
Achievement Goals and Interpersonal Behavior: How Mastery and Performance Goals Shape Information Exchange

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The present research examines the impact of achievement goals on task-related information exchange. Studies 1 and 2 reveal that relative to those with mastery goals or no goal individuals pursuing performance goals were less open in their information giving to exchange partners. Study 2 further clarifies this effect of achievement goals by showing that performance goals generate an exploitation orientation toward information exchange. Furthermore, relative to individuals with mastery goals or no goal, people pursuing performance goals enhanced their task performance by utilizing more high-quality information obtained from their exchange partner (Study 1) and protected their task performance by more rigorously disregarding received low-quality information (Study 2).

Keywords: *mastery goals; performance goals; information exchange; reciprocity; exploitation*

Whether people are functioning at school, at work, or at the gym, they typically find themselves in situations that can be characterized by two common factors: (a) they strive to achieve goals that make their efforts meaningful and (b) they are in the presence of peers or coworkers. These two factors are not independent. On the contrary, there is no question that individuals pursuing goals in social contexts seek information exchange (e.g., Janssen & Van Yperen, 2004) and that obtaining goal-relevant information is vital for goal attainment. Therefore, the exchange of information can be regarded as hard currency by people who pursue goals in social achievement situations.

In this article we demonstrate that the achievement goals that individuals pursue in achievement situations may crucially influence how they perceive and react to the social world around them. Notably, if people are striving to improve their own performance, as against attempting to outperform those around them, this will likely have consequences for the quality of social exchange processes and outcomes. For example, people wanting to improve their own skills will have less reason to keep their most useful knowledge to themselves than people who want to outperform their exchange partners.

The theory and research on achievement goals has focused on exploring cognition, affect, and behavior related to task engagement and task performance in individual-level settings (for a recent review, see Elliot, 2005) and in nation-level settings (Van de Vliert & Janssen, 2002). Remarkably little research has examined the crucially relevant interpersonal effects of achievement goals. Only very recently have researchers begun to examine the interpersonal meaning of achievement goals

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by exploring how these goals affect leader–member exchange (Janssen & Van Yperen, 2004), team adaptation (LePine, 2005), feedback-seeking behavior (Vande Walle, 2003), sociocognitive conflict regulation (Darnon, Muller, Schrage, Pannuzzo, & Butera, 2006), and attachment styles in adulthood (Elliot & Reis, 2003). The present experimental work contributes to this new line of research by investigating the impact of achievement goals on task-related information exchange between individuals.

The lack of knowledge on the effects of achievement goals on information exchange is unfortunate because people in achievement situations are frequently in the presence of their peers, coworkers, or rivals. Moreover, in various ways, people depend on others to accomplish their goals (Mayer, Davis, & Schoorman, 1995), most notably by exchanging information with others, such as when people work on the same project team. Furthermore, knowledge about information exchange is important for a better understanding of task effectiveness (e.g., Weick & Roberts, 1993). In this article we investigate the interpersonal effects of achievement goals by proposing and testing whether people driven by different achievement goals act in distinct ways when they exchange task-relevant information with others. Because people function as both information senders and information receivers, we consider the impact of achievement goals on the actions of individuals both when they give information and when they receive information.

Adopting a Reciprocity or an Exploitation Orientation

When people engaged in achievement situations become involved in information exchange they can, and do, pursue different achievement goals. Achievement goals reflect the purpose of an individual's achievement pursuits in a particular situation (Harackiewicz & Sansone, 1991). Most attention in the achievement goal tradition has focused on two types of goals: mastery goals and performance goals, which have typically been portrayed, both implicitly and explicitly, as approach forms of regulation. In this approach, a mastery goal involves the purpose of developing competence, gaining skill, and doing one's best, whereas a performance goal reflects the purpose of demonstrating one's superior competence by outperforming others (Dweck, 1986; Nicholls, 1984). People who strive for mastery goals predominantly compare their present performance with their previous performance and thus develop a self-referenced focus on outcomes in achievement situations. In contrast, people who pursue performance goals tend to compare their performances with those of others to monitor progress toward their desired goal, thereby developing an other-referenced focus. Given this disparity of focus, people

who pursue these different achievement goals will presumably develop distinct perceptual-cognitive frameworks with which they approach and construct information exchanges with others (Dweck, 1986).

With regard to information-giving behavior, the concept of reciprocity is highly relevant. The norm of reciprocity signifies that people should help rather than injure those who have helped them (Gouldner, 1960). When people are engaged in an information exchange with exchange partners, the expectancy to receive information from others will motivate them to give information to their exchange partners. Because not giving information to exchange partners would violate this norm of reciprocity, people generally will help others by giving information when they find themselves in an exchange situation (Deutsch, 1975; Kahneman, Knetsch, & Thaler, 1987).

Considering their focus on self-improvement, mastery goals could lead people to perceive exchange partners as their allies because exchanging and pooling task-related know-how and skills with others may facilitate attaining one's own goal of developing competence and mastering tasks. Such information exchange processes will be regulated by the extent to which the exchange partners adhere to the reciprocity norm. We posit that when individuals pursue a mastery goal, the reciprocity norm becomes salient to them and they therefore acquire a reciprocity orientation toward information exchange with others in social achievement situations. The reciprocity norm will serve as a mechanism to establish and maintain exchange because it obliges the party that has received a benefit to later repay it (e.g., Bowling, Beehr, & Swader, 2005; Cialdini, 2001; Eisenberger, Cotterell, & Marvel, 1987). The reciprocity norm fosters confidence and reduces hesitancy in both starting and continuing exchanges (Gouldner, 1960). We define reciprocity orientation as the confidence one has in the exchange of valuable information. As there are two sides to information exchange, there are two sides to confidence as well. Confidence in the information one gives is less crucial as it is under one's own control. In contrast, confidence in the information one receives, which is primarily under the control of one's exchange partner, may be the key to successful cooperation. To prevent undesirable confounding of the less important give-confidence and the more important receive-confidence, in the current research we focus on the latter.

