

Goal orientations and social comparison: The role of different motivations in affiliation preferences

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Abstract In light of previous findings that both task and ego orientations are related to engagement in social comparison, the present research aimed to investigate this association in depth by examining why and with whom task- and ego-oriented individuals engage in comparisons. In Study 1, we found that task-oriented individuals tended to prefer working with a high performer because they wanted to improve themselves. In Study 2, we provided participants with success or failure feedback before asking them to indicate partner preferences. In the face of failure, task-oriented individuals showed a preference for a high performer due to self-improvement motivation. On the contrary, ego-oriented individuals were more motivated to feel superior to others and/or less motivated to improve themselves, which in turn led them to prefer a less competent partner. The present research demonstrated that the seemingly identical relation between the two goal orientations and the tendency to engage in social comparison might be substantially different in nature.

Keywords Task orientation · Ego orientation · Upward comparison · Downward comparison · Social comparison

Introduction

Consciously or unconsciously, people often compare themselves with others and for different reasons. Although Festinger's (1954) original theory highlighted people's

desire for self-evaluation as a drive to social comparison, other researchers have identified additional motivations that may underlie the comparison process (Suls et al. 2002; Wood 1989; Wood and Taylor 1991). In particular, two specific motivations have received much attention: motivation to learn from others (i.e., self-improvement) and motivation to increase the positivity of their self-concepts (i.e., self-enhancement). Importantly, these different motivations in turn can affect people's decisions about with whom they would compare themselves (Buunk et al. 2007).

The aim of the present research was to examine how people differ in their motivations for social comparison and thus their preferences for the comparison target as a function of goal orientations. Although previous studies have found that two primary goal orientations, task and ego orientations, are both closely related to the tendency to engage in social comparison (Darnon et al. 2010; Régner et al. 2007), this relation is yet to be fully understood. In the present research, we examined how the two orientations are related to a choice of comparison target (assessed by affiliation preferences) and whether this relation is mediated by different motivations (Study 1). Furthermore, we explored how this relation arises based upon the provision of performance feedback (Study 2).

Goal orientations

Past research into achievement goals suggests that two primary goals, task and ego goals (that are conceptually similar to mastery and performance goals; Ames 1992), shape people's subjective experience in achievement settings (Nicholls 1984). When people adopt task goals, perception of competence or success is based on a self-referenced standard, such as the degree of personal improvement. However, when they are oriented toward ego goals, normative performance or doing better than others is essential for feeling competent

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and successful. Although goal orientations can be influenced by situational cues that encourage the adoption of a particular goal (Ames and Archer 1988), there are also dispositional differences in preferring and adopting each goal (Kozlowski and Bell 2006; Nicholls et al. 1989).

Goal orientations, both as a “state” and as a “trait,” have been differently related to a variety of affective, cognitive, and behavioral patterns in achievement settings (Kaplan and Maehr 2007). In general, endorsement of task orientation has been associated with adaptive patterns of learning. For example, task orientation is related to effective learning strategies, preference for challenging tasks, and a positive attitude toward classes (Ames and Archer 1988; Nolen 1988). Task-oriented individuals also believe that interest in, and attempts to understand, the task lead to success (Duda and Nicholls 1992; Nicholls et al. 1985). Accordingly, they do not fear or respond negatively to the experience of failure, which is perceived as a part of the learning process (Dickhäuser et al. 2011; Neff et al. 2005).

On the other hand, ego orientation is related to superficial learning strategies such as memorizing (Nolen 1988), and a belief that success requires high ability (Duda and Nicholls 1992). Thus, in the face of failure, ego-oriented individuals attribute the event to a lack of ability and subsequently experience more negative affect (Ames and Archer 1988; Dickhäuser et al. 2011). In fact, they are less likely to seek feedback because they perceive negative feedback to be more costly and less valuable (VandeWalle 2004; VandeWalle and Cummings 1997).

Goal orientations and social comparison

In light of its focus on normative competence and outperforming others, it seems reasonable that ego orientation is related to the tendency to engage in social comparison (Darnon et al. 2010). What seems rather surprising, however, is that task-oriented individuals also tend to seek comparison and show interest in normative information (Butler 1993; Darnon et al. 2010). Although contradictory to the traditional theoretical perspective at first glance, researchers have found that endorsement of task goals does not necessarily imply complete reliance on self-referenced evaluative standards (Chatzisarantis et al. 2016; Van Yperen and Leander 2014). Instead, what distinguishes the two dimensions may be the motivation underlying the comparison behaviors (Butler 1992, 1993).

