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Abstract

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Keywords: Competence; conflict; social comparison; social influence; decentring
Introduction

Scientists are supposed to debate using experimental data as a tool to distinguish between which theories are erroneous and which ones are correct. Scientific community “is described as a set of individuals who scrutinize the evidence, ponder the alternative proofs and choose the best solution for a problem” (Moscovici, 1993, p. 347). The common epistemology posits that consensus is the natural end of the scientific method (Ziman, 1968). Scientists mutually influence themselves through debates and at the end of the process come to an agreement by forming a consensus on which theory best predicts the reality. But does confrontation between scientists really work in this way? Do scientists really equally influence themselves in this way? Such a belief ignores that other motivations concerning the scientists themselves, such as their competence, their reputation or even the funds they can obtain are also involved in the confrontation. It has been supposed in the sociology of science that such dimensions can interfere with the mere epistemological motivations (Latour & Fabri, 1977; Zuckerman, 1968). From a social psychological perspective, the way scientists, experts in a field or simply competent people, approach the confrontation with diverging peers should be grounded in general processes concerning competent peer interactions and the particular stakes that are implied. This article aims to precisely study and investigate one side of competent peer interactions which leads to solving or failing to solve the confrontation between them, namely the social influence processes between competent peers.

Studies of social influence have, from the beginning, been concerned with the role of source and target characteristics in producing influence (cf. McGuire, 1968, 1985). In particular, competence has been considered of primary importance with regards to the source’s credibility and expertise (cf. Hass, 1981; Hovland, Janis, & Kelley, 1953; Hovland & Weiss, 1951) as well as the target’s intelligence or age (Binet, 1900; Hull, 1933). The study of source characteristics has contributed to one of the most obvious conclusions that higher levels of source competence (or expertise) should increase influence (cf. Petty & Wegener, 1999). With regards to the target’s competence, the conclusions have not radically changed since Binet (1900), i.e., the more competent or intelligent the target, the less the influence induced by the source (Rhodes & Wood, 1992). However, the competence dimension of the source and target has most often been studied separately. There are few investigations which have studied influence processes in contexts in which both source and target levels have been taken into account simultaneously. Furthermore, to our knowledge no previous investigations
have systematically studied contexts of influence in which the source and target share a same level of competence.

The same type of assumption surrounds social comparison processes. Festinger’s (1954) original theory stressed the role of similarity in aptitudes for social comparison processes when competence is at stake. However, since Goethals and Darley (1977; see also Goethals & Klein, 2000), the notion of similarity mostly concerns similarity on related attributes. Similarity has therefore been frequently investigated for these specific attributes (e.g. Gastorf & Suls, 1978; Suls, Gaes, & Gastorf, 1979; Wheeler & Koestner, 1984) while few developments have been concerned with similarity regarding competence or performance (for exceptions see Rijksman, 1974; Taylor, Wayment, & Carillo, 1996; Wheeler, Martin, & Suls, 1997). In other words, very few studies have been conducted to explore lateral comparisons, i.e. comparisons in which similarity is evaluated for related attributes such as performance (or competence) level. This may be due to the fact that traditionally, research on social comparison processes has focused predominantly upon two distinct comparisons that people make, namely upward (see Wheeler, 1966) and downward (see Hakmiller, 1966; Wills, 1981) comparisons.

A recent model brings together social influence and social comparison processes in lateral comparisons. It investigates social influence processes in aptitude tasks according to the target’s and the source’s competence levels, as well as the threat that the social comparison may or may not induce (Quiamzade & Mugny, 2001). The lateral social comparison between competent peers, which is called a conflict of competencies, corresponds to a particular situation in which competent individuals (or individuals who believe they are competent) are confronted with a diverging person who is also competent (or who also believes to be competent). According to this model, a conflict of competencies does not allow any positive influence to be induced. This hypothesis is based upon different works. For instance, studies show that reactance can increase as a function of the competence of the source and that of the target (Brehm, 1966; Wicklund & Brehm, 1968). Even though this research did not investigate reactance when both dimensions were manipulated simultaneously in one experiment, the findings imply that influence should mostly be reduced in a conflict of competencies. A subsequent study by Maggi, Butera and Mugny (1996) demonstrated that lack of influence is indeed observed in a conflict of competencies. Via a bogus feed-back the source and the target’s levels of competence (mediocre vs. excellent) were manipulated. Results showed that in contrast with a confrontation between peers of low
competence (that induces some form of constructivism; Quiamzade, Mugny, & Darnon, 2009), confrontation between competent peers did not produce any influence\(^1\) compared to the control group. However, this earlier study did not investigate the reasons for the absence of influence in the conflict of competencies. Therefore, the aim of this article is to focus on specific factors that could be responsible for this lack of influence: the representation of the task\(^2\) and the threat linked to it.

Aptitude tasks have implicit properties (cf. Mugny, Butera, Quiamzade, Dragulescu, & Tomei, 2003) and are conceived as situations in which one correct solution exists (i.e., people do not a priori know the correct solution and only discover it after considerable processing of the task). In the case of a divergence it is supposed that one response must be better than another (at worst both could be wrong, but it is not conceivable that both are correct). Thus, the divergence of people’s judgments is possible and simply indicates that if a judgment is correct the others must be wrong. In other words, this property of the task makes diverging judgements correctness to be regarded as being mutually exclusive. Changing the representation of the task could thus modulate this conflict. For instance, suggesting to participants that judgements may be complementary rather than mutually exclusive should encourage them to take into consideration that diverging answers may potentially possess a certain element of truth according to the other person’s particular point of view. The divergence in points of view might therefore be used to try and approach the task in an alternative way as opposed to merely standing by one’s initial position. The cognitive process induced by the response divergence should become an attempt to articulate both points of view in order to approach the truth in spite of the apparent contradiction.

According to the assumption of a threat in confrontations between competent peers, the similarity of high competence level can be a factor that enhances the threat to the self (Tesser, 1988) which needs to be managed (cf. Steele, 1988). This is not an obvious hypothesis if one considers that people who succeed (i.e., who believe they have a high level of competence) generally feel less threatened and respond less to self-enhancement needs than people who fail (i.e., who believe they have a low level of competence). It is failure and not success that most often leads to a self-serving bias (Agostinelli, Sherman, Presson, & Chassin, 1992; Beauregard & Dunning, 1998; Tesser & Campbell, 1982). Our hypothesis is however based on results which indirectly suggest that self-enhancement strategies are developed through the use of social comparisons of competencies in confrontation between competent peers. For example, it has been shown that in a confrontation between competent peers,
targets evaluate themselves as being more competent than the other despite the feedback clearly telling them that they share the same competence level (Butera & Mugny, 2001). This happens even when the source is presented as being slightly superior (Lemaine & Kastersztein, 1971-1972). In this situation, which can be described as a “fight for the first place”, Codol (1973) showed that individuals who rank second in a task estimated their performance as being higher than the person who ranked first, whereas individuals who ranked third did not. If these results demonstrate the possibility of the presence of a threat for the self in a conflict of competencies, they do not clearly show neither a threat presence nor where this threat comes from. They only show the self-enhancement consequences of a possible threat.

We suggest that the particular default representation of the task in a conflict of competencies is the key element which activates the threat, more specifically through the threatening social comparison process it implies. It corresponds exactly to a relationship where each person’s competence is based upon a need for self-correctness and the other’s errors. This is the case because if only one answer is correct and if the other answers are inevitably wrong, if one person finds the correct answer, the other does not; therefore, for one person to be competent, the other person needs to be incompetent. The social comparison context corresponding to the default representation of the task is then a situation where a negative interdependence exists between self and other’s competence. The threatening properties of such a way of considering the relationship with others have already been considered and demonstrated in interpersonal confrontations (e.g. Deutsch, 1973) or in intergroup relations (e.g. Mummendey & Schreiber, 1983).

