

Mindsets and social comparison: Being aware of the competitor

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Abstract

The mindset theory posits that people have less favorable beliefs while deliberating on actions or goals than while planning and implementing them. This is thought to be a self-regulatory mechanism that helps people choose reasonable goals, on one hand, and persist in goal pursuit, on the other. In the present experiment we tested the hypothesis that the beliefs of implemental participants differ from those of deliberative ones only in case that favorable views would not set them up for failure and disappointment. Participants in a deliberative or in an implemental mindset were asked to compare with two other persons with respect to a set of achievement-related activities. They were also told that they would have to compete with one of these persons in a motor-skills task. It could be shown that the participants generally tended to rate the comparison targets as being worse off. As in former experiments, this tendency was, however, reduced in deliberative participants. In addition, it was reduced in implemental participants when they expected to compete with the comparison target later on. Implemental participants did thus have more favorable views than deliberative ones only if they had not to compete with the comparison target. This seems to be a good strategy to enhance the feelings of one's own competence without running the risk of failure and embarrassment.

Key words: mindsets, action phases, social comparison, competition

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If people have to evaluate personal prospects or possible risks, they usually tend to reveal a comparative optimism. They rate their own chances more favorably than those of other people and believe that their abilities are above average (Svenson, 1981; Taylor & Brown, 1988). This kind of social comparison may enhance self-esteem and has beneficial effects on attention, goal setting, and problem solving as well as on physical and mental health (see Armor & Taylor, 1998; Aspinwall, Richter, & Hoffman, 2001; Aspinwall & Taylor, 1997 for review and discussion). The need to enhance one's self-esteem or to maintain a positive sense of the self (self-enhancement) (Taylor & Brown, 1988; Tesser, 1988) is, however, not the only goal of social comparison. Since social comparison has been assumed to satisfy a number of personal needs, three main motivational processes have been discussed to underlie the engagement in it, as well as to determine its direction (e.g. Wayment & Taylor, 1995; Taylor, Wayment, & Carrillo, 1996). Festinger (1954) proposed that a motivation to evaluate one's own abilities and opinions drives people to rely on social-comparison information especially in cases when no absolute standards are available. Traditionally, it has been accepted that social comparison serves this need for accurate self-appraisal and meets it through a comparison with similar others (lateral social comparison). The above mentioned need for self-enhancement is supposed to be met through a second motivational process called downward social comparison. That means that people compare themselves to others whose performance is worse than their own. Third, social comparison could aim at improving oneself (Wood, 1989) and this need for self-improvement seems to be best met by a comparison to those whose outcomes are better than one's own (upward social comparison) (Taylor, Wayment, & Carrillo, 1996). It is important to consider that upward, downward and lateral social comparisons can not only manifest themselves in the choice of a comparison target, but they can also find an expression in the evaluation and description of a given person one is being compared to.

As mentioned above, people generally tend to rate their own prospects more favorably than those of other people. Does this mean that they are exclusively guided by self-enhancement needs? Taylor and Gollwitzer (1995) have found support for the hypothesis that they are not. In a set of experiments they could show that people were less inclined to engage in downward social comparison when they were deliberating on potential actions and goals as compared to when they were planning or implementing them. This finding is in line with the mindset theory (Gollwitzer, 1990; Gollwitzer & Bayer, 1999). Mindsets are conceptualized as cognitive orientations associated with the different action phases and functional for the aims characteristic for each of them. As such, mindsets are supposed to enable and facilitate the fulfillment of the different tasks that people confront before and after they have met a decision. People deliberating on which action to take or which goal to pursue reveal the so-called *deliberative mindset*. The purpose of this state of mind is to maintain an objective and accurate evaluation of one's own abilities in order to set realistic and approachable goals. People in a deliberative state of mind consider the advantages and disadvantages of alternative actions, as well as the accessibility of potential goals in a well-balanced manner. The deliberative mindset thus contributes to preventing people from choosing and stating too difficult goals they then cannot achieve. In this sense, the motivation to self-assess and self-improve should prevail when people are deliberating and it thus promotes lateral or upward social comparisons. After having made a decision and chosen a goal, people proceed to an *implemental mindset*. This mindset provides for an optimistic attitude and fuels self-assurance and positive mood. Thereby it facilitates the successful realization of the chosen

goals and keeps away uncertainty and dysfunctional doubts, which could endanger it. It can be expected that the prevailing motivation associated with the *implemental mindset* is self-enhancement. People in this state of mind should therefore be more inclined to engage in downward social comparison than deliberative mindset people. With the present experiment we wanted to test the hypothesis that this, however, will not always be the case.