Among many motivations related to social comparison (Helgeson and Mickelson 1995), three motivations have received primary attention: self-evaluation (i.e., self-assessment), self-enhancement, and self-improvement (Wood 1989). Firstly, in line with Festinger’s (1954) theory, people often compare themselves with similar others in order to evaluate their ability accurately (Wheeler et al. 1982).

Secondly, people make comparisons with others in order to elevate the positivity of their self-concepts (Sedikides and Strube 1997). In particular, people under threat are often found to compare themselves with less fortunate others (Wood et al. 1985). Lastly, social comparison also serves people’s need to improve themselves as others can provide useful information about acquiring skills (Collins 2000; Wayment and Taylor 1995) or act as inspirational role models (Lockwood and Kunda 1997).

Understanding the motivation for making comparisons is important because what drives people to seek comparisons determines their comparison strategies, or with whom they compare themselves (Stanton et al. 1999; Taylor and Lobel 1989; Wood 1989). For example, the desire to improve may encourage people to make comparisons with those who are better off (i.e., upward comparison) whereas the desire to feel superior to others may prompt them to compare themselves with those who are doing worse (i.e., downward comparison; Buunk et al. 2007). Indeed, in one study (Smith and Sachs 1997), giving different instructions to participants (to try to increase their skill or to predict their performance in the next task), which manipulated their motivation, influenced their subsequent choice of comparison target. Those who were motivated to improve their score chose to see the score of someone who had performed better than themselves, while those motivated to predict their future score chose to see the score of someone who had performed at the same level.

Motivation also serves as a bridge between goal orientation and social comparison theories. In her attempt to integrate the two theories, Butler (1992) speculated that while task-oriented individuals compare themselves with others in order to learn and develop their abilities, ego-oriented individuals would do so to assess their relative standing or to feel superior to others. In a similar vein, an experimental study (Bounoua et al. 2012) showed that manipulation of participants’ goal orientations influenced their subsequent choice of comparison target, presumably because state goal orientations activated different motivations. Specifically, using an achievement goal model in which mastery (corresponding to task) and performance (corresponding to ego) goals are further split into approach and avoidance forms (Elliot 1999), this research showed that inducing all but a performance-avoidance goal led participants to engage in upward comparison.

However, previous studies have yet to provide a complete picture of the relation between the two goal orientations and social comparison. Firstly, there is a lack of direct evidence showing the distinct motivational processes underlying the relation. This is because participants’ motivations have only been inferred, rather than explicitly examined in the aforementioned studies. Secondly, the role of performance feedback, which plays an important role in both the goal

orientation and social comparison literature as we explain in the following section, has been largely overlooked and needs further exploration.

The role of performance feedback

A large body of evidence suggests that telling people how well or poorly they performed has a great influence on their subsequent comparison behaviors (Pyszczynski et al. 1985; Smith and Insko 1987). In particular, the experience of failure is expected, and found, to alter people's general tendency to compare themselves with those who are similar or slightly better than themselves (Buunk and Gibbons 2007; Friend and Gilbert 1973). Specifically, Wills' (1981) downward comparison theory proposed that threatened people compare themselves with those who are inferior in order to cope with negative affect. Although questions have arisen in regard to the existence of "true downward comparison" (i.e., comparison with someone of a lower level than oneself), people do tend to avoid upward comparison (Pyszczynski et al. 1985) and lower their preferred comparison level after experiencing failure (Gibbons et al. 1994, 2002).

