Studies

We conducted four studies using diverse manipulations and methodologies to triangulate on our hypotheses. In Study 1, participants took part in a resource dilemma. We manipulated

moods by using a series of film clips and manipulated goals by instructing participants to keep cooperative or competitive goals in mind while interacting. In Study 2, we again used films as a mood manipulation and a resource dilemma task. However, instead of manipulating participants' goals through instructions, we tested whether moods interact with dispositional goals, in the form of people's social value orientation. In Study 3, further varying our methods, instead of manipulating moods, we tested whether people's dispositional moods in the form of depression level interact with goals. To provide additional generality and potential applicability, participants worked on another type of social dilemma in Study 3, the prisoner's dilemma game (PDG). Finally, we conducted Study 4 to provide further evidence for the mood-as-input model by reversing the predicted pattern of interaction via the framing of cooperative and competitive goals in terms of enjoyment, and we manipulated moods using music.

Study 1: Manipulated Moods and Manipulated Goals

Our first study provided an initial test of whether moods and goals influence social dilemma behaviors, using a resource dilemma. Moods were manipulated by films, and goals were manipulated by instructions. We predicted that participants in bad moods given competitive goals would be more competitive (i.e., would harvest more fish) than those in good moods, whereas participants in bad moods given cooperative goals would be more cooperative (i.e., would harvest less fish) than those in good moods. That is, we believed that moods and goals would interact to influence behaviors. The design was a 3 (mood: negative, positive, or control) \times 3 (goal: competitive, cooperative, or control) between-subjects factorial.

Method

Participants

Participants were 110 students who received extra credit in their psychology course.

Procedure

Upon arrival, participants were told they would be performing a series of unrelated tasks that were being pilot tested for future research (Sanna et al., 1996).

Resource dilemma. We used a resource dilemma (e.g., Komorita & Parks, 1996), analogous to the fishing example described in our opening paragraph (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Knapp & Clark, 1991), executed on computer. Participants played one of two fishers who caught fish from a lake stocked at 100. They were told the number of fish could never go below 70, or else all profits would be confiscated. Several seasons (trials) were played, in each of which participants could catch up to 15 fish. They decided after each season how many fish to keep for personal profit or how many to return to the lake to help restock it. Participants were given a table illustrating the consequences of keeping fish versus replenishing the lake according to the equation $5n - 30$ (e.g., keeping 7 and returning 8 resulted in an increase of 10 fish in the lake; Bargh et al., 2001).

Within each season, a 15-fish catch was indicated in the middle of the screen, with a boat icon on the left and a fish icon on the right. Participants entered numbers into boxes beside the icons to indicate how many fish they wanted to keep (boat) and how many they wanted to return (fish). The phrases *keep fish* and *return fish* also appeared. The computer emitted a tone when responses were recorded. Another tone was emitted, supposedly indicating that the "other participant" had responded; unknown to actual participants, this tone was rigged and there was no other participant. After the tones sounded, participants read a message that was always the same: "There continue to be more than 70 fish in the lake." The number of fish taken (profits) was indicated. Five seasons were played; participants were told they would play several seasons, but they were not told at the outset how many.

Goal manipulations. Goal manipulations were modified from prior research (see Martin et al., 1993; Sanna et al., 1996). In the competitive condition, participants read, "As you play the game, ask yourself 'Have I taken as many fish as I can?' If the answer is 'yes,' then stop. If the answer is 'no,' then continue taking fish."

In the cooperative condition, participants read, "As you play the game, ask yourself 'Have I returned as many fish as I can?' If the answer is 'yes,' then stop. If the answer is 'no,' then continue returning fish." In the control condition, participants read instructions adapted from Knapp and Clark (1991): "As you play the game, try to maximize your own profits."

As a manipulation check, participants in the competitive and cooperative goal cells indicated their condition by reading, "My goal was to ask myself . . ." after which they checked one of two boxes labeled "have I taken as many fish as I can?" or "have I returned as many fish as I can?"