Performance goals imply trying to surpass others. Hence, from the perspective of individuals pursuing performance goals, exchange partners are rivals rather than allies. Individuals pursuing a performance goal may be tempted to break the reciprocity norm and instead try to exploit others. Sharing know-how and combining skills with someone else are counterproductive if one is striving for superiority over others because it gives the

other party a leg up at the same time. Instead, giving others as little information as possible while strongly profiting from their information is a logical strategy when pursuing a performance goal. People who endorse performance goals may experience strong incentives to take advantage of others or, put differently, to exploit them. According to Gouldner (1960, p. 165), the concept of exploitation can be defined as “a relationship in which unearned income results from certain kinds of unequal exchange.” Therefore, to exploit, one must take advantage of an exchange partner and, at the same time, receive a profit that is not deserved on the basis of one’s actions toward this partner.

From an actor perspective, there are two concerns underlying this exploitation concept: a concern for the self and a concern for the other (Van de Vliert, 1999). Actors with mastery goals and actors with performance goals will both presumably have a high concern for the self because both kinds of actors strive to obtain valuable information from the exchange process. However, the concern for the other is seemingly different. We posit that, relative to actors with mastery goals, actors with performance goals have a lower concern for the other, arising from the fact that they want to outperform the other. Because of the reciprocity norm, actors with a mastery goal will presumably develop a greater concern for the other. We therefore expect that performance- and mastery-driven individuals will differ in the “concern for other” dimension. Individuals who pursue a performance goal are expected to develop an exploitation orientation, defined as the tendency to act in an exchange relationship by giving others as little valuable information as possible and not wanting others to profit from one’s own information.

Earlier research provided indications that mastery and performance goals in interpersonal achievement situations breed reciprocity and exploitation orientations, respectively. For example, mastery goals were connected to intentions to cooperate with peers regardless of their social group membership (Levy, Kaplan, & Patrick, 2004), whereas students with performance goals reported a low willingness to cooperate with peers of low-status groups in a school setting (Midgley, Kaplan, & Middleton, 2001). Several other studies found mastery goals to be negatively connected, and performance goals to be positively connected, to cheating attitudes and behaviors (e.g., Anderman, Griesinger, & Westerfield, 1998; Newstead, Franklyn-Stokes, & Armstead, 1996). Similarly, research in sport psychology found consistent patterns showing mastery goals to be beneficial for social-moral functioning, sportpersonship, and morally constructive team norm perceptions. Performance goals, in contrast, were associated with lower levels of social-moral functioning, sportpersonship,

and norm perception (e.g., Ommundsen, Robberts, Lemyre, & Treasure, 2003).

In the current investigation, we posit that people with different achievement goals may differ in the extent to which they develop reciprocity and exploitation orientations, and thus have different concerns for their exchange partner. Social value orientations (SVOs; Messick & McClintock, 1968), the preferences that individuals have for patterns of outcomes for themselves and for others in exchange situations, parallel to some extent these interpersonal effects of achievement goals. Actors can be oriented toward maximizing the payoffs for both themselves and others, their own payoff, or their own payoff relative to the other’s payoff. This yields three respective SVOs: cooperation, individualism, and competition. SVOs are not the same as, but may be created by, achievement goals. That is, achievement goals reflect the purpose of an individual’s achievement pursuits and thus focus on the whole process, including several aspects of task performance, whereas SVOs focus exclusively on the distribution of outcomes between oneself and others. As such, achievement goals may function as a motivational source that evokes particular SVOs in exchange situations.

Considering the strong focus on self-improvement that results from having mastery goals, one may be tempted to incorrectly assume that this type of goal will produce an individualistic rather than a cooperative orientation. This would imply that people with mastery goals are indifferent toward others and would act accordingly. However, the task-related information exchange we focus on differs fundamentally from the exchange context and variables that are often studied in SVO research (including the distribution of limited and fixed resources such as money or chips in negotiations or social dilemma situations). To illustrate this point, if two actors each have \$3 and both gave them to the other actor they would still end up with \$3 each. However, if two actors each have three unique ideas and tell each other their ideas, they both end up with six ideas. Furthermore, and not insignificantly, in the event of defection by the exchange partner, the actor would at least retain the original three ideas, whereas in the money example the actor would be left with empty pockets.

Thus, when it comes to information exchange, a reciprocity orientation does not harm people with mastery goals because they do not lose any information but only share it. We therefore posit that whereas people with mastery goals might or might not hold individualistic values, in the event of exchanging task-related information with others they will always tend to adopt a cooperative rather than an individualistic strategy to maximize their own gain.

Achievement Goals and Information Giving

Given their reciprocity orientation (“I’ll scratch your back if you’ll scratch mine”), individuals who hold mastery goals presumably pursue openness in their information giving. Giving information is regarded as investing in the other to receive good information in return. We therefore posit that people who pursue mastery goals expect to receive valuable information in return from their exchange partners and are thus willing to be open when they provide information to others; that is, they show a willingness to reveal task-related information to others.

