Original Communication

Learning or Succeeding? Conflict Regulation With Mastery or Performance Goals

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The present study aimed to integrate research on mastery and performance goals into research on sociocognitive conflict (confrontation involving divergent points of view). Participants interacted by discussing conflictual issues in a context enhancing either performance goals, mastery goals, or no goals. The amount of disagreement during the interaction was measured. Results indicated that disagreement predicted epistemic conflict regulation (focused on task comprehension) in the mastery goals condition, but relational conflict regulation (focused on affirmation of competence) in the performance goals condition. Results are discussed in terms of their contribution to the conflict regulation framework.

Keywords: mastery goals, performance goals, conflict regulation, social interaction

Most achievement tasks are carried out in social contexts. Indeed, classes do not consist of a series of students learning things by themselves. On the contrary, they are environments in which students interact with each other at different points in the learning process. According to many researchers, having students discuss different points of view can be a powerful means of improving learning, interest, and social relationships (for reviews, see Johnson, 1981; Marr, 1997; Slavin, 1994). In particular, according to some authors, one of the main reasons why social interaction is an effective tool for knowledge acquisition is that discussions with other people likely result in disagreement (Buchs, Butera, Mugny, & Darnon, 2004; Doise & Mugny, 1984; Johnson & Johnson, 1993; Mugny, De Paolis, & Carugati, 1984). These authors argue that disagreement creates *sociocognitive conflict* (or *controversy* in Johnson & Johnson's terms, 1993). A great deal of research has demonstrated that, when structured in a positive way, sociocognitive conflict can produce many positive outcomes, such as the improved quality of reasoning (Butera & Buchs, 2005), interest (Lowry & Johnson, 1981; Smith, Johnson, & Johnson, 1984), perspective taking (Tjosvold & Johnson, 1977; Tjosvold, Johnson, & Fabrey, 1980), learning (Lowry & Johnson, 1981), and cognitive growth (Ames & Murray, 1982; Bearison, 1982; Doise, Mugny, & Perret-Clermont, 1976; Mugny & Doise, 1978; Mugny, Giroud, & Doise,

1978–1979; Mugny, Levy, & Doise, 1978; for reviews of this work, see Doise & Mugny, 1984).

Two Modes of Conflict Regulation

When people disagree, however, two kinds of uncertainty arise: uncertainty about knowledge ("What is the correct answer?") and uncertainty about relative competence ("Which of us is more competent?") arise. Accordingly, researchers have argued that conflict can be regulated in two different ways (Mugny & Doise, 1978; Mugny et al., 1984). Conflict regulation is *epistemic* when it is focused on the task and on understanding the problem, but it is *relational* (or *competitive*, Buchs et al., 2004; Darnon, Buchs, & Butera, 2002) when it is focused on social comparison (Butera & Mugny, 2001; Mugny et al., 1984). Doise and Mugny (1984) showed that individuals benefit from conflictual interaction when conflict is regulated in an epistemic way, but not when it is regulated in a relational way.

Many situational factors can orient individuals toward the one or the other mode of conflict regulation. For instance, conflict might be regulated in a relational way when one's self-competence is under threat (Mugny, Butera, Quiamzade, Dragulescu, & Tomei, 2003; Quiamzade, Falomir, Mugny, & Butera, 1999). This is often the case

when one is confronted with a more competent other person (Carugati, De Paolis, & Mugny, 1980–1981; Mugny, Tafani, Butera, & Pigière, 1999; Quiamzade, Tomei, & Butera, 2000; Tjosvold, Nibler, & Wan, 2001). It also occurs in situations that enhance competitiveness (Butera & Mugny, 1995; Butera, Mugny, & Tomei, 2000; Johnson & Johnson, 1985; Tjosvold, 1989) and when one person clearly expresses doubts about someone else's competence (Darnon et al., 2002; Tjosvold et al., 1980; Tjosvold, Johnson, & Lerner, 1981). On the other hand, epistemic regulation is likely to occur when self-competence is not under threat, when individuals perceive the complementarity of their points of view (Buchs & Butera, 2004; Butera & Mugny, 2001; Mugny et al., 1999), and in cooperative contexts (Johnson & Johnson, 1993, 1994; Johnson, Johnson, & Tjosvold, 2000).