Mood manipulations. Moods were manipulated by a series of film clips (see Martin et al., 1993; Sanna, Turley-Ames, & Meier, 1999). Consistent with the cover story that they would complete multiple unrelated tasks, participants watched and rated movies. In the positive mood condition, participants watched a pair of humorous film clips from *Splash* and *Stripes*; in the negative mood condition, participants watched a pair of sad film clips from *Gallipoli* and *Sophie's Choice*. None of these film clips contained any obvious content association with the resource dilemma task. Preceding these, participants watched a brief car-chase scene from the movie *Bullitt*; though engaging, this clip is neutral in valence and was inserted merely to lessen chances that participants would guess that the emotional tone of the clips was designed to influence moods. In total, the series of film clips lasted about 20 min.

After each film clip, participants responded to the Pilot Movie Ratings survey, which asked for routine ratings of the films (e.g., whether they had seen the movie before; Sanna et al., 1996). As a manipulation check, after all film clips

were viewed, participants also indicated the extent to which a series of positive (*happy, satisfied, pleased, delighted, and good*) and negative (*gloomy, depressed, anxious, nervous, and bad*) adjectives reflected their moods (Sanna, 1999), anchored by 1 (*not at all*) and 9 (*very much*).

In the control mood condition, participants did not watch any films; they were told there was a video equipment problem so films would be skipped but that they still would complete the rest of the study.

Results and Discussion

Data were analyzed using 3 (mood) \times 3 (goal) analyses of variance (ANOVAs), with focused contrasts (Rosenthal & Rosnow, 1985) to compare means. (There were no participant gender effects in any of the studies reported in this article, so it is not discussed further.)

Manipulation Checks

The negative mood adjectives were reverse-scored and averaged with the positive ones (Cronbach's $\alpha = .88$). There was only a main effect of mood, $F(2, 101) = 12.45, p < .01$ (negative, $M = 3.4$; positive, $M = 7.1$; control, $M = 5.6$). In addition, all participants checked the box indicating their correct goal condition. Thus, our manipulations were effective.

Number of Fish Returned (Cooperation)

The primary dependent measure was the mean number of fish returned, indexing cooperation. There was only a predicted Mood \times Goal interaction, $F(4, 101) = 11.31, p < .01$ (see Table 1). With cooperative goals in mind, focused contrasts indicated that participants in

Table 1
Mean Number of Fish Returned (Cooperation) by Manipulated Goal and Manipulated Mood for Study 1

Manipulated mood	Manipulated goal								
	Cooperative			Competitive			Control		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Negative	34.2	9.7	12	16.0	9.5	13	17.7	9.2	12
Positive	17.7	9.2	13	35.7	10.1	12	25.5	9.6	13
Control	26.0	9.5	11	24.2	9.7	13	23.3	10.2	11

negative moods were *more* cooperative (less competitive) than those in either positive or control moods, $t_s(101) > 2.08$, $ps < .05$; control and positive mood participants also differed, $t(101) = 2.11$, $p < .05$. Conversely, competitive goal participants in negative moods were *less* cooperative (more competitive) than those in either positive or control moods, $t_s(101) > 2.17$, $ps < .05$; control and positive mood participants also differed, $t(101) = 2.98$, $p < .05$. Control goal participants exhibited a pattern similar to those with competitive goals, with less cooperation in negative than positive moods, $t(101) = 2.02$, $p < .05$.

In short, as we hypothesized, moods did not have direct, straightforward effects on social dilemma behaviors but instead interacted with whether people had in mind cooperative or competitive goals. The findings are consistent with the idea that people in bad moods take those moods to mean they have not yet competed enough and good moods to mean they have competed enough with *competitive* goals in mind. People in bad moods, in contrast, take those moods to mean they have not yet cooperated enough and good moods to mean they have cooperated enough with *cooperative* goals in mind.