The central question is therefore that the representation of the task implicitly induces a problematic confrontation between persons who strive to conserve their competence. In such a context, belief in one’s self-competence strengthens the impression that one will find the correct solution. However, comparing answers with those of another person whose solution diverges from one’s own but who is nonetheless also competent increases the impression that one’s own answer may be erroneous. This impression exists simply because the other person’s high level of competence raises the possibility that this person could be correct. From that point any influence can be interpreted as the recognition that the other is correct and thus oneself is wrong. Approaching the answer of the other person and being influenced can thus be interpreted as a loss of self-competence. Influence is then not possible, as shown by Maggi et al. (1996). In such a social comparison context, the target of influence should
defend self-competence against the source in order to subjectively affirm the extent to which he/she is correct and the other is incorrect.

Two main hypotheses can be drawn from these assumptions. Firstly, if the default representation of the task is the core element responsible for the lack of influence in a conflict of competencies, changing this representation should allow competent peers to benefit from the positive effects of the divergence as can be observed in interpersonal interactions (e.g., Johnson & Johnson, 2002), group processes (e.g. Hall & Watson, 1970) and developmental social psychology (e.g. Doise & Mugny, 1984; Darnon, Butera, & Mugny, 2008). One can then predict that changing the representation should allow influence to appear.

Secondly, if this representation produces a threat in the social comparison process, one could predict that the same influence should be obtained by eliminating (at least reducing) this threat.

Overview of the studies

Studies 1 to 3 will focus on the representation of the task, while studies 4 and 5 will concentrate on the social comparison processes and the threat.

In Study 1, the representation of the task has been manipulated. Three conditions were run: two experimental conditions and one control condition. In the two experimental conditions, a conflict of competencies has been introduced between a source of influence and a target, both declared highly competent on the basis of the feedback from a bogus task. In one of these conditions, a decentring task was introduced to change the representation of task, i.e. to make the participants believe that when diverging judgments are given, the fact that one is correct does not imply that the other is wrong. A control group in which participants were not confronted to any source was also conducted. The hypothesis was that the introduction of the decentring task should produce higher influence compared to both the default situation (confrontation between competent peers) and the control group.

Study 2 aimed to replicate the results of Study 1 and to discredit two alternative explanations for the higher influence resulting from the decentring task: the distracting consequence of the use of the decentring task and the possibility for targets to understand and follow experimental demands issued through verbal instructions of the decentring task. Thus, Study 2 replicated the two experimental confrontations between competent peers of Study 1 and added two other conditions to discredit each alternative explanation. One of the new conditions aimed to show that the decentring task per se was not sufficient to produce
influence, and that it is the meaning it takes which is essential. The other supplementary condition aimed to show that influence appears even when verbal instructions were not added to the decentring task.

Study 3 was designed to show that the observation of influence following a modification of the representation of the task is specifically the result of a conflict of competencies and is not the result of a general decentring effect. According to this idea, decentring should only produce an effect on competent targets when the source’s answer is considered correct, i.e. when the source is as competent as the target. In the case of an incompetent source the change in the representation of the task which allows the coexistence of several correct solutions should not produce the same influence. Despite this favourable representation, a competent target does not need to take into account a source whose answer is probably incorrect because of its low competence. To adopt the (more) correct answer appears to be the most rational strategy in this context. Study 3 then introduced a situation where, despite a modification of the representation, the source may still be wrong because it is characterized as having low competence. Study 3 had the following design: 2 decentring procedure (with vs. without) x 2 source levels of competence (high vs. low). It was expected that influence would be greater when the decentring task was introduced compared to when it was not in the confrontation with a highly competent source, whereas such a difference should not appear with a low competence source.

In Study 4, the examination of the social comparison process was added to the representation of the task manipulation. The aim of this study was to show that a change in the social comparison context produced the same effect as a change in the representation of the task. A new manipulation simulated two different social comparison contexts. The first one introduces negative interdependence between competencies. This produces a social comparison process in which the competence of one implies the incompetence of the other, a threatening social comparison which is supposed to be the default one present in the conflict of competencies. The second social comparison context breaks this logic by introducing an independence of competencies between the competent peers. In such situation each one’s competence can be affirmed without diminishing the other’s competence. The design was a 2 decentring procedure (with vs. without) x 2 social comparison context (negative interdependence vs. independence). If representation of the task and social comparison reflect the same problematic context for the self in the conflict of competencies, it would be expected that the influence should be blocked only when the social comparison simulates the default
threatening context. Influence should appear when a change is introduced either via the representation of the task or via the social comparison context.

Finally, Study 5 was designed to more directly show that the conflict of competencies dynamics are due to the presence of a threat to the self and that this threat is linked to the representation of the task, which is responsible for the lack of influence. Three conditions were run according to self-affirmation theory (cf. Steele, 1988). In the first condition threat was eliminated by using a self-affirmation procedure. In a second condition affirmation of someone else was introduced to control the effect of the affirmation task. In the third condition no affirmation was introduced at all, simulating the default confrontation between competent peers. It was expected that the reduction of threat through the self-affirmation procedure should modify the representation people have of the task and the social comparison relationship and allow influence to appear.

Study 1

Method

Participants. Eighty-one people participated in the experiment. Six were eliminated because they found the correct solution in the decentring task. The 75 participants (37 men and 38 women) who were retained had a mean age of 27.77 years ($SD = 10.87$).

Procedure

Participants were informed that the study was about economic reasoning. They individually completed a computerized version of the questionnaire. They first responded to demographic questions, i.e., sex and age.

Bogus task and false feedback. In order to give the participant the impression of being highly self-competent and to create a situation of confrontation with a source having the same level of competence, participants answered the questions of a bogus test and were then given a false feedback. They answered six multiple choice questions about political economics that were difficult enough to allow the performance feedback to be credible. It was explained that their performance would be evaluated on three criteria: how fast they answered the six questions, the number of correct answers, and the number of consecutive correct answers. This prevented participants from being able to calculate their score on their own, an increased uncertainty. It made the feedback information more useful.
Participants were informed that it can be difficult to estimate one’s own competence. They were told that they would be provided with the score of another participant (the source of influence) who had already participated. It was explained that among the group of participants, the computer would choose someone whose profile was comparable to that of the participant’s. In order to facilitate social comparison, participants were confronted with a person (the source in this case) with similar related attributes (see Goethals & Darley, 1977; Goethals & Klein, 2000). Since age and sex are characteristics that are considered to be strong related attributes (Miller, 1982; Zanna, Goethals, & Hill, 1975), the source was presented as being the same age and sex as the participant. Participants were given feedback relating to their own performance and the performance of the other participant on a 6 point scale (1=poor, 2=mediocre, 3=average, 4=good, 5=excellent, 6=perfect). Both the participant and the other person allegedly obtained excellent scores. Participants in the control condition answered the bogus task questions but did not receive any feedback and were not given any information about the source.