In contrast, people with performance goals, who act from an exploitation orientation, are more likely to be wary of others taking advantage of them. They may be vulnerable in interpersonal achievement situations because attaining their goal is other referenced and thus depends on the level of achievement of others, including their exchange partner. This vulnerability may be threatening to individuals with performance goals because when others take advantage of the shared information this will almost automatically obstruct them in attaining their performance goal of outperforming these others. We therefore suppose that people with performance goals will try to protect themselves against this threat by preventing exchange partners profiting from the information exchange. Hence, individuals with performance goals may be expected to manipulate information that they give to exchange partners, thus not behaving open. The proposed relationship between achievement goals and the openness in information giving is summarized in Figure 1.

Achievement Goals and Utilization of Received Information

Mastery and performance goals may lead people in achievement situations to differ in their dependence on, and their judgment and utilization of, information they receive from exchange partners. Research suggests that people with mastery goals are high in intrinsic motivation (e.g., Elliot & Church, 1997) and are inclined to use deep processing strategies when performing complex and challenging tasks (e.g., Anderman et al., 1998; Elliot, McGregor, & Gable, 1999; Steele-Johnson, Beauregard, Hoover, & Schmidt, 2000). Accordingly, in serving their goal of self-improvement, they may be expected to be interested in receiving useful information from others and, as a result of their reciprocity orientation, to provide valuable information in return. Given such a collaborative mindset, we expect that the information received from an exchange partner would be treated with a relatively low amount of suspicion by individuals endorsing mastery goals.

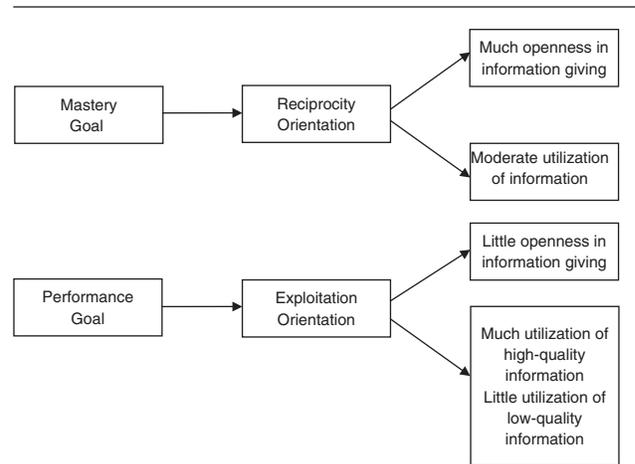


Figure 1. Theoretical model for the effect of achievement goals on information exchange through proposed mediators.

In contrast, individuals with performance goals are high on extrinsic motivation (Van Yperen, 2006) and are apt to use surface processing strategies when performing tasks (e.g., Elliot et al., 1999; Steele-Johnson et al., 2000; VandeWalle, Cron, & Slocum, 2001). Given their relatively shallow approach to task elaboration, individuals pursuing performance goals may be more dependent on useful task information obtained from others to enhance their own task performance than individuals with mastery goals who are motivated to profoundly master their tasks. Although past research has shown that performance goals predict a low frequency of help-seeking behavior (e.g., VandeWalle, 2003), performance goals have been reported as leading to a preference for a monitoring method of feedback seeking. When participants receive task-related information in an information exchange context, choosing to ignore this information seems unlikely and inefficient because the potential self-presentation and effort costs are low (VandeWalle, 2003).

However, using task information provided by others can only be profitable if the quality of that information is adequate. If one has an exploitation orientation and consequently gives information of relatively low quality to others, one may expect to receive information of a similar quality in return (cf. Van Lange & Kuhlman, 1994). Hence, people endorsing performance goals are likely to scrutinize the quality of information received from exchange partners more thoroughly than people with mastery goals, who have a reciprocity orientation toward exchange. Given their more suspicious attitude, people who pursue performance goals may more readily detect information of low quality than people with mastery goals. Naturally, if the provided information is

perceived as being of low quality, people will disregard it for the sake of their own task performance.

This line of reasoning leads us to expect achievement goals to influence individuals in how they perceive and use information received from exchange partners. That is, compared to individuals with mastery goals, individuals pursuing performance goals are more focused on detecting and disregarding low-quality information obtained from others that could hurt their own task performance. However, if the received information is judged to be high quality, performance goals will motivate individuals to utilize this valuable information to enhance their own task performance to a greater extent than would mastery goals. For individuals pursuing performance goals, utilizing high-quality task information obtained from others can compensate for their shallow task elaboration and facilitate them in accomplishing their goal of outperforming others. In contrast, individuals with mastery goals, who are intrinsically motivated to profoundly master tasks themselves, can be expected, relative to individuals with performance goals, to use information received from others only to a moderate extent by selecting those pieces that fit well and add value to their own well-developed task strategies. Figure 1 shows the proposed relationships between achievement goals and the utilization¹ of received information.

STUDY 1

The purpose of Study 1 was to investigate the effects of achievement goals on the openness in information giving and the extent to which task-performing individuals utilize high-quality information received from other task-performing individuals in their further task performance. To test our ideas, we conducted an experiment in which we manipulated achievement goals and let participants work on a novel and challenging task, thereby minimizing the impact of prior ability. We therefore adopted a complex task that was originally used in group dynamics research, the Winter Survival Exercise (WSE; Johnson & Johnson, 2000). As elaborated later, we adapted this task to assess purely behavioral measures of giving and using task-relevant information shared in exchange relationships.