Puca (2004) hypothesized that implemental people reduce their optimistic attitudes when being overly optimistic would bring them into trouble. Some of the potential pitfalls of implemental participants' favorable beliefs have been discussed for optimism in general (for reviews see Armor & Taylor, 1998; Radcliffe & Klein, 2002). One pitfall relevant for implemental participants is that unrealistic high expectations are more likely to be disconfirmed than realistic ones. Disconfirmation could lead to negative feelings, which are maladaptive for the effective task fulfillment. If high expectations are stated in public and can be objectively evaluated, one additionally runs the risk of compromising oneself. Puca (2001) tested participants' subjective probability of success in deliberative and implemental states of mind. She could show that implemental participants were more optimistic than deliberative ones only on an implicit measure of subjective probability, but not in their explicit performance predictions. This implicit measure reflected the private expectations of the participants. It was derived from the time needed by the participants to predict whether or not they would be successful at a given trial of a motor-skills task. The explicit measure consisted of the number of explicit success predictions. These explicit predictions of the kind "I will succeed in this trial" are associated with a higher risk because they imply a public statement that can be verified and disconfirmed. Thus, implemental participants tended to avoid this risk.

Another pitfall of implemental optimism is associated with the fact that mindsets are not necessarily task-specific but rather general cognitive orientations. Mindset effects possess the ability of generalizing on tasks and actions not associated with their induction (Gollwitzer & Bayer, 1999). It has been repeatedly demonstrated that implemental people are not only optimistic when striving for the goals they choose, but also have favorable beliefs concerning subsequent or parallel actions or goals. For example, Gagné and Lydon (2001) tested participants who were in a predecisional (deliberative) or in a postdecisional (implemental) action phase with respect to the choice of an university program. In this study, implemental participants as compared to deliberative ones made overly optimistic predictions when asked how long they expected their romantic relationship to last. The danger associated with this mindset transfer to unrelated tasks implies the possibility of making risky choices or setting exaggerated goals for parallel or subsequent actions while in an implemental state of mind.

Puca (2004) found, however, that implemental people even though more optimistic than deliberative ones did not make more risky choices. Participants randomly assigned either to the deliberative- or to the implemental-mindset condition were asked to set themselves a goal for a motor-skills task they had just become acquainted with. In addition, they had to state their confidence in attaining this goal. In accordance with the predictions, implemental optimism did not express itself in goal setting. Implemental participants were still more confident in reaching their goals than were deliberative ones. Thus, they experienced more positive feelings (confidence) without running the risk of setting exaggerated goals that they couldn't achieve.

To examine the effects of the mindsets on social comparison, Taylor and Gollwitzer (1995) induced deliberative and implemental mindsets by asking people either to name a personal decision problem (deliberative) or a personal project (implemental). Participants

then had to compare themselves to an average person with respect to various controllable and uncontrollable risks. It could be shown that participants tended to engage in downward social comparison. They believed that they were less vulnerable to health risks and negative events than the average person. The tendency for downward comparison was less pronounced in deliberative than in implemental participants. This kind of downward social comparison did not imply a great risk, anyway. First, it was not possible to check objectively whether participants were actually more or less at risk than the average person. Second, there was no immediate danger that the participants' tendency to involve in a downward comparison would affect their self-regulative behavior because no relevant subsequent actions were required within the study.