Decentring task. In the decentring condition, participants completed a task that aimed to modify the participants’ representations of the task by stressing the relativity of the correctness of the judgments. The purpose of the task aimed to introduce a process of decentring from one’s own point of view (Butera, Huguet, Mugny, & Pérez, 1994; Gruber, 2000; Piaget, 1924; Quiamzade, 2007). It induces the belief that, despite opposing judgements, answers can be complementary rather than contradictory, and that participants may benefit from taking into account the answers of their peers. For one second, participants were shown a stimulus consisting of the bottom half of a drawing resembling a fish tail. Their task was to guess what the complete drawing was. The whole drawing actually represented a mermaid but because little time was given to scrutinize the partial drawing, most participants answered that the drawing was of a fish. They were then presented with the top half of the same drawing, which showed the top part of a woman’s body. They were informed that this partial drawing had been shown to the other person and that his/her answer had been “a woman”. The whole drawing was then presented and the participant could see that it was neither a fish nor a woman, but a mermaid. To discourage participants from thinking that the task was constructed in a way to prevent them from guessing the correct answer, two clues were presented, one in each of the partial drawings. A few strands of the mermaid’s hair were visible in the partial drawing of the fish tail, and a fin was visible in the partial drawing of the woman’s body. It was explained that these clues were necessarily for discovering that the picture was of a mermaid. This procedure allowed participants to understand that they just
failed to see certain clues that would have hinted to the correct response (see also Study 2 for another reason for using this specific procedure). To stress the implications for the representation of the task, participants were verbally told that “When one has to solve a task, people often give contradictory answers that can be wrong in general, but can be correct according to one’s point of view. It was then added that “even if there are clues (such as the hair and the fin) that allow each person to solve the task alone, these clues can be very difficult to see. For this reason, one can benefit from looking at another person’s answers”. This decentring procedure was not present in the second experimental condition, nor in the control condition.

*Initial decision on tax rate modification.* Participants were then invited to do the second task, which was alleged to measure the same reasoning capacity than the first economic task. They were introduced to a scenario asking them to decide on a modification of tax rates. The scenario involved a small independent island that was hit by a hurricane that destroyed a number of facilities. Of all of the facilities that were destroyed, the port was the most important because it was the only supplier of wealth through the import and export of goods. The government in this scenario was deciding on a tax rate that would generate the income needed to finance the port’s reconstruction. Participants were asked to imagine that they were part of this government and that they had to decide on the tax rate. Using a 7 point scale, participants answered whether increasing the island’s tax income would be achieved by a decision to “dramatically decrease the tax rate” (=1), “decrease the tax rate” (=2), “slightly decrease the tax rate” (=3), “it depends” (=4), “slightly increase the tax rate” (=5), “increase the tax rate” (=6), or “dramatically increase the tax rate” (=7).

*Link between tax rate and state income.* Common sense knowledge about the link between a tax rate and a tax income supposes that the greater the rate, the greater the income. To ensure that participants had a belief in accordance with this linear relationship, they were presented five income amounts (160, 200, 250, 280 and 320 millions) and five tax rates (10%, 15%, 20%, 25%, 30%). The rates and income amounts were presented in a random order. The rates were supposed to be the same ones that had been applied over the last five years by the island government, whereas the incomes were supposed to be the same as the amounts acquired from the imposed tax over the last five years. In order to restore the island’s archives, the participants were asked to associate each tax rate with one of the possible income amounts.

*Influence phase.* Participants were reminded of their own decision and were also shown the decision made by the source who stated that to increase the state tax income, the
The common sense belief (i.e., the greater the tax rate, the greater the tax income) was thus indirectly invalidated by the source. In fact, the correct answer is somewhere between the common sense belief and the source’s answer. This relationship is characterized by a convex quadratic curve known as the Laffer curve (cf. Laffer, 1979).

**Post-test decision on tax rate modification.** Participants were asked to imagine that a country neighbouring the small island was in a similar situation, and also needed to generate money to rectify its economic problems. The same 7 point scale was used as in the initial decision question (1=“dramatically decrease the tax rate” to 7= “dramatically increase the tax rate”). Post-test decision rate was analysed taking into account the pre-test rate as a covariate.

**Manipulation check.** To check the effectiveness of the decentring manipulation, participants responded to the following question using a 7 point scale (1 = not at all, 7 = absolutely): “when two people give different answers in a task, do you think that if one person answers correctly this implies that the other person’s answer is wrong?”

**Results**

**Link between tax rate and state income.** A general linear link between tax rate and income was tested. As expected, participants associated higher incomes to higher rates, $F(1, 74) = 513.27, p < .001, \eta^2 = .87$ (quadratic or cubic curves introduced simultaneously in the analysis were not significant). Moreover, according to this linear effect, direct contrasts between incomes were calculated that compared the choice for the first rate (10%) to the choice for the second rate (15%), the second (15%) to the third (20%), and so on. Significant differences appeared for the four possible contrasts, $F_s(1, 74) > 42.45, p_s < .001$. These results confirm that participants shared the belief that there is a linear relationship between tax rate and income.

**Decentring check.** In order to verify that the manipulation was effective, a regression analysis was carried out according to Judd, Mc Clelland, and Culhane’s (1995) method. The independent variable, which had three modalities, was computed to have two new variables: according to the manipulation, the first one opposed the decentring condition to the no decentring condition and the control condition (coded 2; -1; -1); the orthogonal contrast opposed the no decentring condition to the control condition (coded 0; -1; 1).

The analysis revealed that participants in the decentring condition were less likely to estimate that when one person is correct, the diverging other must be wrong ($M = 2.44, SD =$
1.50) compared to participants in the other two conditions ($M = 3.56$, $SD = 1.83$ and $M = 3.36$, $SD = 1.82$), $\beta = - .27$, $t(72) = -2.42$, $p < .02$, $\eta^2 = .08$. The orthogonal contrast was not significant, showing that the representation of the task in the two last conditions did not differ, $p = .68$. In sum, the results validated the manipulation.

**Influence.** The post-test has been regressed on the independent variables (the same as before) with the initial answer as a covariate to ensure that no pre-test differences are responsible for the results. Table 1 shows the adjusted means of the post-test corrected by the pre-test. This can be interpreted as a change. The analysis revealed that participants in the decentring condition proposed less to increase the tax rate ($M = 5.08$, $SD = 1.35$) than the participants in the other two conditions ($M = 5.60$, $SD = 0.81$), $\beta = -.23$, $t(71) = 2.15$, $p < .04$, $\eta^2 = .09$. The orthogonal contrast was not significant, indicating that the last two conditions did not differ from each other, $p = .57$.

Discussion

The results confirmed the hypothesis proposing that a conflict of competencies does not produce greater influence than the control condition. Moreover, despite the hypothesis that the conflict of competencies could produce reactance, this study showed that this was not the case (see note 8). This lack of influence can however be countered by introducing a modification in the representation of the task, i.e., by using a decentring procedure.

Study 2

Study 2 was designed to address two methodological flaws. Firstly, the participants who completed the decentring procedure were asked to complete an additional task while the participants in the other conditions were not. Thus, the characteristics of this task may have had an impact on the results. For example, according to Festinger and Maccoby (1964), the supplementary task could have distracted participants and prevented them from resisting the influence to increase or decrease the actual tax rate (see also Baron, 1986). When attempts are made to persuade individuals, these individuals might change their attitudes more when they are distracted because the active process of counterargument against the source’s position is
inhibited. We assume that the observed effects were not simply due such a distraction effect because of the administration of the task. We suppose that the effects are the result of the decentring produced by this task. Thus, experiment 2 was designed to introduce a condition in which participants completed the task but where the property of the task (i.e., inducing decentring from their own point of view) was countered due to opposite instructions (see below).

Second, due to the instructions given to the participants in the decentring procedure, the results could be explained in terms of demand characteristics of the task (cf. Orne, 1972). Participants were verbally informed that it can be beneficial to see another person’s answers. This instruction may have pressured the participants to consider the other person’s response. Thus, experiment 2 was designed to add a condition in which verbal instructions were not given with the decentring procedure.