Method

Participants and Design

Seventy-four students at the University of Groningen (30 men and 44 women²) participated in the study and were paid for their participation. Participants were randomly assigned to one of the three goal conditions

(mastery vs. performance vs. no goal) of the between-subjects design.

Procedure

On arrival at the laboratory, each participant was led to a separate cubicle containing a computer with a monitor and a keyboard. Next to the monitor, participants found pieces of paper and a pencil. Participants were told that the computers were connected to one another and that it was possible to communicate with others by means of the computer network. The study lasted a total of 50 min, and participants were paid 6 euros for their participation (approximately US\$8).

The study started by presenting the WSE (Johnson & Johnson, 2000) to the participants. The WSE is very much like the well-known NASA Moon Survival Problem except that the WSE has the advantage of being less well known and being a more complex exercise to perform (Miner, 1984). The exercise consisted of reading a scenario that described the situation of a crash landing of a plane in a very cold and desolate area, in which both pilots were killed and the plane was lost. However, the surviving passengers managed to salvage 12 items from the plane (e.g., a hand axe, a compass, a lighter). After reading this scenario, the participants were instructed to think about and write down the possible advantages and disadvantages of each of the 12 items on a form. Then the participants ranked the 12 items in order of their importance for survival on a piece of paper and entered this ranking into the computer.

The interpersonal character of the exercise was then introduced by telling the participants that another participant had also carried out this assignment and that they were about to exchange information with this other person. In reality, the other person was simulated by the computer and all stimulus information was pre-programmed to ensure that participants would receive standardized information. Participants were instructed to give a ranking and corresponding arguments to the other, after which they would receive a ranking and arguments of the other. Finally, after they pored over the other's information, the participants were expected to make a final ranking of the 12 items. After this procedure had been outlined, goal manipulation was induced. In line with Van Yperen (2003), the following goals were assigned: "perform better on your second ranking as compared to your first ranking" (mastery goal) or "perform better on your second ranking as compared to the other's ranking" (performance goal). Next, the participants elaborated on the goal that was assigned to them to intensify the achievement goal manipulation. Participants answered two questions about their thoughts and feelings evoked by the specific

goal that was assigned to them (cf. Van den Bos, 2001). Participants were asked to write down their answers to these questions.

After the procedure was explained and the goal manipulation induced, each participant was asked to send a ranking and arguments to the other person using the computer network. The participants had complete freedom as to whether they sent the actual ranking they had drawn up earlier or a different ranking to the other person. Next, they received the other's ranking and arguments and jotted this information down on a piece of paper. To ensure that the information that the participants received was high quality, the other's ranking corresponded with the experts' solution described by Johnson and Johnson (2000) and was accompanied by a selection of the experts' arguments. Next, the participants made their final ranking of the 12 items, after which manipulation checks were assessed. Before leaving, the participants were paid for their participation and were thoroughly debriefed.

Measures

Manipulation check. Participants were asked to indicate which specific goal had been assigned to them for the exercise. Participants could choose between mastery goal and performance goal, or indicate that no goal had been assigned to them.

Openness in information giving. This variable was assessed by computing Spearman's rank-order correlation between the initial ranking the participants produced and the ranking they gave to the other. A correlation of 1 indicated that participants were completely open to their exchange partner and had sent the ranking they originally drew up. The lower the correlation, the more the information given to the exchange partner deviated from the ranking the participants had actually made.

Utilization of received information. Two Spearman rank order correlations were computed: one between the initial ranking and the experts' ranking, and another one between the final ranking and the experts' ranking. The discrepancy between both correlations yielded a measure of the extent to which participants utilized the information they received in making their final ranking. A more positive value indicates greater utilization of the received high-quality information (and thus an improvement in performance), whereas a more negative value implies that the final ranking differs more from the received high-quality information than the original ranking (representing a deterioration in performance).

Results

Manipulation Check

A chi-square test, comparing the observed frequencies of cases with the expected frequencies, revealed that the goal manipulation had been successful, $\chi^2(4, N = 74) = 61.46, p < .001$.

Openness in Information Giving

The means and standard deviations of the two dependent variables of openness in information giving and utilization of received information³ are presented in Table 1. Univariate analysis⁴ revealed a main effect of goal manipulation on openness in information giving,⁵ $F(2, 69) = 3.04, p = .05, \eta_p^2 = 0.08$. To interpret this effect, we performed contrast analyses that tested whether the performance goal had an effect relative to the mastery goal and anchored the goal conditions to the no-goal control condition. Relative to mastery goal manipulation, performance goal manipulation produced a lower average level of openness in information giving, $F(1, 69) = 5.02, p = .03, \eta_p^2 = 0.07$. Performance goal manipulation also produced a lower average level of openness in information giving than the no-goal condition, $F(1, 69) = 3.95, p = .05, \eta_p^2 = 0.05$. No difference was found between mastery goal manipulation and the no-goal condition, $F(1, 69) = .07, ns, \eta_p^2 = 0.00$.

Utilization of Received Information

Univariate analysis revealed a main effect of goal manipulation on utilization of received information,⁶ $F(2, 69) = 3.94, p = .02, \eta_p^2 = 0.10$. As expected, contrast analysis revealed that, relative to mastery goal manipulation, performance goal manipulation produced a marginally greater utilization of the high-quality information allegedly provided by the exchange partner, $F(1, 69) = 3.67, p = .06, \eta_p^2 = 0.05$. The performance goal condition also led to greater information utilization than the no-goal condition, $F(1, 69) = 7.42, p = .01, \eta_p^2 = 0.10$. Again, no difference was found between mastery goal manipulation and the no-goal condition, $F(1, 69) = .59, ns, \eta_p^2 = 0.01$.