In the sociocognitive development framework (Doise & Mugny, 1984) as well as in research on student interaction in classrooms (Johnson et al., 2000) and social influence (Mugny et al., 2003), it has been argued that conflict has different effects depending on the context (e.g., competitive/cooperative) because context induces important differences in student motivation. Indeed, authors have argued that in a competitive situation (e.g., Butera & Mugny, 1995; Johnson & Johnson, 1985) or when competence is under threat (Mugny et al., 2003), students are motivated to demonstrate and protect their self-competence. This motivation is believed to make them react to conflict with relational conflict regulation. On the other hand, when students are led to believe that different points of view can be complementary, they are motivated to understand the problem and to learn (Butera et al., 2000). This motivation is thought to favor epistemic conflict regulation. Surprisingly, however, the above literature has never directly examined the role of motivation in conflict regulation. The present research aims to fill this gap by testing the role of motivational variables in orienting students toward different modes of conflict regulation.

Achievement Goals in Conflict Regulation

The *achievement goals* framework has produced an abundant literature on motivation in an achievement setting (Ames, 1992; Dweck, 1986, 1992; Nicholls, 1984). Achievement goals are conceived of as reasons for achieving in competence-relevant situations, as criteria for judging success, and as a guide, a direction given to actions. According to most authors, two main goals can be distinguished: *mastery goals* (also called learning goals; Dweck, 1986, 1992) or task-focused goals (Nicholls, 1984), on the one hand, and *performance goals* (also referred to as ego-focused goals; Nicholls, 1984) or relative-ability goals (Butler, 1992; Urdan, 1997), on the other hand. Mastery goals correspond to the desire to understand the task, acquire new knowledge, and develop new abilities. Therefore, judgments of success are related to learning more. Conversely,

performance goals refer to the desire to demonstrate competence either by trying to be judged positively by and be better than others (performance-approach goal) or by avoiding being judged negatively by and being worse than others (performance-avoidance goals, Elliot, 1997; Elliot & Harackiewicz, 1996). Thus, with respect to performance goals, succeeding means performing better (or not worse) than others.

A great deal of literature has described the features of these two goals and their effects on different outcomes. For example, research has shown that mastery goals favor deep processing of the task, whereas performance goals result in a more superficial processing of the task (Albaili, 1998; Al-Emadi, 2001; Elliot, McGregor, & Gable, 1999; Nolen, 1988; Somuncuoglu & Yildirim, 1999) and a vulnerability to learned helplessness (Dweck & Leggett, 1988). Moreover, mastery goals have been shown to favor cooperation, help seeking (Karabenick, 2003; Middleton & Midgley, 1997; Ryan & Pintrich, 1997), and a willingness to share information with others (Cheung, Ma, & Shek, 1998) and to maintain or establish a positive relationship with them (Kaplan & Maehr, 1999; Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002). This is not the case for performance goals, which enhance the perceived threat from others and reduce help seeking and cooperation (Ryan & Pintrich, 1997).

Taken together, this research suggests that a partner, or co-actor, can be seen as a source of informational support when the main goal is mastery (where students benefit from their partner's explanations), but as a source of social comparison when the main goal is performance (where the partner's competence is threatening and therefore does not represent an aid, but a hindrance to learning). If goals affect the representation one has of a partner, it is likely that disagreement will not always predict the same mode of conflict regulation irrespective of the goals enhanced by the context. In a context enhancing mastery goals, individuals should focus on perceiving the partner's contribution (Ryan & Pintrich, 1997). In this type of context, conflict should favor epistemic conflict regulation, but not relational regulation. In contrast, performance goals should focus attention on social comparison (Butler, 1992) and competence demonstration. Thus, it can be hypothesized that, when associated with performance goals, conflict predicts relational regulation and not epistemic regulation.

Method

This experiment was designed to examine these hypotheses by studying the combined effects of achievement goals (mastery, performance, or control) and conflict on conflict regulation. To this end, goals were manipulated, and conflict was measured. Epistemic and relational conflict regulation were also measured.