Method

Participants. One hundred and seven people participated in the experiment. Eleven where eliminated because they found the correct solution in the decentring task. The 96 who were kept for analysis (46 men and 50 women) were on average 28.18 years ($SD = 10.94$) old.

Procedure

Several changes in comparison to the previous study were introduced in the experimental design. Firstly, since the mean change in the Study 1 control condition was around 0, no control condition was run in Study 2 (see footnote 8). The two experimental conditions of confrontation with vs. without the decentring procedure were identical to those in Study 1 (respectively N = 26 and N = 27). Secondly, two more conditions were run and the explanations following the completion of the decentring task for these two conditions were changed. The aim of these conditions was to avoid any influence resulting from the experimenter’s verbal instructions and to eliminate the possible distraction effect of the decentring procedure.

In one of the added conditions, the decentring task was administered but there were no instructions given about the contradictory information or about the benefits of seeing someone else’s answer (N = 20). The clues were just mentioned, again to prevent the participant from thinking that the task was impossible. No information about the difficulty of finding these clues or comments on usefulness about taking into account other’s answers were given. This
condition was added to show that the task alone can basically induce a decentring process. Therefore, adding or withholding instructions were not expected to change anything.

In the last condition (N = 23), participants received information that was somewhat different from the information given in the decentring procedure. As in Study 1, they were told that people often give contradictory answers, and that there were small hard-to-find clues on the picture which could have helped them to solve the task. The rest of the explanations were different. Participants were told that “In order to find these clues, you have to concentrate. The fact that these clues exist should save you from needing to look at another person’s answers, which could be wrong”. In other words, they did not receive instructions about the benefit of seeing another person’s answers, but received the opposite information. The reason for this condition was as follows: if the decentring task serves as a distracter, adding such an explanation (or not) should not change anything. Nevertheless, the task should still have a distracter effect. Conversely, if by default the task induces decentring, to add opposing instructions should eliminate the decentring process induced by the task. This condition should then not produce any influence despite having administered the task, just as when this task is not administered.

With regards to the initial decision (on an increase or a decrease of the actual tax rate) and the influence phase, no changes were introduced. In addition, no changes were made regarding the final decision on an increase or a decrease of the actual tax rate and the decentring manipulation check.

**Results**

*Link between tax rate and state income.* A general linear link between tax rate and income was tested. Again, participants associated higher incomes with higher rates, $F(1, 95) = 52.27, p < .001, \eta^2 = .36$ (quadratic or cubic curves introduced simultaneously in the analysis were not significant). Significant differences appeared for the four possible direct contrasts corresponding to linearity, $F_s(1, 95) > 9.25, ps < .003$.

*Decentring manipulation check.* A regression analysis was carried out to check the effectiveness of the manipulation. It compared the two conditions where decentring was induced (supplementary task with and without decentring instruction, each coded +1) to the two conditions where it was not (no supplementary task and supplementary task with opposite instructions, each coded -1). Two orthogonal contrasts testing residuals were also introduced in the analysis. It showed that in the former conditions, the participants estimated to a lesser extent that when one person is correct the diverging other is wrong (respectively $M = 2.58, SD$
= 1.39 and $M = 2.85$, $SD = 1.35$), compared to the latter conditions (respectively $M = 3.52$, $SD = 1.53$ and $M = 3.35$, $SD = 1.34$), $t(92) = 2.48$, $\beta = -.25$, $p < .02$, $\eta^2 = .07$. Contrasts testing residuals were not significant, all the $p_i > .51$. This analysis revealed that the manipulation was effective.

Influence. To test the alternative explanations that possibly could account for influence, regression analysis were carried out for each of the three possible hypotheses. The post-test tax rate has been regressed on the pertinent independent variables for each hypothesis, with the initial tax rate as a covariate (see Table 2).

To replicate the results of Study 1 and in accordance with our hypothesis, the two conditions where the task should cause a change in the representation of the task were opposed to the two conditions where it should not cause an influence. In other words, this contrast was the same as the one tested to check the decentring manipulation: the two conditions with the supplementary task (one with verbal instructions and one without instructions; each coded +1) were contrasted to the condition in which no decentring task was added and the condition in which opposite instructions were added to the task (each coded – 1). Two orthogonal contrasts testing residuals were also introduced in the analysis. The analysis of the post-test tax rate with the initial tax rate as a covariate showed that the contrast testing our hypothesis was significant, $\beta = -.26$, $t(91) = 3.32$, $p < .001$, $\eta^2 = .11$, whereas contrasts testing residuals were not, all the $p_i > .63$. Thus, the main hypothesis of Study 2 was confirmed.

According to the hypothesis regarding the nature of the task (i.e. distraction hypothesis), one should predict that adding opposite instructions should not differ from the standard decentring instructions condition. However, the contrast comparing these two conditions was in fact significant, $\beta = .17$, $t(93) = 2.17$, $p < .04$. Moreover, the same hypothesis would lead to the prediction that there is a difference between the condition where opposite instructions were added to the decentring task and the condition without the decentring task. However, this comparison did not reach significance, $p = .98$. Thus, the alternative explanation grounded upon the nature of the task was rejected.

In line with the hypothesis regarding the experimenter’s instructions, no difference should appear between the condition where the decentring task is introduced without any instruction and the condition without a task. Contrarily to this prediction, the contrast comparing these two conditions was significant, $\beta = .19$, $t(93) = 2.41$, $p < .02$. Moreover, this hypothesis would lead to the prediction that there should be a difference between the condition where the decentring task is introduced without any instruction and the one where
the instructions imply a task demand effect. However, this comparison was not significant, $p = .89$. Thus, the alternative explanation grounded upon the experimenter’s instructions and demand characteristics of the task was rejected.

.Insert about here Table 2

Discussion

The above results discredited the two alternative explanations. They showed that the decentring process induced by the task, and not the verbal content of the instructions, allows for influence to occur. Since these instructions are in fact congruent with the task, they do not produce any supplementary effect. Adding or withholding verbal information suggesting decentring does not change anything. As demonstrated above, the change of the representation of the task (as measured by the manipulation check) and the influence score remained the same. The task then induces decentring on its own, which signifies that influence is not the result of verbal instructions congruent with the task.

If deleting the instructions had no impact, adding opposite instructions did have an impact. Adding opposite instructions eliminated the decentring that the task could have induced. Indeed, influence is no longer observed in this condition. It would not have changed anything and would have produced the same influence if the task had been a simple distracter. In fact, results suggest that opposite information changes the meaning of the task, which does not possess any more decentring properties for the targets. Neither the mere presence of the task as a distracter, nor the experimenter’s instructions for decentring, can account for the results.

Moreover, Study 2 replicated the general result observed in Study 1: there is by default no influence in confrontation between competent peers, but a change in the representation of the task does allow influence to appear. Finally, the similar lack of influence in the two conditions in which opposite instructions are given or no decentring task is induced suggests the possibility that, in conflicts of competencies, people are by default motivated to avoid consideration of the other’s judgement.

Study 3
One could argue that the change in the representation of the task induces influence regardless of the situation and has nothing specific to do with the confrontation between competent peers. Indeed, it could be assumed that a change through decentring produces a general effect, regardless of the kind of confrontation. Thus, it was necessary to show that decentring does not actually lead to influence in all cases. It should not lead to influence when the source is of low competence, i.e., when the target is superior to the source. To conceive that both the other and the self are not necessarily wrong at the same time implies that the other can be correct even if his/her answer is different. This should then be true only when the source is supposed to be competent, thereby suggesting that it could actually be correct. Thus, a change in representation should lead competent targets to be influenced when the source is competent but not when it is incompetent. In the latter case, the source’s low competence allows for the inference that the source is probably wrong even if the representation of the task does not actually imply this.