Discussion

The results of Study 1 suggest that individuals with different achievement goals differ in terms of task-related information exchange in an achievement setting. As expected, we found that relative to mastery goals, performance goals lead to less openness in information giving. Comparing these results with a no-goal group indicates that performance goals carry this effect: They lead to less openness in information giving rather than that mastery

TABLE 1: Means and Standard Deviations of Measures of Information Exchange as a Function of Achievement Goal (Study 1)

Dependent variable	Goal					
	Mastery		Performance		No goal	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Openness in information giving	0.99	0.01	0.78	0.54	0.97	0.14
Utilization of received information	0.18	0.21	0.33	0.35	0.12	0.27

NOTE: Higher values indicate greater openness in information giving and greater utilization of received high-quality information, respectively.

goals leading to greater openness in information giving. This suggests that people typically follow the norm of reciprocity and that it is having a performance goal that incites people to break this norm and act with reduced openness in information giving.

We also found that having performance goals, rather than mastery goals, leads to greater utilization of received high-quality information. From the comparison with the no-goal group, we further infer that this difference is because performance goals increase information utilization rather than mastery goals reduce information utilization. This suggests that individuals who follow performance goals typically utilize received information from exchange partners to a greater extent than those with mastery goals or no specific goals.

STUDY 2

The aims of Study 2 were to replicate the findings from Study 1 on openness in information giving and to further investigate the psychological process underlying this information giving behavior. To examine the roles that reciprocity and exploitation orientations play in the exchange of information, we tapped these orientations that we expected to mediate the relationship between achievement goal and the openness in information giving (see Figure 1).

The quality of the information itself also deserves further attention. In Study 1, the participants received the best possible ranking information from their exchange partner. As expected, individuals with a performance goal were found to utilize this high-quality information to a greater extent than individuals with a mastery goal. In Study 2, the participants instead obtained the worst possible ranking from their exchange partner to test the hypotheses that individuals with performance goals are better equipped to disregard low-quality information in their further task performance than individuals with mastery goals and that this effect of achievement goal on disregarding received information is mediated by perceptions of the quality of this information.

Research in the achievement goal domain has proposed bifurcating mastery and performance goals into approach and avoidance types (e.g., Elliot & McGregor, 2001). A final goal in Study 2 was to explore the possible complicating impact of avoidance goals on task-related information exchange. Individuals with mastery-approach goals are assumed to focus on the development of competence through mastering tasks and gaining new skills, whereas individuals with mastery-avoidance goals strive to avoid deterioration in task performance (Van Yperen, 2003). Similarly, individuals with performance goals can be motivated either to perform better than others (performance-approach goal) or not to perform worse than others (performance-avoidance goal). Bifurcating the achievement goals thus yields a 2×2 framework with a definition dimension (mastery goal vs. performance goal) and a valence dimension (approach goal vs. avoidance goal; Elliot & McGregor, 2001). However, there are few published studies in which avoidance goals have been manipulated (DeShon & Gillespie, 2005). VandeWalle (2003) noted that apart from differences in magnitude, the effects of approach and avoidance goals on information-seeking processes are often similar. Given this, we had no clear a priori expectations about the effects of the valence dimension of achievement goals on task-related information exchange.

Method

Participants and Design

One hundred and twenty-five students at the University of Groningen (34 men and 91 women) participated in the study and were granted partial course credit for their participation. Participants were randomly assigned to one of the conditions of the 2 (definition: mastery vs. performance) \times 2 (valence: approach vs. avoidance) between-subjects design or to the no-goal condition.

Procedure

The experimental procedure was the same as in Study 1 except for the following two points. Instead of the best possible information, the participants now

received the experts' ranking in reverse order accompanied by a selection of poor arguments. Thus, participants received the worst possible ranking, that is, low-quality information, from their fictitious exchange partner. Second, in addition to the three conditions used in Study 1, two avoidance goal conditions were added in this study. Following Van Yperen (2003), participants in the avoidance goal conditions read: "not perform worse on your second ranking as compared to your first ranking" (mastery-avoidance goal) or "not perform worse on your second ranking as compared to the other's ranking" (performance-avoidance goal).

Measures

Manipulation check. As in Study 1, the participants were asked to indicate which specific goal (or no goal) was assigned to them for the exercise.

Dependent variables. The measure for openness in information giving was the same as in Study 1. The utilization of received information measure requires further attention because in Study 2 participants received the inverse of the experts' ranking. Therefore, in contrast to Study 1, the two Spearman rank-order correlations computed were between the initial ranking and the inverse experts' ranking, and between the final ranking and the inverse experts' ranking. The discrepancy between both correlations now provides a measure of the utilization of poor information. A more positive figure indicates greater utilization of the received low-quality information in making the final ranking (and thus a deterioration in performance), whereas a more negative figure implies that the final ranking produced is further from the received low-quality information than the original ranking (thus reflecting an improvement in performance).

Mediators. Reciprocity orientation was measured by asking the participants to what extent they had confidence in the other party providing them with good information (1 = *very weak*, 7 = *very strong*). Exploitation orientation was measured by asking participants to what extent they give no information to the other (1 = *very weak*, 7 = *very strong*) and hoped that the other would not profit too much from their information (1 = *very weak*, 7 = *very strong*). The items were sufficiently intercorrelated ($r = .58, p < .001$) to be averaged ($\alpha = .74$). The perceived quality of the received information from the other was assessed by asking the participants to judge the quality of the other's ranking (1 = *extremely poor*, 10 = *excellent*).