Participants

A total of 54 French psychology undergraduates volunteered for the experiment and were randomly assigned to one of three conditions ($N = 16$ in the mastery goals condition, $N = 18$ in the control condition, $N = 20$ in the performance goals condition). They were 49 women and 5 men, with a mean age of 19.6 years ($SD = 2.19$) evenly distributed across conditions.

Procedure

Participants arrived at the laboratory in groups of eight, and general instructions were given: They would be asked to study cooperatively (in dyads) two texts about social psychological theories. The independent variable was introduced through the specific instructions given to participants, who were either given the mastery goals instructions, the performance goals instructions, or no particular instructions. In the mastery goals condition, the instructions were:
> It is very important for you to accurately understand the aims of this experiment. You are here to acquire knowledge that can be useful to you, to correctly understand the experiments and the ideas developed in the text, and to discover new concepts. In other words, you are here to learn.

In the performance goals condition, the instructions were:
> It is very important for you to accurately understand the aims of this experiment. You are here to perform, to be good, to get a good grade on the multiple-choice test, to prove your ability, and to demonstrate your competence. Experimenters will evaluate your performance. This evaluation has to be as good as possible.

In the control condition, no specific instructions were given. The effectiveness of these instructions in inducing the targeted goals was tested in a pilot study (Darnon, Butera, & Harackiewicz, 2007). The results of the pilot study showed that the mastery instructions enhanced the endorsement of mastery goals compared to the performance instructions condition and the control condition, whereas the performance instructions enhanced the endorsement of performance goals compared to the two other conditions. Participants in the same dyad always received the same instructions. It is worth noting that unlike the performance goal instructions, the mastery goal instructions did not inform participants that they would be evaluated. This was done in order to ensure that the mastery goal instructions did not enhance performance goals. Indeed, since in our current education system, most evaluations imply social comparison (rather than temporal comparison), the idea of evaluation probably would have enhanced performance goals.

In order to maximize the chances that the participants considered the interaction to be relevant and important, participants were told about the importance of the complementarity of different points of view and the advantages of taking another person's point of view into account (Gruber, 2000). This importance was illustrated by means of a task in which four participants looked into a black box and saw a square and four other participants looked in through another opening and saw a triangle. When the participants declared that the two answers (square and triangle) were incompatible and that they could not guess what was inside the box, the experimenter took out a pyramid and explained how important the other side's point of view is, even when it seems absurd (for more details on the task, see Butera, Huguet, Mugny, & Pérez, 1994).

After this demonstration, dyads were formed of participants who did not know each other; they were seated in separate boxes and each dyad was given two copies of a text to read. Participants read the first part of the text; when the experimenter gave a signal, they were to read a question about the first part of the text. One of the participants was to give his/her answer first (order of answering was counterbalanced), and then the dyad had 3 minutes to discuss their answer to the question. They were told that during this time, they could read the text again if they wanted, but that they were not allowed to show their text to their partner. Then the experimenter asked them to read the second part of the text, and the procedure was repeated. This reading-discussing procedure was carried out for each of four parts of the text. After the last question, participants were given a questionnaire containing the dependent variables.

Materials

Booklets of text

Each participant was given a text, each of which contained four parts, each part discussing a different social psychological topic. As mentioned above, the present experiment was to measure disagreement, so there were two versions of the text, Version A and Version B, and each version presented the social psychological topics differently. Since one participant received Version A and the other Version B, it was likely that their discussion would give way to some disagreement.

The first part of the text was about co-action effects: Version A presented the social facilitation effect and Version B the social inhibition effect. The second part was about a manipulation technique; in this part, Version A and Version B were identical. The third part was about persuasion, with Version A describing the primacy effect and Version B the recency effect. The fourth part was about social judgment, with Version A describing the assimilation effect and Version B the contrast effect. The experimental effects presented in the two texts seemed contradictory but were not incompatible, since an organizing principle has been found for each of them (i.e., nature of the task, delay, awareness).