Study 2: Manipulated Moods and Dispositional Goals

A possible limitation of Study 1 was a reliance on manipulated goals. That is, participants were instructed explicitly to be competitive or cooperative. Study 2 addressed this issue, taking advantage of the fact that some people are more dispositionally competitive or cooperative, a characteristic known as *social value* orientation (Van Lange, Otten, de Bruin, & Joireman, 1997). We predicted that participants in bad moods who are dispositional competitors will be more competitive (i.e., harvest more fish) than those in good moods. In contrast, participants in bad moods who are dispositional cooperators will be more cooperative (i.e., harvest less fish) than those in good moods. That is, we believed competitors in bad moods would take those moods to mean they had not yet competed enough and good moods to mean they had competed enough, whereas cooperators in bad moods would take those moods to mean they had not yet cooperated enough and good

moods to mean they had cooperated enough. The design of Study 2 was a 3 (mood: negative, positive, or control) \times 2 (social value: competitor or cooperator) between-subjects factorial.

Method

Participants

Participants were 83 students who received extra credit in their psychology course.

Procedure

The procedures followed those of Study 1, except that instead of giving goal instructions, we prescreened for social value orientation. Dispositional competitors should naturally have goals akin to “Have I competed enough?” or “Have I taken enough fish?” Dispositional cooperators should naturally have goals akin to “Have I cooperated enough?” or “Have I returned enough fish?” We assessed social value orientation using the decomposed game, devised by Van Lange and Kuhlman (1994). It is a highly reliable and valid measure (e.g., Parks & Rumble, 2001; Van Lange & Kuhlman, 1994). Points are allocated to self versus other. There are three options and nine iterations. Competitors choose a “maximizing relative gain” option at least six of nine times. Cooperators choose a “maximizing joint gain” option at least six of nine times. In our sample, 42 cooperators and 41 competitors were prescreened and selected from an initial pool of approximately 250 on the first day of their introductory psychology class.

Results and Discussion

Data were analyzed using 3 (mood) \times 2 (social value) ANOVAs, with focused contrasts to compare means.

Manipulation Check

A mood measure identical to that of Study 1 (Cronbach’s $\alpha = .82$) revealed that our manipulation was successful: main effect, $F(2, 77) = 14.22$, $p < .01$ (negative, $M = 3.2$; positive, $M = 8.0$; control, $M = 5.1$).

Number of Fish Returned (Cooperation)

There was an unsurprising main effect of social value, $F(1, 77) = 5.34, p < .05$ (cooperator, $M = 31.0$; competitor, $M = 25.9$). More important, this effect was qualified by a predicted Mood \times Social Value interaction, $F(2, 77) = 22.40, p < .01$ (see Table 2). For cooperators, focused contrasts indicated that negative moods produced *more* cooperation (less competition) than either positive or control moods, $ts(77) > 2.53, ps < .05$; control and positive moods also differed, $t(77) = 2.15, p < .05$. Conversely, competitors in negative moods were *less* cooperative (more competitive) than those in either positive or control moods, $ts(77) > 2.04, ps < .05$; control and positive moods differed, $t(77) = 2.98, p < .05$.

In short, Study 2 provides further support for our ideas by assessing goals as they “naturally” occur, overcoming any potential limitations on varying goals via instructions. As we predicted, dispositional goals in the form of social value orientation interacted with moods to influence degree of competition and cooperation (and, as in Study 1, indicated that moods did not have direct, straightforward effects on behaviors). These findings reveal a previously untested pattern of interaction between moods and social value orientation. The results similarly add to what is known about the mood-as-input model, because they reveal that moods can interact with dispositional goals.