Study 3 manipulated two independent variables in a 2 decentring task (with vs. without) x 2 source’s competence (high vs. low) design. It was expected that the difference observed in Studies 1 and 2 with the decentring procedure would be found when the source is of high competence but not when the source is of low competence.

Method

Participants. Eighty-five participants took part in the experiment. Eight were eliminated because they did not answer the decentring task (see note 9). The 77 retained participants (38 men and 39 women) had a mean age of 30.81 years ($SD = 12.86$).

Procedure

The presence or absence of the decentring task was manipulated in the same way as in the previous studies: half of the participants did the decentring task (together with the verbal instructions) whereas the other half did not do the decentring task.$^9$

The competence of the source was manipulated through the bogus task score. All participants were declared excellent. For half of the participants the source’s score was declared excellent (this reproduced the information given to participants in Studies 1 and 2), whereas for the other half of the participants the source’s score was declared mediocre.

Regarding the initial decision (on an increase or a decrease of the actual tax rate), the influence phase and the final decision, no changes were made. The check for the decentring
manipulation was kept identical and a check for the source competence was added at the end of the experiment: participants expressed the extent to which they thought the source was competent based on its performance on the economic reasoning tasks (1 = not at all, 7 = absolutely).

Results

Link between tax rate and state income. A general linear link between tax rate and income has been tested. Again participants associated higher incomes with higher rates, $F(1, 76) = 71.02, p < .001, \eta^2 = .48$ (quadratic or cubic curves introduced simultaneously in the analysis were not significant). Significant differences appeared for the four possible direct contrasts, $F_s(1, 76) > 11.17, p < .001$.

Decentring manipulation check. The manipulation check measure has been regressed on the decentring task (with vs. without), the source’s competence (high vs. low) and their interaction. The analysis showed a main effect for the decentring manipulation, $\beta = .23, t(73) = 2.04, p < .05, \eta^2 = 0.05$. This result showed that the participants who completed the decentring task were less likely to estimate that when one person is correct, the diverging person is wrong ($M = 2.87, SD = 1.34$), compared to the participants who did not take part in the decentring task ($M = 3.66, SD = 1.98$). Neither the main effect of the source nor the interaction approached significance.

Source’s competence manipulation check. The same analysis evaluating the source’s perceived competence showed a main effect for the manipulation of the source’s competence, $t(73) = 2.47, \beta = .28, p < .02, \eta^2 = .08$. When the source was declared excellent, it was considered more competent ($M = 4.43, SD = 1.30$) than when it was declared mediocre ($M = 3.76, SD = 1.12$). Neither the main effect of the decentring procedure nor the interaction were significant.

Influence. The same analysis applied to post-test tax rate with the initial answer as a covariate showed that the interaction was significant, $\beta = .18, t(72) = 2.02, p < .05, \eta^2 = .05$, whereas main effects were not (see Table 3). As expected, a difference appeared on post-test tax rate when the source was declared excellent: the participants proposed a lower tax rate when they completed the decentring, in comparison to when they did not, $\beta = .25, t(72) = 2.81, p < .006$. Such a difference did not exist when the source was declared mediocre, $\beta = -.01, t(72) = -0.09, p = .93$. Moreover, the participants who completed the decentring task proposed a lower tax rate when they where confronted to the excellent source compared to when they were confronted to the mediocre source, $\beta = -.19, t(72) = 2.18, p < .04$. The same
difference was not found for the participants who did not complete the decentring task. $\beta = .06$, $t(72) = .68$, $p = .50$.

Discussion

Study 3 discredited the assumption that influence could be based on a general effect of decentring. It replicated the effect of both previous studies with a supplementary element testing this hypothesis. More influence can be observed when people benefit from the decentring process. However, this is not the case when the source is incompetent. Thus, a mere change in the representation of the task does not automatically produce influence and does prove advantageous only in encounters between competent peers. While one may agree that a divergent answer could be correct, one still needs to believe that the other’s answer can be correct. It is the high competence level of the source that makes the correctness of the answer possible when confronted with a competent target. In contrast, when the source has a low level of competence, it is the incorrectness of the answer that is made salient, and a change in the representation of the task does not allow influence to appear in competent targets.

Study 4

The default representation of the task in confrontations between competent peers should correspond with a symmetrical default social comparison process. To believe that if one answer is correct any diverging answer is wrong implies that the one who gets the correct answer is competent and the ones who do not are incompetent in the task. Actually, this particular representation means that when individuals have reached competence with their judgement other people cannot be also considered as competent. In other words, the implicit representation of the task which is dominant in the conflict of competencies is congruent with a social comparison context where degrees of competence are linked to a threatening negatively interdependent relationship that makes it impossible to recognize self competence without denying the competence of the other. The aim of Study 4 was to show that the blockage of influence appears when such a context is directly activated. Conversely, a change
in the social comparison context (i.e., independence) should lead to the same effect as a change in the representation of the task and should allow influence to appear.

Two independent variables were manipulated in a 2 decentring task (with vs. without) x 2 social comparison context (negative interdependence vs. independence) design. It was expected that as in the prior studies a difference would appear when decentring is introduced. However, this was expected only when the social comparison context was threatening, i.e. under a negative interdependence of competencies.

Method

Participants. Ninety-nine people participated in the experiment. Six were eliminated because they found the mermaid in the decentring task. The 93 participants who were retained (47 men and 46 women) had a mean age of 29.66 years ($SD = 11.98$).

Procedure

According to the first task, bogus feedback information and decentring manipulation, the procedure was identical to previous experiments.

Social comparison manipulation. After the bogus feedback but before the decentring procedure, the social comparison of competencies was manipulated through an estimation of the competence of the self and the source. Participants were told that they received a general score and that we were interested in what they thought their competence and the competence of the source was on each of the three parameters which served to calculate the general score (i.e., how fast they answered the six questions, the number of correct answers, and the number of consecutive correct answers). For half of the participants the estimations were to be given under negative interdependence. They had 100 points to divide between the self and the source. Thus, all of the points one receives cannot be granted to the other, and the competence of the self means the incompetence of the other. Such a distribution represents the expected default social comparison which is supposed to be activated in a confrontation between competent peers. For the other half, the estimations were given under independence. The participants had up to 100 points per person, which means that the competence of the self is independent of the source’s competence. It then becomes possible for the target to have a high competence level and to recognize that the source can have an equally high level.
Regarding the initial decision (on an increase or a decrease of the actual tax rate), the influence phase, the final decision and the decentring manipulation check, no changes were made.

Results

Link between tax rate and state income. A general linear link between tax rate and income has been tested. Again participants associated higher incomes to higher rates, $F(1, 89) = 461.23, p < .001, \eta^2 = .75$. (quadratic or cubic curves introduced simultaneously in the analysis were not significant). Significant differences appeared for the four possible direct contrasts, $F_r(1, 89) > 34.88, p < .001$.