What would, however, happen if considering other people to be worse off could bring one in danger? Exclusive downward social comparisons could sometimes jeopardize successful task fulfillment and endanger self-esteem and self-presentational aims. If one underestimates, for example, one's opponent, one runs the risk of underestimating the efforts necessary to outperform him or her, as well. Thus, downward social comparison may augment the objective probability of failure. In addition, failure may become even more aversive if people loose against an opponent they previously described as less competent than themselves. We therefore predict that not only deliberative states of mind should reduce people's tendency for downward comparison but also the prospect of competition with another person. As a consequence implemental participants are expected to differ from deliberative ones in their social-comparison strategy only if they will not have to compete with the comparison target. Specifically, if implemental participants are given the opportunity to compare with people with whom they will not have to compete, they engage more in downward comparison than deliberative participants. That means they will perceive the abilities of "irrelevant" other people as worse off in order to meet their own self-enhancement needs. In contrast, when implemental participants have to compare themselves with a future competitor, the need to stay as accurate as possible in one's self- and other-evaluations will prevail and they will thus be as cautious as deliberative participants. The first purpose of this study was to test this presumption. The second option was to examine whether implemental participants' tendency to involve in a downward comparison can be explained in terms of a general tendency to assign negative attributes to other people.

Method

Participants

A total of 52 (43 female) persons between 18 and 40 years participated in the experiment. Their mean age was 24.88 ($SD = 5.78$). Most of them were psychology majors, who received course credit for their participation. Of the 52 participants 26 were randomly assigned to the deliberative-mindset condition and 26 to the implemental-mindset condition.

Procedure

A female experimenter tested participants individually. At the beginning of the experiment participants were asked to work on a challenging motor-skills game, which constituted the basis for the competition announced later on. This game was based on traditional follow-the-wire games, which can only be mastered by a steady hand. With a handle in one hand participants had to follow a wire with several loops from its left to its right end and back again. They had to repeat this for two minutes as many times as possible and without touching the wire. After participants had completed this task, they obtained feedback about their absolute performance result.

They were then randomly assigned to the different mindset conditions. Mindsets were induced with the help of a technique frequently used in this area of research (e.g., Gollwitzer & Kinney, 1989; Taylor & Gollwitzer, 1995; Puca, 2004). Participants were told that they now had to work on a different task. In the deliberative group they had to name an unsolved problem in their lives. They then had to list some possible negative and positive consequences of making a specific decision. Participants in the implemental group had to name and describe a planned or ongoing project in their lives. They then had to list some important steps necessary to carry out the project.

After completing this task, participants were told that there would be a second run in the follow-the-wire game and that they would have to compete in it with another person. They were then informed that we were interested in their ideas about their future competitor and about a second person who would represent the competitor of another participant. For this purpose we showed them vague descriptions of two persons of the same sex as their own. In the following we call the described person *competitor* when he or she was introduced as the participant's competitor and *non-competitor* when he or she was introduced as a competitor of another participant. After they had read the first description, we asked the participants to imagine the personality of the respective person. Offering only vague descriptions of comparison targets is a common method in research on social comparison. In the study of Taylor and Gollwitzer (1995) participants had to evaluate themselves and an average college student. The comparison-target, thus, constituted a hypothetical other and may for this reason have represented a product of the participants' imagination (for a discussion see Wood, 1996). In the present experiment, we tried to make the construction of the comparison targets more transparent. Therefore we asked the participants to describe their ideas of the two comparison target persons by using a total of 30 adjectives (10 positive, 10 neutral, and 10 negative), which were not achievement related. The participants had to think about the respective person and to check those 10 of these adjectives which they thought would describe that person best. Then, they proceeded in the same way with the second target person. Competitor and non-competitor were introduced in random order. This procedure enabled us to test whether participants in different action phases tend to construct comparison targets in a generally positive or negative manner. Since these adjectives were not achievement- but only personality-related, we would be able to find an answer to the question if the implemental mindset could be associated with a fundamental tendency to devalue other people's qualities and their personality characteristics in general or if its effects are more differentiated and adaptable.

The "constructions" of the competitor and the non-competitor were followed by the social-comparison task. Participants had to compare each competitor and non-competitor to

themselves using a list of ten achievement-related activities. After completing this social-comparison task, participants were asked whether they had thought of a specific person they knew when figuring out what the competitor or the non-competitor would be like.

Apparatus and Materials

Follow-the-wire game. The game consisted of a wire with several loops that was attached to a wooden panel at both its ends. The participants had to move a wooden handle with a metal ring at the top along the wire, which went through the ring. A little lamp was connected to the wire and the ring. Every time the ring touched the wire an electric circuit closed and the lamp lit up. The lamp also lit up when one end of the wire was reached.