Study 3: Dispositional Moods and Manipulated Goals

A possible limitation of both Studies 1 and 2 was a reliance on manipulated moods. That is, participants’ moods were manipulated by

watching films in a laboratory. In Study 3 we addressed this issue, taking advantage of the fact that some people have dispositionally more negative moods (i.e., they are depressed) than other (nondepressed) people. We predicted that depressed participants with competitive goals in mind would be more competitive than those who are nondepressed. In contrast, we believed depressed participants with cooperative goals would be more cooperative than those who are nondepressed. That is, people in dispositionally bad moods would take those moods to mean they had not yet competed enough with *competitive* goals in mind. But people in dispositionally bad moods would take those moods to mean they had not yet cooperated enough with *cooperative* goals in mind. The design of Study 3 was a 2 (depression: depressed or nondepressed) \times 3 (goal: cooperative, competitive, or control) between-subjects factorial. Two other changes added further generality: (a) We manipulated goals more globally and (b) we used another type of social dilemma, the PDG.

Method

Participants

Participants were 75 students who received extra credit in their psychology course.

Procedure

The procedures were similar to those of the first two studies, with a few exceptions.

Depression level. We measured depression using the Beck Depression Inventory (BDI; Beck, 1967), a highly reliable and valid measure of depressive affect. As in prior research, BDI scores below 4 were used to select nondepressed ($n = 38$) persons, and scores above 10 were used to select depressed ($n = 37$) persons. Participants were prescreened on the first day of classes in introductory psychology, from a larger pool of about 320. They were called to participate on the basis of their scores.

Goal manipulations. The goal manipulations were similar to those of Study 1, except that they referred to the PDG. In addition, participants were asked to consider more globally, “Am I being competitive enough?” (competitive condition) and “Am I being cooperative enough?” (cooperative condition). The control

Table 2
Mean Number of Fish Returned (Cooperation) by Social Value and Manipulated Mood for Study 2

Manipulated mood	Social value					
	Cooperator			Competitor		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Negative	39.7	9.5	14	15.7	10.1	14
Positive	22.5	9.6	13	38.7	10.0	14
Control	30.5	9.9	15	23.4	9.5	13

goal condition was identical to that of Study 1. A goal manipulation check was similar to that in Study 1, except with two boxes labeled “Am I being competitive enough?” or “Am I being cooperative enough?”

PDG. We used a two-person PDG (e.g., Parks, Sanna, & Berel, 2001; see Table 3). *A* is the cooperative choice because joint gain is maximized by both people choosing *A*, whereas *B* is the competitive (noncooperative) choice because personal, selfish gain is maximized by choosing *B*. Note, however, that if both people choose competitively (*B*), each individual payoff is worse than if each had chosen *A*—and herein lies the dilemma. A *K* value of .50 indicates typical cooperation rates of about 50%, all else equal, and is calculated as (AA payoff – BB payoff) / (BA payoff – AB payoff) (Rapoport, 1967). Because of our interest in cooperation and competition, a *K* = .50 matrix was used.

Procedures followed prior research (Parks et al., 2001). Participants accumulated points by selecting *A* or *B*. Participants were told they were playing against a person in another room but that they could not be told who that person was until the session ended. The payoff matrix was provided. Participants learned that the combination of choices between them and the other person would determine payoffs. They were told they would be playing several trials (in fact there were 10, but participants were not told the exact number) and that they would be given final results of their and the other person’s choices after the session. For every 10 points earned, participants received one ticket for a \$100 lottery that was conducted after the entire study was complete.

Table 3
Two-Person Prisoner’s Dilemma Game Payoff Matrix for Study 3

You	Other	
	A	B
A	5/5	3/6
B	6/3	4/4

Note. Cell entries before the slash are payoffs for “you,” whereas those after the slash are payoffs for “other.” *K* = .50.

Results and Discussion

Data were analyzed using 3 (goal) × 2 (depression) ANOVAs, with focused contrasts to compare means.

Manipulation Check

Participants in the cooperative and competitive goal cells were asked to check one of two boxes indicating their condition, and all did so correctly.