A pilot study carried out on 12 psychology freshmen in the same setting allowed us to determine the time necessary to read and discuss each part of the text. The time allocat-

ed for reading varied from 1 min (third part) to 2.5 min (first part). Participants were given 3 min for discussion, except in the case of the second question, which was non-conflictual (1 min). The time allocated for reading and discussing was similar for all participants and controlled by the experimenter.

Questionnaire

One item assessed perceived disagreement: Participants were to report - on a scale from 1 *(very few)* to 7 *(very many)* – the number of elements on which they and their partner did not immediately agree during the exchange. This measure was used as the second, continuous, independent variable ($M = 2.96$, $SD = 1.48$).

The questionnaire also contained the items constituting the two dependent variables, namely the items designed to measure epistemic and relational conflict regulation. These items were similar to those used in previous research (Darnon, Muller, Schrager, Pannuzzo, & Butera, 2006). More specifically, participants were asked to indicate – on a scale from 1 *(not at all)* to 7 *(completely)* – the extent to which, when disagreement arose, they tried to regulate the conflict in an epistemic way ("You tried to examine the conditions under which each point of view could help you understand"; "You tried to think about the text again in order to better understand"; "You tried to think of a solution that could integrate both points of view"; $\alpha = .55$, $M = 5.2$, $SD = 1.13$) and in a competitive, relational way ("You tried to show that you were right"; "You tried to show that your partner was wrong"; "You tried to stand firm by maintaining your initial position"; $\alpha = .72$, $M = 3.04$, $SD = 1.36$). After completing the questionnaire, participants were thoroughly debriefed, thanked, and dismissed.

Results

Overview of the Analyses

The experimental design contained one categorical variable (goals: performance, mastery, no goal) and one continuous variable (disagreement). To test our hypotheses, we conducted regression analyses, using the methodology recommended by Judd and McClelland (1989). First, the categorical variable was decomposed into two predictors using a contrast code convention (see below). Then interactions were calculated by multiplying the centered continuous variable with each contrast. Therefore, regression analyses contained five predictors: perceived disagreement, the two contrasts corresponding to the effect of goal, and the interactions between disagreement and each contrast. In preliminary analyses, we introduced the effect of the type of text as well as all the interactions with the other predictors. Since no significant effects appeared, and because the ef-

fect of text has no theoretical importance here, this variable was not retained in the final model.

Epistemic Conflict Regulation

As far as epistemic conflict regulation is concerned, we expected the effect of conflict in the mastery condition to differ from that in the performance and the control condition. In order to test this hypothesis, the first contrast was coded such that the mastery goals condition (coded -2) was contrasted with the other two conditions (each coded 1). The second contrast was the orthogonal contrast and compared the performance goals condition (coded -1) to the control condition (coded 1). The mastery goals condition was coded 0. Results showed that the expected interaction between disagreement and the first contrast was significant, $B = -.17$, $F(1, 40) = 5.14$, $p < .03$, $\eta^2 = .11$. Simple effects indicated that disagreement predicted epistemic regulation only in the mastery goals condition, $B = .33$, $F(1, 40) = 3.05$, $p < .09$, $\eta^2 = .07$, but not in the other conditions, $B = -.33$, $F(1, 40) = 1.62$, $p < .21$ for the performance goals condition, $F(1, 40) < 1$ for the control condition. These regression slopes are presented in Figure 1. It is worth noting that the only other significant predictor was the second contrast, $B = .49$, $F(1, 40) = 8.11$, $p < .007$, $\eta^2 = .17$, showing that overall epistemic regulation was higher in the performance goals condition than in the control condition.[1]

Relational Conflict Regulation

As far as relational conflict regulation is concerned, we expected the effect of conflict in the performance goals condition to differ from the effect in the other two conditions. To test our prediction, we conducted a comparison between the performance goals condition (-2) and the other two (1 for each), as well as the orthogonal contrast comparing the mastery goals condition (-1) to the control condition (1). Only the predicted interaction between disagreement and the first contrast was marginally significant, $B = -.20$, $F(1, 39) = 3.71$, $p < .07$, $\eta^2 = .09$. Simple effects indicated that disagreement predicted relational conflict regulation only in the performance goals condition, $B = .49$, $F(1, 39) = 3.61$, $p < .07$ $\eta^2 = .08$, but not in the other two conditions, both $Fs(1, 39) < 1$. These regression slopes are presented in Figure 2.