Short Personality Descriptions. For the social-comparison task the participants were presented with two file-cards containing information about their competitor and the non-competitor, respectively. On each card the first letter of the target's last name was printed (Mr. or Mrs. M for the competitor and Mr. or Mrs. O for the non-competitor). In addition, three neutral personality adjectives, which were taken from a study by Wentura, Rothermund, and Bak (2000), were printed on the card. These were not achievement related ("modern", "complicated", and "harmless", or "normal", "theoretical", and "gingerly"). Information about the competitor's or non-competitor's favorite color ("turquoise" or "orange"), his or her favorite vacation area ("Italy" or "Greece"), and his or her favorite quiz show ("Das Quiz" or "Wer wird Millionär" ["The Quiz" or "Who Becomes Millionaire"]) was available, too. These pieces of information were randomly assigned to the competitor and to the non-competitor respectively.

Personality adjectives. Ten positive, ten neutral, and ten negative adjectives were presented to the participants for describing the competitor's or the non-competitor's personality, respectively. These were standardized adjectives taken from a study by Wentura et al. (2000). They are presented in Table 1.

Table 1:

Personality adjectives for the construction of the comparison targets. The participants had to think about the respective person and to check 10 of these adjectives which they thought would describe that person best

positive	negative	neutral
relaxed	insulting	strenuous
friendly	unimaginative	busy
imaginative	hostile	curious
considerate	intolerant	realistic
shows solidarity	isolated	reserved
independent	perfidious	systematic
carefree	dependent	unobtrusive
versatile	antisocial	choosy
warm-hearted	embittered	absent-minded
affectionate	compulsive	guarded

Social comparison. For the social-comparison task, the participants were presented with a list of ten activities. Two of them were directly related to the follow-the-wire game and the remaining eight activities were generally achievement related but not related to the game. At the top of the list the participants read, for example, the sentence "What do you imagine is Mrs. M like as compared to you?" There were three answer options: "worse than me", "as good as I am" and "better than me." The participants had to check with regard to each activity which of these options fitted best. The list of activities can be seen from Table 2.

Table 2:

A list of the achievement-related activities for the social-comparison task. The participants had to state for each activity or skill whether they thought that the competitor and the non-competitor were worse off, as good as or better than they were

Achievement-related activities and skills
Number of trials in the motor-skills task
Number of mistakes in the motor-skills task
Arithmetic
Verbal competence
Solving complex problems
Learning a foreign language
Sports
Teamwork
Handcraft skills
Finding a way in an unfamiliar environment

Results

Manipulation Check

Mindset Manipulation. Of the 52 participants 21 wrote about career-related goals, 14 described life-style-related goals and 17 described goals concerning interpersonal relationships. All participants rated their goals as rather important. On a scale ranging from 1 (not important at all) to 6 (very important) the mean was $M = 4.96$ ($SD = 1.36$). The importance of the goals did not vary by goal domain or mindset, all $F_s < 1$.

Imagining the competitor and the non-competitor. Only four of the deliberative- and five of the implemental-mindset participants thought of friends or acquaintances when describing the competitor. As the descriptions of the non-competitor are concerned, three participants in the deliberative condition and six in the implemental condition thought of people they knew. To test whether deliberative and implemental participants differed in their descriptions of the competitor's and the non-competitor's personalities the data (number of adjectives checked) were subjected to a mixed-design $2 \times 2 \times 2$ ANOVA. This analysis considered one between-group factor and two repeated-measures factors. The between-group factor was the Mindset condition (deliberative/implemental), and the repeated-measures factors were the Valence of the adjectives (positive/negative) and the Status of the person to be described (competitor/

non-competitor). This analysis revealed only a significant main effect for the Valence. There was no effect of the mindsets on the personality ratings at all. Both deliberative and implemental participants attributed more positive than negative adjectives to both competitor and non-competitor, $F(1,50) = 63.63$, $p < .001$, $\eta^2 = .56$. The means were $M = 3.42$ ($SD = 1.21$) for the positive adjectives and $M = 1.42$ ($SD = 0.82$) for the negative adjectives.