Social comparison context: Estimation of competencies. The three estimations for the source and the three for the self have been aggregated in a single index ($\alpha = 0.83$ for the source, $\alpha = 0.72$ for the self). If under negative interdependence the obvious correlation, $r = -1.00$, between estimations showed that the competencies were negatively correlated, under independence they were in contrast positively correlated, $r = .66, p < .001$. As a double amount of points can be allocated under independence compared to in the negative interdependence condition, in order to be able to compare conditions the estimations have been calculated relatively to the total amount of distributed points (see Mummendey & Schreiber, 1983, for the ratio of this procedure). The self index then corresponds to the percentage of points the participants gave to themselves in relation to the total points they attributed to themselves in addition to the source. The estimation of competencies has been regressed on the decentring task (with vs. without), the social comparison (negative interdependence vs. independence) and their interaction. The analysis showed a main effect of the social comparison manipulation, $\beta = .37, t(89) = 3.72, p < .001, \eta^2 = .14$. The participants estimated they were more competent in relation to the source under the negative interdependent social comparison ($M = 56.99, SD = 12.09$) than under the independent social comparison ($M = 49.60, SD = 5.49$). Neither the main effect of the decentring procedure, nor the interaction were significant, all the $p_s > .34$. Moreover, to test if participants gave in absolute more competence to themselves than to the source, we compared their estimation and the value of 50%. The points of competence granted to the self were higher than half of the distributed points under negative interdependence, $t(47) = 4.00, p < .002$, whereas this was not the case under independence, $p = .63$.

Decentring manipulation check. The same analysis processed on the check measure$^{10}$ showed a main effect of the decentring manipulation, $\beta = .27, t(87) = 2.60, p < .02, \eta^2 = .07$. It
showed that when the participants had completed the decentring task, they were less likely to estimate that when one person is correct it can be implied that the diverging other is wrong ($M = 2.70, SD = 1.32$), compared to the participants who had no decentring task ($M = 3.57, SD = 1.78$). Neither the main effect of the social comparison nor the interaction approached significance, all the $p$s > .70.

**Influence.** The same analysis applied to post-test tax rate with the initial answer as a covariate produced a significant interaction, $\beta = .21, t(88) = 2.21, p < .03, \eta^2 = .04$, whereas main effects were not significant (see Table 4). As expected, a difference appeared on post-test tax rate when the social comparison was negatively interdependent: the participants proposed a lower tax rate when they completed the decentring task than when they did not, $\beta = .25, t(88) = 2.63, p < .01$. Such a difference did not exist when the social comparison was independent, $\beta = -.05, t(88) = .49, p = .62$. Moreover, the participants who did not complete the decentring task proposed a marginally lower tax rate when they where confronted to the source under independence than under negative interdependence, $\beta = .18, t(88) = 1.89, p < .07$. The same difference did not appear for the participants who completed the decentring task, $\beta = -.11, t(88) = 1.22, p = .22$.

Insert about here Table 4

**Discussion**

First of all, Study 4 replicated the result obtained by Butera and Mugny (2001). In spite of a feedback indicating to people that they had the same high level of competence as the source to which they were confronted, they estimated under negative interdependent social comparison that they were more competent compared to the source. The targets probably protected the self through social comparison of competencies, denying the competence of the source to their own advantage. This bias did not appear under independent social comparison where the positive correlation between the self and source competencies suggested that the source and target can be competent at the same level.

Moreover, the results showed that the lack of influence observed in competent peers confrontations in the previous studies where no particular social comparison context was induced appeared under negative interdependent social comparison. This suggests that the default confrontation between competent peers implicitly produces a similar threatening social comparison process, namely the competence of the participant corresponds to the
incompetence of the other. A modification of this context in two different ways countered this lack of influence. Firstly, the competent source had more influence upon the competent target through a change of the representation of the task, when a decentering task was introduced. Secondly, this study specifically showed that the same influence is obtained by a change in the social comparison process, i.e. through the introduction of an independent social comparison instead of a (default) negative interdependent social comparison. Whatever the dimension concerned, it allowed the competent source to obtain more influence.

Study 5

Study 4 has two main limitations. Firstly, it does not directly show that the main reason for the influence blockage is a threat to the self, nor does it show that a reduction of the particular threat allows influence to appear. Thus, it was necessary to reproduce the result with a completely different manipulation (see Campbell & Fiske, 1959), but clearly grounded in the threat dimension. According to self-affirmation theory (Steele, 1988, 1997), when the self is threatened it is important to defend and protect the self, whatever the mean available to do so. According to this idea, the self-affirmation procedure is a way to show that a threat is the cause of an effect (or a lack of effect). Self-affirmation procedure allows a response to the threat and therefore a reduction of it when such a threat exists. Then, if any effect is modified after the introduction of such a procedure, this means that a threat is present and must be the cause of the effect. In contrast, if the introduction of the self-affirmation procedure does not change anything, it means that the effect is not a matter of threat. Study 5 aimed to use such a procedure to demonstrate the role of threat in the blockage of influence observed in the conflict of competencies.

Secondly, Study 4 showed that the social comparison and the representation of the task produced the same effect but it did not show the link between them and the threat dimension. One should expect that what is common to the social comparison and the representation of the task is the degree to which people believe that the source has to be wrong. In the default representation of an aptitude task it is supposed that there is only one correct answer, what means incidentally that all of the other answers are wrong. In the negative interdependent social comparison the competence of one implies the incompetence of the other. According to the threat interpretation, what is common to both dimensions is the fact that the source has to be wrong in order to allow the self to exclusively get the correct answer and remain competent. This is congruent with the result observed by Butera and Mugny (2001) who
found that in a conflict of competencies people derogated through non diagnostic disconfirmation the other’s answers. Thus, in both manipulations the reduction of threat implies that the source no longer needs to be wrong to allow the self to be correct and thus competent. A reduction of the belief that the source has to be wrong should be a natural consequence of the reduction of the threat. Therefore, Study 5 aimed to show that threat reduction implies a change in what is common to decentring and independence of competencies, i.e., a change in the belief that the source’s answer is wrong, which in turn facilitates the influence.

Method

Participants. The seventy-six people who participated in the experiment (38 men and 38 women) had a mean age of 33.84 years ($SD = 9.25$).

Procedure

The procedure was the same as in prior studies. However, in contrast to the previous study neither decentring nor competence estimations were introduced. There was a single manipulation, introduced just after the feedback and before participants saw the source’s answer. This manipulation replicated the self-affirmation procedure used by Spencer, Fein, and Lomone (2001). In the self-affirmation condition, the participants had to choose among several values the most important one for them. Values inspired from the values of Vernon and Allport (1931) were used. Then they had to write down three reasons that made this value the most important for them. In the other-affirmation condition, in order ensure the supplementary task did not produce the effect in itself, the participants had to affirm another person. They were asked to choose the value they considered to be the most important for an average person and to then produce three reasons for their choice. Finally, in a no affirmation condition no choice between values was introduced. In fact this condition replicated the basic between competent peers confrontation situation.

Finally, regarding the initial decision (on an increase or a decrease of the actual tax rate), the influence phase and the final decision, again no changes were made. However two changes were introduced in the dependent variables. Firstly, as no decentring procedure was present, the check of this manipulation was deleted. Secondly, after seeing the source’s answer and before answering the final decision, the participants were asked a question to assess their belief about the source’s answer accuracy. They were asked on a seven point
scale: “Do you think that the other person was wrong or right with his/her answer?” (1 = completely wrong and 7 = completely right).

Results

*Link between tax rate and state income.* A general linear link between tax rate and income was tested. As expected, participants associated higher incomes to higher rates, $F(1, 74) = 513.27$, $p < .001$, $\eta^2 = .87$ (quadratic or cubic curves introduced simultaneously in the analysis were not significant). Significant differences appeared for the four possible contrasts, $F_s(1, 74) > 42.45$, $p_s < .001$.