Choice Behavior Rates (Cooperation)

The dependent measure was mean cooperation rates, calculated by dividing the number of cooperative choices by 10 (i.e., the number of trials; Parks et al., 2001). There was only a predicted Goal × Depression interaction, $F(2, 69) = 6.48, p < .05$ (see Table 4). Focus contrasts indicated that depressed participants with cooperative goals were more cooperative (less competitive) than nondepressed ones, $t(69) = 2.21, p < .05$. Conversely, depressed participants with competitive goals were less cooperative (more competitive) than nondepressed ones, $t(69) = 2.88, p < .05$. Control goal participants exhibited a (marginally significant) pattern similar to competitive goal participants, $t(69) = 1.88, p = .08$.

In short, dispositional moods in the form of depression interacted with goals to influence the degree of competition and cooperation and, as in our first two studies, indicated that moods did not have direct, straightforward effects on behaviors. These findings provide further support for our ideas by assessing moods as they “naturally” occur, overcoming any potential limitations on varying moods via films. The results similarly add to what is known about the mood-as-input model, because they reveal that dispositional moods can interact with manipulated goals in a manner analogous to manipulated moods. Finally, the findings of Study 3 provide additional generality beyond our first two studies by demonstrating that the results are applicable to more global competitive and cooperative goals, to behaviors in the PDG, and to contexts in which monetary incentives are at stake.

Table 4
Mean Choice Behavior Rates (Cooperation) by Manipulated Goal and Depression Level for Study 3

Depression level	Manipulated goal								
	Cooperative			Competitive			Control		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Depressed	0.57	0.12	13	0.40	0.10	12	0.45	0.11	12
Nondepressed	0.48	0.10	13	0.52	0.09	13	0.53	0.10	12

Study 4: Manipulated Moods and Manipulated (Enjoyment) Goals

In the final study, we tested further the mechanisms underlying results. In the prior studies, bad moods always indicated that one should keep going with competitive or cooperative responses, whereas good moods always indicated that one should stop those same responses. This was true whether goals were manipulated (Studies 1 and 3) or were assessed dispositionally (Study 2). These findings are important because bad moods may *normally* indicate that one should continue responding in social dilemmas (because they indicate that goals have not been met). However, if mood-as-input ideas are correct, then it should be possible to reverse the implications of “stop rules” by framing goals in terms of enjoyment (e.g., Martin et al., 1997). In this case, when goals are framed in terms of enjoyment, participants in good moods with cooperative goals in mind should be more cooperative, whereas those in good moods with competitive goals in mind should be more competitive. This reverses the predicted pattern of interaction obtained in our first three studies. The design was a 3 (mood: negative, positive, or control) \times 3 (goal: competitive, cooperative, or control) between-subjects factorial.

Method

Participants

Participants were 94 students who received extra credit in their psychology course.

Procedure

We used the resource dilemma game, as in Studies 1 and 2. The procedures were similar to

those of the first three studies, with a few exceptions.

Goal manipulations. The goal manipulations framed goals in terms of enjoyment (Martin et al., 1993; Sanna et al., 1996), rather than as in our first three studies. In the competitive condition, participants read the following: “As you play the game, ask yourself ‘Am I enjoying taking as many fish as I can?’ If the answer is ‘yes,’ then continue taking fish. If the answer is ‘no,’ then stop.” In the cooperative condition, participants read the following: “As you play the game, ask yourself ‘Am I enjoying returning as many fish as I can?’ If the answer is ‘yes,’ then continue returning fish. If the answer is ‘no,’ then stop.” A control goal condition was identical to that in Studies 1 and 3.

Mood manipulations. One other change added further generality. Moods were induced using music (e.g., Dykman, 1996; Sanna et al., 1999). In the positive mood condition, participants listened to upbeat selections from Mozart’s *Eine Kleine Nachtmusik*; in the negative mood condition, participants listened to a moribund selection, Prokofiev’s “Russia Under the Mongolian Yoke,” played at half speed. Participants listened to the songs on cassette tapes over private headsets, with each tape lasting about 10 min. Afterward, participants responded to the Pilot Music Ratings survey, similar to that used for films in Studies 1 and 3. In a control mood condition, participants did not listen to music.