Discussion

The aim of this study was to test the hypothesis that disagreement interacts with achievement goals to predict conflict regulation. As expected, perceived disagreement did

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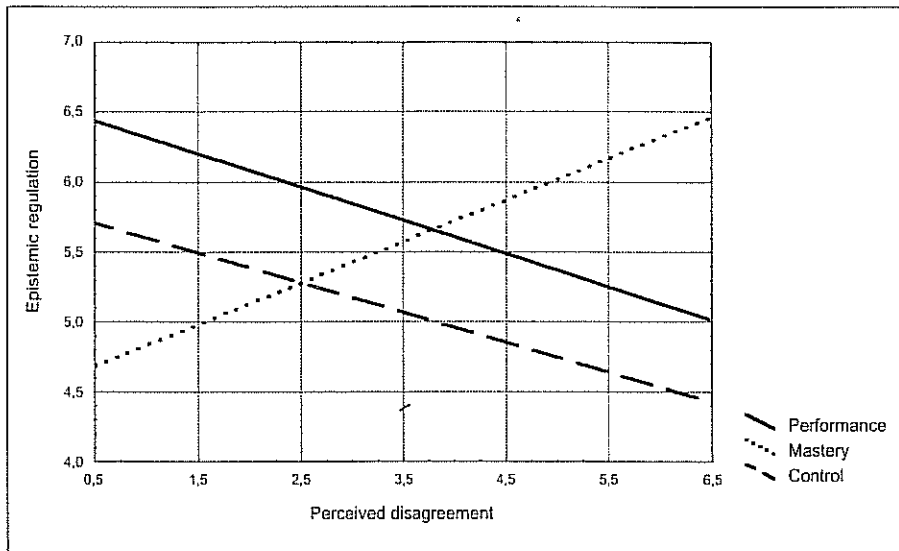1   Differences in degree of freedom are due to missing values.

Figure 1. Link between perceived disagreement and epistemic conflict regulation as a function of instruction.
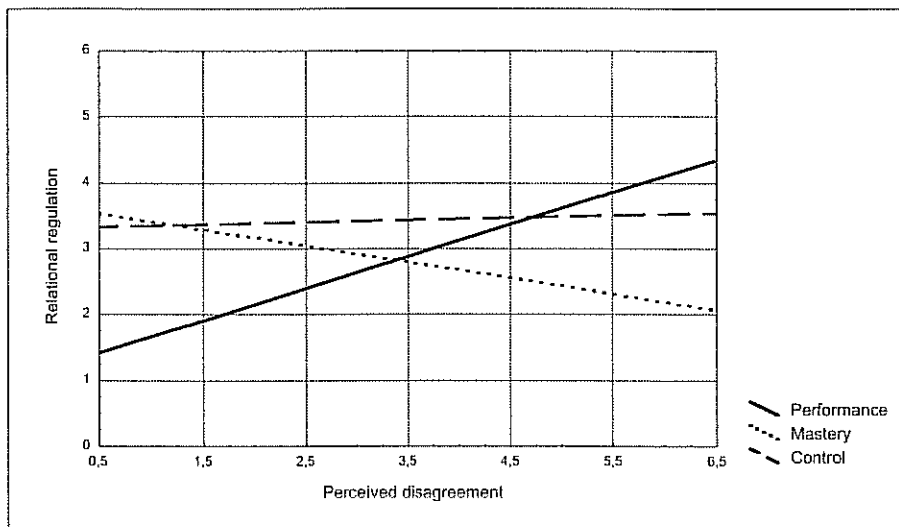

Figure 2. Link between perceived disagreement and relational conflict regulation as a function of instruction.

not yield the same effect in both contexts. In a context enhancing mastery goals, disagreement predicted epistemic conflict regulation, a regulation focused on the examination of the different points of view and understanding the task (Doise & Mugny, 1984). This was not the case in the context enhancing performance goals or in the control condition, in which the necessity to master the task had not been made salient. Conversely, following performance instructions, conflict predicted relational regulation, aimed at demonstrating that one's own answer is the best one and that the other person's is wrong. This was not the case in the other two conditions.