*Influence and wrongness of the source.* A mediation analysis (see Figure 1) has been carried out with the self-affirmation manipulation as the independent variable, the wrongness of the source as a mediator and the post-test as the predicted variable (still with the initial answer as a covariate). According to the method of Judd et al. (1995), the independent variable with three modalities was first transformed into two new variables: according to the hypothesis, the first one opposed the self-affirmation condition to the other-affirmation condition and the no affirmation condition (respectively coded 2; -1; -1); the second one concerned the orthogonal contrast (0, +1, -1).

The analysis first showed that participants proposed lower tax rates in the self-affirmation condition ($M = 4.34$, $SD = 1.44$) than the participants in the two other conditions ($M = 4.95$, $SD = .97$), $\beta = -.22$, $t(72) = 2.21$, $p < .03$, $\eta^2 = .04$ (see Table 5). The orthogonal contrast was not significant, indicating that the last two conditions did not differ from each other, $p = .33$.

Secondly, the participants in the self-affirmation condition were less inclined to think that the source’s answer was wrong ($M = 4.70$, $SD = 2.00$) than the participants in the two other conditions ($M = 3.18$, $SD = 1.93$), $\beta = .36$, $t(73) = 3.29$, $p < .002$, $\eta^2 = .13$. The orthogonal contrast was not significant, $p = .23$.

Insert about here Table 5

Insert about here Figure 1
Finally, introducing the two independent variables altogether and the mediator as predictors of final tax rate, the degree to which the source was considered to be wrong produced a significant effect, $\beta = -.42$, $t(71) = 4.18$, $p < .001$, whereas the contrast opposing the self-affirmation to the other conditions lost its effect, $\beta = -.06$, $t(71) = .60$, $p = .54$ (Sobel test: $Z = 6.43$, $p < .001$).

Discussion
Firstly, the self-affirmation procedure allowed influence to appear. This result demonstrates that the blockage of influence in the confrontation between competent peers is based on a threat to the self. Secondly, this result replicated those obtained with decentring or with an independent social comparison context. This suggests that a change in the representation of the task or a change in the social comparison context allows influence to occur because these changes make the situation less threatening for the self. Last but not least, the belief about the other’s wrongness was affected by the reduction of the threat: under self-affirmation the participants were less likely to think that the other was wrong, and the less they thought the other was wrong the more they were influenced.

Overall discussion

In summary, the conflict of competencies is a relationship between competent peers in which there is no influence. Study 1 confirmed the notion that the default confrontation between competent peers does not produce any influence since this condition did not differ from the control group in which participants were not confronted by any source of influence. In the same way, a conflict of competencies does not produce deep processing of the task and does not lead to any performance improvement (Butera & Mugny, 2001; Quiamzade, 2007; Selimbegovic, Quiamzade, Chatard, Mugny, & Fluri, 2007). However, the absence of influence in the confrontation between competent peers is not unavoidable. A competent source can obtain influence on a competent target if the target’s implicit representation of the properties of the aptitude task is transformed. The change has to evolve from a default representation in which different answers are incompatible (the wrongness of one being the sine qua non condition of the correctness of the other) to a representation in which different answers can be partially correct at the same time. Studies 1 and 2 confirmed this prediction. In contrast with the default confrontation between competent peers, the introduction of a
decentring procedure, which aimed to change the representation of the task, allowed influence to appear. Finally, a change in the representation of the task does not benefit the task in terms of contributing to a greater overall effect that is not in association with the conflict of competencies. It is vital that the source’s competence level indicates a potential for its answer to be correct. If the source is not competent, as shown in Study 3, a modification of the representation of the task does not allow any influence to be produced. This suggests that the lack of influence resulting from a problematic representation of the task corresponds to situations in which the source has the same high level of competence as the target.

Study 4 shows that a direct change in the social comparison context has the same effect as a change in the representation of the task. It suggests that the representation of the task is linked to social comparison. By default the representation of the task determines a threatening social comparison context, where diverging competent peers cannot be competent at the same time. This is what blocks social influence. Finally, Study 5 demonstrates that the blockage of influence in conflict of competencies is due to a threat. It is the way the competent peers consider that the other has to be wrong (to ensure correctness of the self) which is the key dimension behind the threat induced by the default representation of the task and the consequently negatively interdependent social comparison context.

Threat is often linked to other psychological processes which could be seen as interfering here, making the conflict of competencies more complex than it initially appeared. In particular, one could suppose that decentring reduced participants’ self-confidence about one’s own competence because the decentring task illustrated that their own answer (“a fish”) was wrong or at best partially correct. Given that the more people feel competent, the less they are influenced (as is the case of strong attitudes; see Petty & Krosnick, 1995), reducing self-confidence might reduce the resistance to influence. Although such a consideration can be aroused by taking apart each study or manipulation, the whole pattern of data is not fully explained according to the converging effects of the different manipulations. The hypothesis that self-confidence would decrease with decentring is not supported by the condition in Study 2 in which the opposed information was given. Although participants saw that their answer in the decentring task was wrong, which should have decreased their confidence, they were, however, not influenced in this condition. Moreover, if self-confidence decreases because one’s answer is wrong, the credibility of the source should decrease in the same way. Due to the fact that the source’s answer is also wrong (“a woman”), one should not expect the source to obtain any influence like if the source is of low competence. However, Study 3
showed that decentring produced no influence when the source was of low competence, whereas decentring had a liberating effect on the source’s influence when the source was as competent as the participants. Nevertheless, eliminating complex processes of threat management in the present studies does not exclude the possibility of them contributing to the processes involved in the conflict of competencies. More studies are needed in this area to investigate possible self-confidence reduction effects.

The results lead us to several more comments on situations involving the conflict of competencies and our laboratory studies. Firstly, our participants were not confronted with a source corresponding to their own objective competence level but rather to a source whose competence level was assessed by a bogus feedback. For this reason, one should note that in the conflict of competencies, it is people’s impressions of their own and others’ competence which is determinant and not objective competencies. Thus, even if the focus is on high competence peer confrontations, it may be worthwhile to consider the dynamics involved with people of lower competence levels or different objective competence, a context in which people could believe they are as competent as the other is. There are subjective biases in perceived self-competence, for example, the superior conformity of the self (Codol, 1975), the better than average effect (Allison, Messick, & Goethals, 1989) or the belief that one is competent even when one is not (Kruger & Dunning, 1999). These biases could lead individuals to perceive that they are trapped in a conflict of competencies even though their actual competence is objectively low or at a different level compared to the other. For example, Lemaine and Kastersztein (1971-72) produced the same asymmetrical estimation of competencies we found in Study 4, but in a situation where the other was slightly better. As a consequence, a conflict of competencies may arise even in situations in which competencies are not necessarily identical.