Results and Discussion

Data were analyzed using 3 (mood) \times 3 (goal) ANOVAs, with focused contrasts to compare means.

Manipulation Checks

A mood measure identical to that of Studies 1 and 2 (Cronbach's $\alpha = .86$) revealed that our manipulation was successful: main effect, $F(2, 85) = 11.77, p < .01$ (negative, $M = 3.4$; positive, $M = 8.3$; control, $M = 5.3$). Also, as in Studies 1 and 3, participants in the cooperative and competitive goal cells were asked to check one of two boxes indicating their condition; all did so correctly.

Number of Fish Returned (Cooperation)

There was only a predicted Mood \times Goal interaction, $F(4, 85) = 9.85, p < .01$, on the mean number of fish returned (see Table 5). With cooperative goals, focused contrasts indicated that participants in positive moods were more cooperative (less competitive) than those in either negative or control moods, $t_s(85) > 2.12, p_s < .05$; control and negative moods also differed, $t(77) = 2.29, p < .05$. Conversely, competitive goal participants in positive moods were less cooperative (more competitive) than those in negative or control moods, $t_s(77) > 2.24, p_s < .05$; control and negative mood participants also differed marginally, $t(77) = 1.86, p = .09$. Control goal participants were less cooperative in negative than in positive moods, $t(77) = 2.17, p < .05$, replicating results of Study 1.

In short, enjoyment framing *reversed* the pattern of mood and goal interactions observed in our first three studies. Whereas bad moods led to more competition or cooperation in the first three studies, good moods led to more competition or cooperation in Study 4, in which those goals were framed in terms of enjoyment. This finding provides more evidence consistent with

mood-as-input ideas as an underlying mechanism, and with added generality with a different mood manipulation.

General Discussion

Four studies using diverse manipulations and methodologies demonstrated that moods did not have direct, straightforward effects on social dilemma behaviors but instead interacted with whether people had in mind competitive or cooperative goals. In other words, bad and good moods did not simply lead to greater competition and cooperation, respectively, but instead conformed to a more complex but nonetheless readily predictable pattern. Providing generality and applicability to our proposals, this finding was true whether moods were manipulated directly by films (Studies 1 and 2) or music (Study 4) or were assessed dispositionally (Study 3); whether specific or global goals were manipulated directly through instructions (Studies 1 and 3), were assessed dispositionally (Study 2), or were manipulated and framed in terms of enjoyment (Study 4); whether participants' actions were assessed within the context of a resource dilemma (Studies 1, 2, and 4) or PDG (Study 3); and whether monetary incentives were (Study 3) or were not (Studies 1, 2, and 4) at stake. Taken together, the results of this research thus can greatly inform people's choice behaviors when faced with mixed-motive conflict in social dilemmas.

Interactions Between Cognitions and Affect in Social Dilemmas

Cognitive goals, in interaction with affect, influenced social dilemma responses. Partici-

Table 5
Mean Number of Fish Returned (Cooperation) by Manipulated Enjoyment Goal and Manipulated Mood for Study 4

Manipulated mood	Manipulated enjoyment goal								
	Cooperative			Competitive			Control		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Negative	18.1	9.9	10	34.5	9.0	12	18.3	9.8	11
Positive	36.8	9.5	11	17.3	9.4	10	27.4	9.3	10
Control	27.2	9.2	10	25.3	10.0	10	24.4	10.1	10

pants who considered competitive goals of "Have I taken as many fish as I can?" (Study 1) or "Am I being competitive enough?" (Study 3) as well as dispositional competitors (Study 2) used negative affect as a cue that they had not yet reached their goals (i.e., had not been competitive enough); consequently, they were more competitive. For participants with these same competitive goals, positive moods led to less competition (more cooperation). If taken just this far, our results might seem simply to be an instance of bad and good moods leading to more competition and cooperation, respectively (e.g., Carnevale & Isen, 1986; Knapp & Clark, 1991). However, this clearly was not the case. Participants who considered *cooperative* goals of "Have I returned as many fish as I can?" (Study 1) or "Am I being cooperative enough?" (Study 3) as well as dispositional cooperators (Study 2) also used negative affect as a cue that they had not reached their goals. But here they inferred that they had not been cooperative enough; consequently, they were more cooperative. Positive moods led to less cooperation with these same goals. Thus, bad and good moods did not simply lead straightforwardly to more competition and cooperation.