It is worth noting that, even though they do not speak about sociocognitive conflict but about social conflict (disagreement not in knowledge, but in concerns), Katz and Block (2000) suggested that goal orientation might influ-

ence the way a social conflict is regulated. According to them, performance-oriented students may be more apt to function in a "zero-sum" manner or to perceive the conflict as a competition they have to win, which may lead them to maintain their position without taking the other person's point of view into account. In contrast, mastery-oriented students may be more open to the other person's propositions and perceive the conflict situation as being more flexible, which allows them to regulate the conflict in a constructive manner. Results obtained here fully support this idea by showing that conflict regulation depends on the goals that have been experimentally induced.

These results show that when mastery is at stake, conflict favors epistemic regulation and thereby a focus on the partner's potential contribution to task understanding and mastery. This is consistent with the links observed in pre-

vious research between mastery goals and the perceived contribution of the partner (Butler & Neuman, 1995; Ryan & Pintrich, 1997). In contrast, in the performance goals context, conflict favors the protection of one's own point of view and the invalidation of the partner's through competitive, relational regulation. This is consistent with the links observed in previous research between endorsement of performance goals and perceived threat by others (Ryan & Pintrich, 1997). It is also consistent with research showing that conflict loses its positive potential in a competitive situation (e.g., Butera & Mugny, 1995; Johnson & Johnson, 1985).

Some limitations should be noted. First, as reported in the method section, the procedure involves a manipulation that focuses participants on the importance of taking the other person's point of view into account. This was done to ensure that participants paid attention to the other person's answer, but it means that the present results only apply to situations in which students perceive interaction as meaningful (which, by the way, should be the case in most classroom situations). This procedure might have changed the results. Notably, one could argue that the effect of disagreement in the performance goals condition might be stronger if the performance goals manipulation was not associated with such a demonstration. Further research will have to examine whether the effects are replicable without this demonstration.

Moreover, it is important to note that future research will also have to confirm the validity of the conflict regulation measures. One way to do this is by linking these regulation items to a subtler measure of conflict regulation, such as allocation of competence points to oneself and one's partner. It could also be done by examining the link between these self-report items and specific behaviors, such as the attempt to integrate the other person's point of view (epistemic regulation) or to undermine the other person's performance (relational regulation).

Finally, as noted earlier, some researchers have argued that a distinction should be made between performance-approach and performance-avoidance goals (Elliot, 1997; Elliot & Harackiewicz, 1996). The instructions used in the performance goals condition in the present study were phrased in a manner that induced performance-approach goals as participants were instructed to get a good score (and not to avoid getting a bad score), to show their competence (and not to avoid showing their incompetence), and to obtain a positive evaluation (and not to avoid obtaining a negative evaluation). Future research should examine the effects of disagreement in a performance-avoidance goals context.

Despite these limitations, the present study represents an important contribution to the conflict literature. Indeed, even if, as suggested earlier, more data is necessary to confirm the validity of these measures, our results suggest that conflict regulation can be directly assessed via self-report. Moreover, this research links for the first time a motivational perspective with research on sociocognitive conflict.

Indeed, the results of this experiment indicate that disagreement predicts epistemic conflict regulation only when the goals prompted by the context are mastery goals. When they are performance goals, disagreement results in relational conflict regulation.

Let us finish by mentioning that we have previously stated that conflict is beneficial only if regulated in an epistemic way (Doise & Mugny, 1984) and not in a relational way. The present results show that, by promoting mastery goals in the classroom, teachers can orient students toward epistemic instead of relational, conflict regulation to ensure that conflict will be effective. We therefore highly encourage teachers who use conflict in the classroom to ensure that the context in their classroom stresses mastery goals and not performance goals (Ames, 1984, 1992; Maehr & Midgley, 1991, for how to promote mastery goals in the classroom).

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