Results

Manipulation Check

A chi-square test, comparing the observed frequencies of cases with the expected frequencies, revealed that the goal manipulation was again successful, $\chi^2(16, N = 125) = 323.78, p < .001$.

Openness in Information Giving

The means and standard deviations of openness in information giving and utilization of received information⁷ and the three proposed mediators are presented in Table 2. A 2 (definition: mastery vs. performance) \times 2 (valence: approach vs. avoidance) ANOVA revealed a main effect of goal definition (mastery vs. performance) on openness in information giving, $F(1, 96) = 5.86, p = .02, \eta_p^2 = 0.06$. There was no main effect associated with valence, $F(1, 96) = .03, ns$, and neither was there an interaction effect, $F(1, 96) = .05, ns$. To interpret the main effect of goal definition, we performed a series of contrast analyses that included the no-goal condition. As in Study 1, compared with the mastery goal manipulation, performance goal manipulation produced a lower average level of openness in information giving, $F(1, 122) = 7.39, p < .01, \eta_p^2 = 0.06$. Performance goal manipulation also led to a lower level of openness in information giving than the no-goal condition, $F(1, 122) = 4.74, p = .03, \eta_p^2 = 0.04$. Again, no difference was found between the mastery and the no-goal condition, $F(1, 122) = .00, ns, \eta_p^2 = 0.00$. These results thus perfectly replicate the findings from Study 1.

Furthermore, because both reciprocity and exploitation orientations were hypothesized as mediating the effect of achievement goal on openness in information giving, we conducted a mediation analysis using the approach recommended by Baron and Kenny (1986). First, performance goal (*mastery goal* = 0, *performance goal* = +1) predicted openness in information giving ($B = -.09, t = -2.72, p = .01$). Second, achievement goal marginally predicted reciprocity orientation ($B = -.44, t = -1.86, p = .06$) and significantly predicted exploitation orientation ($B = .74, t = 2.74, p = .01$). Third, both reciprocity orientation ($B = .04, t = 3.45, p < .01$) and exploitation orientation ($B = -.03, t = -3.24, p < .01$) predicted openness in information giving. Finally, when both the independent variable and the mediators were entered as predictors, the effect of achievement goal on openness in information giving was reduced ($B = -.06, t = -1.90, p = .06$).

A bootstrap analysis (Preacher & Hayes, 2004; Shrout & Bolger, 2002) was employed to test our multiple mediation expectation. This approach involves

TABLE 2: Means and Standard Deviations of Measures of Information Exchange as a Function of Achievement Goal (Study 2)

Dependent variable	Goal					
	Mastery		Performance		No goal	
	M	SD	M	SD	M	SD
Openness in information giving	0.99	0.01	0.91	0.26	0.99	0.02
Utilization of received information	0.24	0.25	0.15	0.19	0.29	0.33
Reciprocity orientation	5.16	1.19	4.71	1.29	5.04	0.93
Exploitation orientation	2.11	1.34	2.85	1.48	2.36	1.08
Perceived quality of received information	6.92	1.21	6.06	1.92	6.32	1.84

NOTE: Higher values indicate greater openness in information giving, greater utilization of received low-quality information, higher reciprocity orientation, higher exploitation orientation, and higher perceived quality of received information, respectively.

computing 95% confidence intervals (CIs) around indirect effects; mediation is indicated by CIs that do not contain zero. The results gave a CI range from $-.0864$ to $-.0055$. Based on this result (zero is not included in the 95% CI), we conclude that the mediated effect is indeed significantly different from zero ($p < .05$, two-tailed; 5,000 bootstrap resamples). An examination of the specific indirect effects indicates that both reciprocity orientation and exploitation orientation are significant mediators because their CIs likewise do not contain zero ($-.0536$ to $-.0011$ and $-.0568$ to $.0025$, respectively); therefore, both mediators contribute to the indirect effect. This multiple mediation is fully in line with our expectations.

To test whether the effect of the performance goal versus no-goal conditions on the openness in information giving was mediated by either reciprocity orientation or exploitation orientation, we derived additional regression equations. Although performance goal (*no goal* = 0, *performance goal* = +1) did predict openness in information giving ($B = -.09$, $t = -2.18$, $p = .03$), it failed to predict either reciprocity orientation ($B = -.33$, $t = -1.12$, $p = .27$) or exploitation orientation ($B = .49$, $t = 1.46$, $p = .15$). Given that neither mediator was predicted by performance goal, the requirements of Baron and Kenny (1986) are not met, thereby precluding a test of mediation. We therefore cannot conclude that the performance goal versus no-goal condition effect on openness in information giving is mediated by reciprocity orientation and exploitation orientation.

Utilization of Received Information

A 2×2 ANOVA revealed a main effect of definition on the utilization of the low-quality information provided by the alleged exchange partner, $F(1, 96) = 4.60$, $p = .03$, $\eta_p^2 = 0.05$. Again, neither a main effect linked to valence, $F(1, 96) = 1.56$, *ns*, nor an interaction effect was found, $F(1, 96) = .44$, *ns*. To interpret the effect of

definition, we performed contrast analyses. As expected, relative to the mastery goal manipulation, the performance goal manipulation produced less utilization of the low-quality information, $F(1, 122) = 3.66$, $p = .06$, $\eta_p^2 = 0.03$. The performance goal manipulation also resulted in lower utilization of the received information than the no-goal condition, $F(1, 122) = 5.86$, $p = .02$, $\eta_p^2 = 0.05$, and as before no difference was found between the mastery goal and the no-goal condition, $F(1, 122) = .75$, *ns*, $\eta_p^2 = 0.01$.