Social comparison

To obtain a measure of social comparison participants' ratings for the achievement-related activities were first coded and then summed up. When the participant had checked the option "the competitor/non-competitor is worse than me", -1 was coded. Zero was coded when the participant checked "the competitor/non-competitor is as good as I am", and 1 was coded if he or she thought that the competitor/non-competitor was better off.

The ratings for the competitor and the non-competitor were summed up separately and the sum of the ratings was taken as a measure of social comparison. A negative sum resulted if a participant saw him- or herself as being superior to the other person (competitor and non-competitor, respectively) more often than equal or inferior. A negative sum thus indicates downward social comparison. In contrast, a positive sum resulted if a participant saw the other person as being superior more often than as being equal or inferior. Consequently a positive sum indicates upward social comparison.

The two items concerning the follow-the-wire game and the eight achievement-related items were analyzed separately for two reasons. First, we expected that participants' ratings are influenced by their prior performance when they have to compare their ability for the game with the target persons' one. We therefore used participants' prior performance as a covariate when analyzing mindset-effects on the follow-the-wire game ratings. Second, in contrast to the eight achievement-related items, participants' ratings for the follow-the-wire-game items could be tested objectively. It has been repeatedly shown that there is less room for optimism when predictions and performance ratings can be easily disconfirmed (see Puca, 2004 for a discussion).

The summed up evaluations of the two follow-the-wire-game items were subjected to a 2 x 2 mixed design ANCOVA with Mindset condition as a between-group factor and Status of the target (competitor/ non-competitor) as a repeated-measures factor. Two measures of participants' prior performance were used as covariates. These were the number of trials they achieved and the number of mistakes they made. This ANCOVA revealed a significant interaction between Mindset condition and Status of the target, $F(1,48) = 4.83$, $p < .05$, $\eta^2 = .09$ (see Table 3). An inspection of the descriptive statistics showed that means were positive in the deliberative-like in the implemental-mindset group. Thus, neither deliberative nor implemental participants tended to downward comparison for the follow-the-wire-game items. The interaction results from the finding that implemental participants' ratings were a bit less positive for the non-competitor and a bit more positive for the competitor than deliberative participants' ratings. Separate ANCOVAs showed, however, that the difference between implemental and deliberative participants reached significance neither for the comparison with the competitor, $F(1,48) = 1.17$, n.s., nor for the comparison with the non-competitor, $F(1,48) = 2.62$, n.s.

Table 3:

Mean comparison scores for participants in deliberative and implemental states of mind evaluating the competitor’s and non-competitor’s competency in the follow-the-wire-game. Positive scores indicate that in sum the participants rated the comparison target as being better than they are.

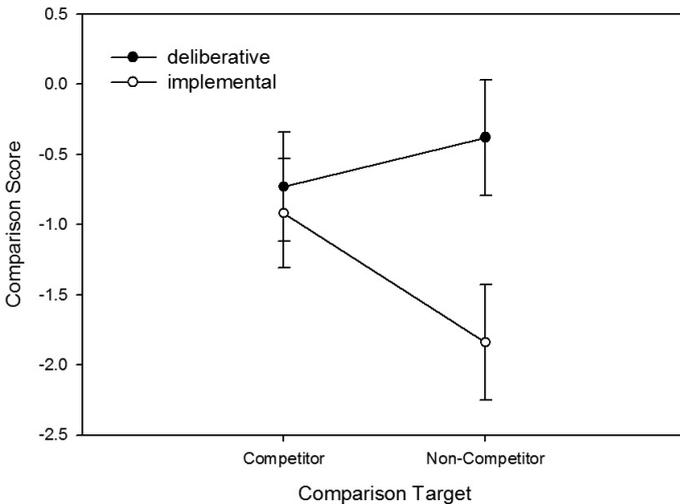
	Mindset			
	Deliberative (<i>n</i> = 26)		Implemental (<i>n</i> = 26)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Competitor	.58	.65	.81	1.07
Non-Competitor	.91	.88	.44	.99

Note. The number of trials participants achieved and the number of mistakes they made in the game are used as covariates. The means are adjusted for these covariates.