More support consistent with mood-as-input interpretations of mood and goal interactions (Martin et al., 1993, 1997; Sanna et al., 1996) comes from Study 4, in which goals were framed in terms of enjoyment and exactly the opposite pattern emerged. In contrast to our first three studies, participants considered instead the competitive goal of "Am I *enjoying* taking as many fish as I can?" Here, they used their positive moods as a cue that they were enjoying the task, engaging in more competitive responding when in good moods. With this same competitive goal, bad moods led to less competitive responding than good moods. These findings are contrary to notions that good and bad moods lead routinely to more cooperation and competition, respectively. Likewise, participants considering the cooperative goal "Am I enjoying returning as many fish as I can?" also used their good moods as a cue to enjoyment, but here this led to more cooperation. With this same goal, bad moods led to less cooperation. In short, taken together, the full pattern of results across all four studies indicates that the same mood can lead to either increased or decreased competi-

tion or cooperation, depending on the goals people have in mind.

General goal-setting research has emphasized cognitive processes, such as the way specific, challenging goals lead to high task performance (e.g., Chidester & Grigsby, 1984; Locke & Latham, 1990; Wood et al., 1987). Researchers also have specified limits of goal setting and variables that moderate goal effects (e.g., Austin & Bobko, 1984; Naylor & Ilgen, 1984). But little emphasis had been placed on another class of variable, that of affect (see Carver & Scheier, 1998, for an exception). Social dilemma researchers similarly have virtually ignored the role of affect (for reviews of group research, see Parks & Sanna, 1999; Sanna & Parks, 1997; see also Hertel, 1999). However, our ideas may also allow some prior findings to be reconciled and integrated. For example, Knapp and Clark (1991) found that bad moods increased resource dilemma competitiveness when goals were to "maximize your *own* profits" (italics added; Knapp & Clark, 1991, p. 680). This likely would be viewed as a competitive goal by participants and, as predicted by our present hypotheses, should lead to more competition in bad moods, as was in fact found. Along with research indicating that affect is a consequence of goal processes (e.g., Carver & Scheier, 1998), our research thus adds to the growing evidence that affect can also serve as input to goal processes (e.g., Martin et al., 1993; Sanna, Meier, & Wegner, 2001), and future research could explore the causal sequence of these relationships in social dilemmas in more detail.

Relationships to Other Mood Models

We interpreted results to be consistent with the mood-as-input model (Martin et al., 1993, 1997). This model can be usefully compared with alternative explanations of mood effects, which in general would have difficulty accounting for our findings. For example, proponents of affective priming suggest that affect primes mood-congruent information (e.g., Bower, 1991; Forgas, 1995), a process by which moods activate associated concepts. Because, as these theorists argue, bad moods are likely to have an association with competition, and good moods with cooperation, we might have expected more competition in bad moods and more cooperation in good moods (e.g., Carnevale & Isen,

1986; Knapp & Clark, 1991). However, this relationship was not found routinely. Variants on affective priming might also suggest that good moods bring more diverse information to mind (e.g., Isen et al., 1985) and that this diffuses attention (e.g., Mackie & Worth, 1989), or that good moods lead to flexible processing (e.g., Murray et al., 1990). However, manipulated (Studies 1, 2, and 4) and dispositional (Study 3) moods did not have straightforward effects on social dilemma behaviors; that is, there were no mood main effects in any studies. If affective priming had occurred, we would not have expected the observed interactions in our first three studies or that the interaction would be so easily reversed when goals were framed in terms of enjoyment, as in Study 4. (For similar reasons, ideas that moods might be related to compliance, social facilitation, group polarization, and perhaps several other phenomena could not readily explain the findings across all four studies, either.)