Furthermore, the perceived quality of the received information was hypothesized to mediate the effect of achievement goal on utilization of the received information. Performance goal (*mastery goal* = 0, *performance goal* = +1) predicted the utilization of received information ($B = -.09$, $t = -1.91$, $p = .06$) as well as the predicted perceived quality of received information (the proposed mediator; $B = -.86$, $t = -2.61$, $p = .01$), which in turn predicted information utilization ($B = .03$, $t = 2.22$, $p = .03$). Subsequently, when both the independent variable and the mediator were entered as predictors, the effect of achievement goal on utilization of received information was reduced ($B = -.07$, $t = -1.44$, $p = .15$). Once again, to test the indirect effect, the bootstrapping method was used. Results indicated a 95% CI ranging from $.0041$ to $.0536$, and from this we conclude that the mediated effect is significantly different from zero ($p < .05$, two-tailed; 5,000 bootstrap resamples). This result supports our expectation.

To test whether the effect of the performance goal versus the no-goal condition on information utilization was mediated by the perceived quality of the received information, additional regression equations were estimated. Performance goal (*no goal* = 0, *performance goal* = +1) predicted information utilization ($B = -.15$, $t = -2.42$, $p = .02$) but did not predict perceived quality of received information ($B = -.26$, $t = -.64$, $p = .52$). The latter estimate precludes a formal test of mediation; therefore, we cannot conclude that the performance

goal versus no-goal effect on information utilization is mediated by perceived quality of received information.

GENERAL DISCUSSION

The results from our studies consistently show that performance goals lead individuals to behave less openly when they give information to an exchange partner. Furthermore, Study 2 provides a more detailed insight into this effect of achievement goals by demonstrating that mastery goals give rise to a reciprocity orientation, which motivates individuals to equally share valuable information, whereas performance goals evoke an exploitation orientation motivating individuals to take more from the information exchange than they give. In both studies, the mastery goal condition did not differ from the no-goal condition in their impact on the information-giving behavior. Therefore, people with mastery goals demonstrate cooperative rather than individualistic behavior and follow the norm of reciprocity when exchanging information. In general, this reciprocity norm is perceived and preferred as the default norm in exchange situations (Gouldner, 1960). This is exactly what the results show: As in the mastery goal condition, in the no-goal condition participants were almost completely open in the information they gave to the other. Additional mediation analyses provided some indication that pursuing a mastery goal, as compared with no goal, makes the reciprocity norm more salient. This was reflected by the fact that reciprocity orientation did mediate the effect of mastery versus performance goals on openness in information giving, whereas this mediation of reciprocity orientation was not found in the effect of performance goal versus no goal.

With regard to the psychological mechanisms that we hypothesized to underlie the effect on utilization of received information, we showed that mediation did occur in the mastery versus performance effect on utilization of received information. In contrast, we did not find that the performance goal versus no-goal effect was mediated. Apparently, relative to individuals endorsing performance goals, people with mastery goals are less apt to detect low-quality information, possibly because they have a more confidence-building image of their exchange partners in the first place.

We investigated the possible role of the valence dimension of achievement goals in Study 2, but we did not find indications that distinguishing between approach and avoidance goals leads to different results in terms of openness in information giving and utilization of received information. This corresponds with the notion of VandeWalle (2003) that with respect to achievement goals, the effects of approach and avoidance goals on interpersonal outcome variables are often similar.

Theoretical Implications

Our investigation shows that achievement goals influence people both when they give and when they receive information in an exchange situation. Specifically, having performance goals was found to lead to a weak reciprocity orientation and a strong exploitation orientation, whereas mastery goals make the norm of reciprocity salient. In addition, performance goals lead people to better detect low-quality information obtained from exchange partners than mastery goals or no goal. This is beneficial for their task performance because it enables them to disregard poor information.

To our knowledge, this is the first experimental study that has investigated the effect of achievement goals on information exchange. An earlier study by Ryckman, Thornton, Gold, and Burckle (2002) investigated the effect of hypercompetitiveness (the indiscriminate need to compete and win to maintain or enhance feelings of self-worth) in romantic relationships. They found that hypercompetitive individuals reported being less honest and less open in communication, and had stronger feelings of mistrust toward their partner, which parallels the results of the current investigation to some extent.

The reciprocity orientation that mediated the relationship between achievement goal and openness in information giving is in line with earlier research by Insko, Schopler, Hoyle, Dardis, and Graetz (1990). They found that the uncooperative behavior that occurred in a Prisoner's Dilemma game was partly motivated by a fear of being taken advantage of. Research by Stapel and Koomen (2005) demonstrated that when people perceive a situation as competitive, they tend to contrast themselves with social comparison targets. Conversely, when people perceive a situation to be predominantly cooperative, they assimilate with the social comparison target. We reason that the competitive mind-set created by performance goals activates a weak reciprocity orientation and a strong exploitation orientation in the context of information exchange.

Practical Implications

The results of the present research show that, relative to mastery goals or no goal, performance goals were found to be less beneficial for open communication with others. In contrast, people with mastery goals acted cooperatively when giving information to others. We speculate that people who endorse mastery goals view openness in information giving as an investment that helps them receive good information in return. They acted open in their information giving and reported an expectation of receiving valuable information. The openness in people who pursue mastery goals parallels

the concept of strategic use of fairness (Van Dijk, De Cremer, & Handgraaf, 2004), in this situation the aim being to receive high-quality information in return.