To analyze the sum of the evaluations of the eight achievement-related items, we used a 2 x 2 mixed design ANOVA with Mindset condition as a between-group factor and Status of the target (competitor/ non-competitor) as a repeated-measures factor. This analysis revealed a significant interaction between Mindset condition and Status of the target, $F(1,50) = 4.30$, $p < .05$, $\eta^2 = .08$ (see Figure 1). As predicted, the evaluation of the non-competitor was more negative for implemental than for deliberative participants, $F(1,50) = 6.10$, $p < .05$, $\eta^2 = .11$. There was, however, no difference between the two mindset groups when the competitor was evaluated $F(1,50) = .12$, n.s.

Figure 1:

Mean comparison scores with standard errors for participants in deliberative and implemental states of mind evaluating competitors and non-competitors in eight achievement-related activities. Negative scores indicate that in sum the participants rated the comparison target as being worse than they were.



Discussion

The present results are consistent with the prediction of Gollwitzer's mindset theory that positive illusions vary in the course of action (Gollwitzer, 1990, 1991). To date, several studies have demonstrated that people display less positive illusions and less favorable expectations while deliberating on actions or goals than while planning or implementing them (e.g. Gollwitzer & Kinney, 1989; Gagné & Lydon, 2001; Puca, 2001; Armor & Taylor, 2003). In the present experiment, deliberative participants' perceived superiority over a comparison target was reduced as compared to that of implemental participants. A similar reduction of the favorable beliefs of deliberative participants has been observed in a study by Taylor and Gollwitzer (1995). The present study goes, however, beyond this finding by demonstrating that implemental participants can sometimes suspend their favorable views, too. As expected, implemental participants engaged in less downward comparison when they were told that they would have to compete with the comparison target person later on.

This finding is in line with recent results of a study by Puca (2004) showing that implemental participants are optimistic in a way that does not set them up for failure and disappointment. Beliefs of superiority over others can enhance or maintain self-esteem and can, therefore, be beneficial for efficient goal pursuit. These beliefs bear no risk if one feels superior to people with whom one will not have to compete. If the comparison target is, however, a future opponent, beliefs of superiority may be detrimental because of the risk of underestimating the effort necessary for the competition. This may lead to negative feelings in two ways. First, if people don't make an effort, they won't succeed in surpassing their competitor. Second, a failure may be most embarrassing when people have explicitly stated that they are better than their competitor.

The hypothesis that implemental participants engage more in downward comparison than deliberative ones when the target is no opponent could not be supported for the items that referred to the follow-the-wire game. Like deliberative participants, implemental participants did not engage in downward social comparisons when they had to compare their ability in the game with that of both target persons. Nevertheless, participants' ratings were biased by their mindsets. Implemental participants tended to rate the non-competitor a bit less positive than the competitor. It is not surprising that participants did not show downward social comparison concerning the game because participants' achievement in this game could be tested objectively. This result is in line with the notion that people tend to make less optimistic predictions when these predictions can be easily tested (e.g. Shepperd, Ouellette, & Fernandez, 1996; Armor & Taylor, 1998; Puca, 2001). The participants did not have to compete with the non-competitor directly but they believed that there would be results available for that person, too, because he or she had to play the game as well.

To summarize, even though mindset effects could also be observed on the ratings of the follow-the-wire game, downward social comparison was demonstrated only for those achievement-related activities that could not be tested objectively in the present experiment. Implemental participants engaged more in it than did deliberative ones. This was, however, only the case when they had to evaluate a person against whom they did not have to compete later on. Thus, people seem to adapt their beliefs not only to the different action phases, but also to different situational demands within these phases.