Our results are, however, more compatible with the general idea that moods serve as information (e.g., Schwarz, 1990; Schwarz & Clore, 1996), an assumption shared by the mood-as-input model (Martin et al., 1993). The feelings-as-information view (e.g., Schwarz, 1990) suggests people use a "How do I feel about it?" heuristic when making social judgments. That is, if people making judgments (e.g., "How satisfied am I with my life?") are experiencing good moods, favorable judgments are made. However, if people are experiencing bad moods, negative judgments are made. These ideas also have been expanded in a "cognitive tuning" approach. Affect is presumed to inform people about their current situation, which motivates cognitive processing. Positive mood is thought to serve as a cue that things are going well and that one's decisions are sound, whereas negative mood implies a problematic situation and cues the need for more careful, detailed processing (Schwarz, 1990). In social dilemmas, negative moods can in fact induce people to consider responses more carefully, whereas positive moods can induce people to use heuristics, making them more likely to simply follow behaviors of others (Hertel, Neuhof, Theuer, & Kerr, 2000). Thus, both the mood-as-input and feelings-as-information perspectives could predict a more complex relation-

ship between moods and competition and cooperation.

But the mood-as-input model expands on feelings-as-information ideas in a subtle but important way, positing that moods serve as input to stop rules, which can lead to effects on processing (Martin et al., 1993, 1997). Thus, for example, good moods tell us to continue when they reflect our level of enjoyment but tell us to stop when they reflect our level of goal attainment. In contrast, bad moods tell us to stop when they reflect our level of enjoyment but tell us to continue when they reflect our level of goal attainment. In our research, the behaviors of the purported "other" participants were not specified; that is, actual participants knew only of the general status of the resource pools. Thus, although moods can influence processing, there seems to be more than following the behaviors of others or not (Hertel et al., 2000) going on in our research. The mood-as-input model appears to parsimoniously explain the full pattern of results across all four studies. Of course, future researchers should assess how the various approaches to mood effects work independently, or in concert, to motivate choices (e.g., Sinclair & Mark, 1992; see also Forgas, 1995; Schwarz & Clore, 1996). In this regard, it is noteworthy that we simply manipulated general moods. That is, the mood itself did not have any particular relevance to social dilemmas. Another interesting avenue for future research would be to test whether specific emotions provide cues about how to act in social dilemmas (e.g., anger may lead to inferences that others are being exploitive).

Conclusion

Group researchers and applied practitioners have long been interested in people's competitive or cooperative choices in mixed-motive social dilemmas. Within the social dilemma area, there has been a tendency to focus on cognitive and behavioral variables, such as interaction strategies (e.g., Kerr & Kaufman-Gilliland, 1994), partner behaviors (e.g., Parks et al., 2001), and training (e.g., Allison & Messick, 1985) and to ignore the role of affect. Because moods are such a big part of people's lives, however, it makes sense that they should also have important implications in social dilemmas, and our research takes another crucial

step toward understanding the influence of this relatively neglected variable. Although our research was framed in terms of social dilemmas and group processes, it is likely that our ideas have broader connections to other interpersonal processes (e.g., Shepperd, 2001), and the results from both resource dilemmas (Studies 1, 2, and 4) and the PDG (Study 3) begin to attest to this. Negotiations (e.g., Pruitt & Carnevale, 1993) and international relations (e.g., Lichbach, 1990) are two other examples that share qualities with social dilemmas. In these contexts, relations could start off “hot” (more emotional) and then cool off, or vice versa, depending on the interaction. Exploring the role of moods and goals within ongoing social relations may be particularly intriguing. There also may be people, for example, who simply disdain social dilemma-type situations more generally. These things are important both theoretically and practically because social dilemmas arise in governmental, business, personal, organizational, familial, educational, and many other settings (Komorita & Parks, 1996).

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