Another finding is that based on task improvement, people who pursue performance goals perform better than people who follow mastery goals or no goal. This concurs with the extant literature that shows that performance-approach goals are generally associated with better task performance (e.g., Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002). One could argue that in the present research, performance goals produced better task performance because individuals who were driven by these goals were particularly equipped to value useful, high-quality information. An alternative explanation for this finding would be that performance goals lead people to utilize available information from others regardless of the standard of this information. However, we showed that when low-quality information was provided, people with performance goals were better equipped to assess the poor quality of this information, and subsequently disregard it, than people with mastery goals or no goal. Therefore, although performance-driven individuals may be inclined to use shallow task strategies in performing tasks, when they obtain task-related information from others they make sure they use only good information. This is a form of adaptive behavior because people with performance goals tend to be wary of people who might want to deceive them, as their goal attainment is dependent on outperforming others. Conversely, mastery goals lead to a more cooperative mind-set than performance goals. The drawback of this mind-set was clearly demonstrated: People with mastery goals are more likely to utilize low-quality information than people with performance goals.

The outcomes of this study might appear to suggest that performance goals exclusively lead to effective and desirable task outcomes. Indeed, in both studies participants in the performance condition performed better than people in a mastery or no-goal condition. In contrast, in both studies people with mastery goals consistently showed greater openness in providing information than people driven by performance goals. This mixed message that mastery goals lead to greater openness in information giving and performance goals produce a better performance could be considered further by investigating the effects of multiple goals (Barron & Harackiewicz, 2000; Harackiewicz et al., 2002) on information exchange. Future research needs to be done to test whether simultaneously pursuing mastery and performance goals leads to more desirable effects than pursuing just one of them.

Furthermore, one could suppose that performance goals might not be beneficial for the quality of long-lasting relationships. When people repeatedly fail to

behave in an open way toward their exchange partners, it is likely that this behavior will not make them very popular. In ongoing relationships, coworkers will probably not put up with such behavior (Kurzban, McCabe, Smith, & Wilson, 2001). If an organizational environment predominantly stresses task performance, people may perceive that acting in a closed way toward coworkers is a valid means of survival in such contexts (cf. Anderman et al., 1998) and consequently adopt performance goals. In such circumstances it is questionable whether much information will remain from which to profit. Further research needs to be done to investigate these long-term effects of achievement goals on information exchange.

Limitations and Strengths

In our approach, we did not study existing relationships characterized by iterative exchanges between individuals who share a history, but instead we used a procedure in which participants interacted anonymously with others. However, in this way we were able to bypass the noise associated with established relationships (e.g., status, friendships, prior commitment). Nevertheless, because research by Ryckman et al. (2002) showed partly similar effects on exchanges in ongoing, existing relationships, there is some basis for claiming that our findings have ecological validity. In our study, we focused on the initial and spontaneous reactions and behaviors that people display as a consequence of an achievement goal being imposed on them. Given that the participants could not be influenced by knowledge of the other's goals, it can be assumed that their behavior straightforwardly reflected considerations evoked by their goal focus (Cotterell, Eisenberger, & Speicher, 1992). Another advantage of the experimental method we used, compared with surveys and correlational studies, is that we obtained insights into the causality behind the effects of achievement goals on information exchange.

Although in psychological research the importance of behavioral measures is recognized, few studies actually report such hard data (Jones, 1998). Moreover, Anderman et al. (1998) stated that it is difficult to conduct studies on cheating variables, and Newstead et al. (1996) noted that it is paradoxical to ask people to be honest about their dishonesty. As in studies on cheating and dishonesty, conducting research on information exchange may also be subject to socially desirable answer tendencies. To provide a straightforward test of our hypotheses, the WSE served as an unobtrusive measurement instrument to examine the effects of mastery and performance goals on actual information exchange.

Conclusion

Overall, the outcomes suggest that the achievement goal approach can be helpful in understanding and explaining information exchange between individuals who are carrying out complex and new tasks in an achievement situation. The reciprocity and exploitation orientations supplement the achievement goal approach by offering explanatory power for the processes underlying the effects of mastery and performance goals on information giving. Furthermore, the results indicate that, relative to people with mastery goals or no goal, people who pursue performance goals enhance their task performance through a greater utilization of high-quality information obtained from exchange partners and protect their task performance by more rigorously disregarding received low-quality information. Thus, the current investigation shows that the achievement goal one strives for has effects on interpreting information exchange situations, in taking up a position and acting when giving information to others, and in utilizing information received from others.

NOTES

1. Throughout this article the term *utilization* indicates the amount of information being used without regard to the quality of this information. Therefore, the adoption of both low-quality and high-quality information will be similarly referred to as *utilization*.

2. In both studies presented here, gender was proportionally distributed among conditions. Gender had no main or interaction effects on the dependent variables considered in the studies and was thus dropped from the analyses.

3. Following outlier analysis procedures described by Cohen, Cohen, West, and Aiken (2003), we deleted two cases on the basis of their Cook's *D* values and studentized residuals after graphical examination of the respective index plots.

4. We also performed all the analyses using *z* scores obtained using a Fisher *r* to *z* transformation. These yielded substantively identical results. We report the untransformed values because these are easier to interpret.

5. Given the unequal variances in the different groups, we also performed chi-square testing. This produced the same result for this variable in both studies.

6. We also tested this by using covariance analysis, with the final ranking as the dependent variable and the initial ranking as covariate; this yielded the same results in both studies.

7. In Study 2, no outliers were identified.

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