Secondly, this type of conflict may have large ecological validity because it can be observed in different ways and in rivalry situations, from mystical curers and magicians’ practices (Golomb, 1986) to the classic debates between scientists where different sides defend their own theories (Brenner, 1990). In the latter case, the problem of the implicit representation of the task and its beneficial transformation may be highly relevant in terms of scientific stagnation versus progress. In a given situation scientists are subject to contradicting forces whose influences oppose one another. Resistance from conservative scientists, i.e. defending their own theories, is an obstacle that hinders reaching a consensus that lay epistemology posits in science and therefore is an obstacle to progress.
Thirdly, one could argue that a change in the representation of the task or in the social comparison context are two phenomena that do not readily appear in real-life situations (but see Abbate, Isgrò, Wicklund, & Boca, 2006) and that more often than not, a lack of influence between competent peers is observed. By default a conflict of competencies does not lead to any influence. As argued by the physicist Planck (1949), scientists often do not triumph by convincing others, but rather because their opponents die and a new generation of scientists grow up with the idea and then agree with it. To show that a modification in the representation of the task through decentring allows influence would not have been of interest had such modifications failed to be produced spontaneously. Real settings may offer the possibility of spontaneously decentring. For example, contradicting scientific ideas can sometimes contribute to real progress when a scientist benefits from decentring, i.e., discovers that opposing ideas or data are actually compatible and can be articulated into a single proposition. This is often observed in contexts in which real -recognized progress- has been made. The most famous example in social psychology may be that of Zajonc (1965; Zajonc & Sales, 1966) who integrated seventy years of contradictory work on social loafing and social facilitation. Many other examples of complementarity between a priori contradictory scientific positions exist in social psychology (e.g. Quiamzade, Mugny, Pérez, & Alonso, 2003), and in other scientific domains, such as Maxwell’s (1873) unification of thermodynamics laws, or Dobzhansky (1937) and Huxley’s (1942) reconciliation of dozens of biological arguments spanning nearly forty years, resulting in the synthetic view of the evolutionary and genetic basis of populations. Finally, these considerations prompt us to make one last remark: the results above may pertain to the philosophy of science since they offer tools for interpreting scientific progress and stagnation. This consideration, however, is largely beyond the scope of this article. The contextual reasons leading (or failing to lead) to a reduction of threat which allows a change in the representation of the task or in the way one may consider social comparison in scientific debates still have to be highlighted.
References


Table 1. Study 1: Adjusted post-test means of tax rate (standard deviations in brackets)

<table>
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<th>Control condition</th>
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Table 2. Study 2: Adjusted post-test means of tax rate (standard deviations in brackets)

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<tr>
<th>Decentring instructions</th>
<th>With task</th>
<th>Without task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No instructions</td>
<td>Opposite instructions</td>
</tr>
<tr>
<td></td>
<td>4.67</td>
<td>5.38</td>
</tr>
<tr>
<td></td>
<td>(1.38)</td>
<td>(0.97)</td>
</tr>
<tr>
<td></td>
<td>4.52</td>
<td>5.33</td>
</tr>
<tr>
<td></td>
<td>(1.17)</td>
<td>(0.81)</td>
</tr>
</tbody>
</table>
Table 3. Study 3: Adjusted post-test means of tax rate (standard deviations in brackets)

<table>
<thead>
<tr>
<th></th>
<th>High competence source</th>
<th></th>
<th>Low competence source</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With decentring task</td>
<td>Without task</td>
<td>With decentring task</td>
<td>Without task</td>
</tr>
<tr>
<td></td>
<td>4.25</td>
<td>5.20</td>
<td>4.96</td>
<td>4.99</td>
</tr>
<tr>
<td></td>
<td>(1.33)</td>
<td>(0.80)</td>
<td>(0.92)</td>
<td>(1.04)</td>
</tr>
<tr>
<td></td>
<td>Negative interdependent social comparison</td>
<td>Independent social comparison</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------</td>
<td>------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With decentring task</td>
<td>4.62</td>
<td>4.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1.41)</td>
<td>(1.07)</td>
<td>(0.85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without task</td>
<td>5.42</td>
<td>4.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1.07)</td>
<td>(0.69)</td>
<td>(0.69)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5. Study 5: Adjusted post-test means of tax rate (standard deviations in brackets)

<table>
<thead>
<tr>
<th></th>
<th>Affirmation procedure</th>
<th>No affirmation procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>4.34</td>
<td>5.13</td>
</tr>
<tr>
<td></td>
<td>(1.44)</td>
<td>(.94)</td>
</tr>
</tbody>
</table>
Figure 1. Mediation analysis

\[ \beta = .36^* \]

Affirmation \[ \rightarrow \] Wrongness \[ \rightarrow \] Post-test

\[ \beta = -.42^* \]

* At least \( p < .05 \)
Notes:

1 One experiment has shown that in some circumstances imitation can appear. Since imitation appeared to be linked to self-enhancement strategies, it is however not considered to be true imitation leading to interiorisation (Quiamzade, 2007).

2 The notion of “representation” is defined as laypeople’s knowledge or beliefs about the tasks which function as epistemic principles determining specific expectations and guiding people’s judgments and behavior (see Pérez & Mugny, 1993, 1996; Quiamzade, Mugny, Falomir-Pichastor, & Butera, in press).

3 Since sex differences do not appear in any of the studies, this variable will no longer be considered.

4 In each experiment participants came to the laboratory alone or by groups of two to four. In this last case, they were separated in individual boxes so that they could work alone. This variable had no impact on the results. This is the case for all of the experiments. Therefore it will no longer be considered.

5 A pilot study (N = 18) showed that when answering the questions of the bogus economics task, participants estimated that they correctly completed 4.39 (SD = .92) questions, which is superior to half of the total 6 questions, \( t(17) = 6.43, p < .001 \), and inferior to the maximum, \( t(17) = 7.45, p < .001 \). In other words, a feedback indicating to the participants that they are excellent but not perfect is congruent with their subjective impression of self-competence.

6 In fact, six participants who found the mermaid were eliminated from the analysis because they may have been more likely to assume that they did not need to look at the others’ answers to solve the subsequent tasks. For this reason, they might not have experienced the decentring context in full. Each participant who found the mermaid in the decentring condition was replaced by a new participant. Indeed, as we suspected that the control condition would show lower variance than the experimental conditions, especially the one where influence was expected, we replaced these participants until we obtained equal Ns in order to eliminate the impact of the differences in variances.

7 In the control group, some participants changed their position but most participants did not. The former participants’ behavior can be interpreted as the result of the implicit experimental demand in which we asked them to answer the same question twice. We then expected a very low variance in the control group. Levene’s test of homogeneity of variance showed that indeed a difference in variances appeared \( L(13, 61) = 3.97, p < .001 \). However the Ns are equal between cells. Therefore the only consequence due to variance heterogeneity is an increased of alpha error and a bias is excluded here (Tomarken & Serlin, 1986).

8 Results about change (post-test minus pre-test) produce exactly the same results. These results reveal that participants in the decentring condition were more influenced by the source (\( M = 0.56, SD = 1.33 \)) than the participants in the other two conditions (\( M = -0.07, SD = 1.21 \) and \( M = 0.00, SD = 0.71 \), for the experimental condition without decentring and the control condition, respectively), \( \beta = .25, t(72) = 2.17, p < .04 \). Moreover, change was significantly different from 0 in the former condition, \( t(72) = 2.11, p < .05 \), but not in the latter. The conflict of competencies thus results, as expected, in no influence at all. This applies to all of the studies: analysis on change always produces the same results as the analysis on post-test measure, and significant absolute positive influence always appears where it can be expected, and only there.

9 To avoid losing participants who would find the correct solution (the mermaid), the exposure time of the drawing was reduced from one second to 0.6 seconds. No participants found the mermaid this time. However, eight participants did not have enough time to figure out what the object on the drawing was and did not respond. These participants were eliminated since they did not answer and were less likely to have understood that they could be partly correct.

10 Because of an electrical problem when running the software on computers for two participants in a session, they were not able to go to the end and thus did not answer this specific question.

11 As the content of one of the Vernon and Allport’s values was about the economy and our own material was supposedly about the same content in the alleged reasoning tasks, to avoid interference of the feedback results and this value, we deleted it and replaced it with sport. The six values presented were art and culture, social relationship, religion, politics, work and finally sport.