For an appropriate interpretation of the present findings, the method used to induce the implemental and deliberative mindsets should be taken into account. In our study, we asked

the participants in the deliberative group to name a personal decision problem and in the implemental group to name a planned project. Later on they had to compare two persons to themselves with respect to several achievement-related activities. This comparison had nothing to do with the named problem or project. Nevertheless implemental participants showed more downward social comparison with respect to the non-competitor than did deliberative participants. As mentioned above, several studies have shown that mindset effects induced in this way generalize to tasks that are not responsible for their induction (e.g. Taylor & Gollwitzer, 1995; Gagné & Lydon, 2001; Puca, 2004). Taylor and Gollwitzer (1995) pointed out that mindsets include two kinds of cognitions. First, these are cognitions that are specific to the decision problem or the planned project. Second, these are more general cognitions that constitute optimal conditions for deliberation and implementation respectively. In this sense the mindset transfer to an unrelated task may be functional because it can have an effect back on the original deliberation or implementation. For instance, the implemental mindset biases people's cognitions in a way that they believe they can reach their goal as well as in a way that allows them to have a positive self-view in general. It can enhance participants' general self-appraisal if they see others as being worse off. This may also be helpful for the implementation of the original task. In our study participants saw only the non-competitor as being worse off but not their future competitor. This is in line with our predictions because seeing the competitor as being worse off bears the risk of negative feelings. It may be embarrassing if participants lose against a person they have previously rated as being less competent than they are. This feeling of embarrassment may undermine the pursuit of the original project. In sum, the present data again support the notion that mindsets are general cognitive orientations and as such do not only affect specific tasks.

In studies concerning the mindset theory, some possible mediating mechanisms for the mindset effects have been discussed. In the present experiment, it has been tested whether implemental participants' tendency to involve in a downward comparison could be explained in terms of a general tendency to see other people in a negative light. It could, however, be shown that implemental participants did not differ from deliberative ones when they had to choose among a number of non-achievement-related adjectives in order to simply describe the target's personality. Since mindsets are thought to be flexible, adaptable and functional, mindset effects are not expected to be undifferentiated. For instance, it would not necessarily enhance implemental participants' self-esteem if they perceived other people as intolerant or hostile. Sometimes goals cannot be implemented without the help of other people. If the implemental mindset would generally predispose people to see others in a negative manner implemental participants could have problems to ask others for help if necessary.

It has not been tested in the present experiment whether participants' emotional states that may have been manipulated through the mindset induction could be responsible for the mindset effects on social comparison. Implemental action phases could favor positive emotional states, which in turn could be the reason for the postdecisional optimism. While some evidence does exist that postdecisional participants experience more positive emotions than predecisional ones, the findings concerning this phenomenon are neither uniform, nor clear. Taylor and Gollwitzer (1995), for example, could show that postdecisional participants reported more positive feelings than their predecisional counterparts. A mediator analysis did not allow the conclusion, however, that these feelings could be considered to mediate between the experimentally manipulated action phases on one hand and the risk ratings on the other. Other studies found no differences between pre- and postdecisional participants con-

cerning their emotional states at all (Brandstätter & Frank, 2002; Puca, 2004). In sum, negative emotions can not be considered a necessary constituting part of the deliberative mindset, nor could positive emotions be considered to be a necessary constituting part of the implemental mindset.

Our findings that implemental participants felt more superior to a comparison target person against whom they wouldn't have to compete leaves room for two possible interpretations. On the one hand, the implemental mindsets might have biased the self-evaluation of the participants, and thus, have lead to self-enhancement. In that case participants would have appraised themselves as particularly good with respect to the presented activities independent of their evaluation of the target. They would have felt better off, even if they had considered the target person to be quite good her- or himself. On the other hand, the other-evaluation might have been biased, as well, resulting in other-diminishment. This would have allowed participants to feel superior, while at the same time evaluating their own competence realistically. One can, for example, realize that one is not very good at a certain task and at the same time consider the comparison target person as being even worse off with respect to the same activity. Within our paradigm, we cannot come to any conclusion as to which one of the two possible interpretations is true. We think, however, that this is not essential for the examination of our hypothesis. As this hypothesis stated that implemental participants feel superior to other people more often when this cannot undermine successful goal pursuit, it concerns only the comparative self-judgment and not the absolute self- or other-evaluation. Nevertheless it would be informative to test in future experiments whether self-evaluation or the evaluation of comparison target persons is biased by implemental mindsets.

Conclusion

The present findings can be integrated in a broader context of research in which potential benefits and risks of optimism are considered (Armor & Taylor, 1998; Radcliffe & Klein, 2002). Within this research area optimism is supposed to have negative implications especially if it is not responsive to reality and the situational requirements. Taylor and Gollwitzer (1995) wondered whether this could also be true for the implemental mindset. They discussed that implementation might induce a form of tunnel vision, i.e. implemental participants could probably not take important information into account when making predictions about future events. The findings of the present experiment draw a step toward to an answer to this question. It provides further evidence that postdecisional optimism is not blind to the situational demands. Just as optimism can be reduced when people are deliberating, it can also be reduced in postdecisional action phases if it otherwise would bear risks for the successful goal attainment.

References

- Armor, D. A., & Taylor, S. E. (1998). Situated optimism: Specific outcome expectancies and self-regulation. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 30, pp. 309-379). New York: Academic Press.

- Armor, D. A., & Taylor, S. E. (2003). The effects of mindset on behavior: Self-regulation in deliberative and implemental frames of mind. *Personality and Social Psychology Bulletin*, 29, 86-95.
- Aspinwall, L. G., Richter, L., & Hoffman, R. R. (2001). Understanding how optimism “works”: An examination of optimists’ adaptive moderation of belief and behavior. In E. C. Chang (Ed.), *Optimism and pessimism: Theory, research, and practice* (pp. 217-238). Washington: American Psychological Association.
- Aspinwall, L. G., & Taylor, S. E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin*, 121, 417-436.
- Brandstätter, V., & Frank, E. (2002). Effects of deliberative and implemental mindsets on persistence in goal-directed behavior. *Personality and Social Psychology Bulletin*, 28, 1366-1378.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117-140.
- Gagné, F. M., & Lydon, J. E. (2001). Mind-set and close relationships: When bias leads to (in)accurate predictions. *Journal of Personality and Social Psychology*, 81, 85 - 96.
- Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and social cognition: Foundations of social behavior* (Vol. 2, pp. 53-91). New York: Guilford Press.
- Gollwitzer, P. M. (1991). *Abwägen und Planen. [Deliberating and planning]*. Göttingen: Hogrefe.
- Gollwitzer, P. M., & Bayer, U. (1999). Deliberative versus implemental mindsets in the control of action. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 403-422). New York: Guilford Press.
- Gollwitzer, P. M., & Kinney, R. F. (1989). Effects of deliberative and implemental mindsets on illusion of control. *Journal of Personality and Social Psychology*, 56, 531-542.
- Puca, R. M. (2001). Preferred difficulty and subjective probability in different action phases. *Motivation and Emotion*, 25, 307 - 326.
- Puca, R. M. (2004). Action phases and goal setting: Being optimistic after decision making without getting into trouble. *Motivation and Emotion*, 28, 121 – 145.
- Radcliffe, N. M., & Klein, W. M. P. (2002). Dispositional, unrealistic, and comparative optimism: Differential relations with the knowledge and processing of risk information and beliefs about personal risk. *Personality and Social Psychology Bulletin*, 28, 836-846.
- Shepperd, J. A., Ouellette, J. A., & Fernandez, J. K. (1996). Abandoning unrealistic optimism: Performance estimates and the temporal proximity of self-relevant feedback. *Journal of Personality and Social Psychology*, 70, 844-855.
- Svenson, O. (1980). Are we all less risky and more skillful than our fellow drivers? *Acta Psychologica*, 47, 143-148.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193-210.
- Taylor, S. E., & Gollwitzer, P. M. (1995). Effect of mindset on positive illusions. *Journal of Personality and Social Psychology*, 69, 213-226.
- Taylor, S. E., Wayment, H. A., & Carrillo, M. (1996). Social comparison, self-regulation, and motivation. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: The interpersonal context* (Vol. 3, pp. 3-27). New York: Guilford Press.
- Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 181-227). New York: Academic Press.
- Wayment, H. A., & Taylor, S. E. (1995). Self-evaluation process: Motives, information use, and self-esteem. *Journal of Personality*, 63, 729-757.

- Wentura, D., Rothermund, K., & Bak, P. (2000). Automatic vigilance: The attention-grabbing power of behavior-related social information. *Journal of Personality and Social Psychology*, 78(6), 1024-1037.
- Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, 106, 231-248.
- Wood, J. V. (1996). What is social comparison and how should we study it? *Personality and Social Psychology Bulletin*, 22, 520-537.

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