Importantly, how people react to the experience of failure depends largely on individual differences in goal orientations (Dweck and Leggett 1988; Grant and Dweck 2003; Nicholls et al. 1989). For example, task orientation is related to active coping and sustained motivation in the task after failure, whereas ego orientation is related to effort withdrawal and decreased motivation in the task (Grant and Dweck 2003). This partly stems from different perceptions of the feedback (VandeWalle 2004). For task-oriented individuals, success or failure feedback provides information concerning development of their abilities. These individuals would consider failure as a challenge and try to overcome it (Lee and Kim 2014). On the contrary, success or failure information would serve as an indicator of ability for ego-oriented individuals. Thus, they are more vulnerable to helpless responses and are less motivated to improve themselves in the face of failure (Elliott and Dweck 1988). For example, after attempting (but failing) to solve three puzzles, ego-oriented individuals showed a greater drop in persistence and spent less time on the next puzzle than task-oriented individuals (Sideridis and Kaplan 2011). This also aligns well with previous studies that demonstrated ego-oriented individuals' tendency to engage in self-handicapping (Urda and Midgley 2001). Possibly, they withhold effort to self-improve especially after experiencing failure in order to conceal their lack of ability.

Overall, then, it seems likely that performance feedback will affect subsequent comparison motivation differently for task- and ego-oriented individuals. In fact, we believe that a post-failure situation would be an adequate context to observe where the two orientations diverge. Specifically, failure feedback is likely to impel task-oriented individuals

to seek information for self-improvement and thus engage in upward comparison. In contrast, failure feedback is likely to shift ego-oriented individuals toward downward comparison by fostering their desire to feel superior to others or thwarting their desire to improve themselves.

Overview

The purpose of the present research was twofold. First, we examined how individual differences in goal orientations are related to a different choice of the comparison target and if this relation is mediated by different motivations (Study 1). Second, we examined the relation between goal orientations and social comparison patterns in response to performance feedback (Study 2). Specifically, we examined how task- and ego-oriented individuals differ in their motivations for the comparison and the preferred comparison level following a success or failure experience.

In the present research, affiliation preference was used as our measure of social comparison level as in previous studies (Gerrard et al. 2005; Gibbons et al. 2002). Although there are several operational definitions of social comparison activities (Taylor and Lobel 1989), we chose this measure because it reflects all three primary motivations fairly well. For example, people may prefer to work with less competent others to feel good about themselves, similar others to evaluate their own performance, or highly competent others to learn and improve themselves.

Study 1

In Study 1, we assessed participants' goal orientations and asked them to indicate a preferred grade for group discussion members. We predicted that although both task- and ego-oriented individuals are likely to engage in social comparison (Darnon et al. 2010), they may compare themselves with a different target because they have different motivations for the comparison. Specifically, we proposed the following hypotheses:

Hypothesis 1a Task orientation will be positively related to the comparison level.

Hypothesis 1b Self-improvement motivation will mediate the relation between task orientation and the comparison level.

Hypothesis 2a Ego orientation will be negatively related to the comparison level.

Hypothesis 2b Self-improvement motivation will mediate the relation between ego orientation and the comparison level.

Hypothesis 2c Self-enhancement motivation will mediate the relation between ego orientation and the comparison level.

Method

Participants and procedure

In Study 1, we aimed to recruit as many participants as possible from the available participant pool. A total of 103 students (47 men) from a private university in the United States participated in the study. Participants' ages ranged from 18 to 25 years ($M = 19.41$, $SD = 1.45$). Of all participants, 74.8% were Caucasian, 16.5% were Asian, 2.9% were Hispanic, 1.9% were African American, and 3.9% were of other ethnicity. Participants were recruited through the university's participant pool, and they earned course credit for their participation.

When participants came to the laboratory, they were told that the study was about factors that affect group discussion skills, which are essential in both school and work. The experimenter explained that grade point average (GPA) is one of the most influential factors that is highly associated with discussion skills, such that the higher the GPA people have, the better skills they demonstrate. Participants were then told that they would be contacted for a group discussion in the following week and that they could indicate their preference for group members. After participants completed a battery of questionnaires including items on their comparison level preference, they were debriefed and dismissed. Each participant's GPA was later retrieved from the registrar's office upon their approval.

Measures

Goal orientations

We assessed participants' degree of goal orientations using items developed and used by Nicholls and his colleagues (Duda and Nicholls 1992; Nicholls 1989). The opening stem of this measure was "I feel really successful when ..." and it was followed by eight items assessing task orientation (e.g., "... something I learn makes me want to find out more"; $\alpha = .87$) and eight items assessing ego orientation (e.g., "... I know more than other people"; $\alpha = .82$). Participants responded on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Comparison level

Participants were asked to indicate their preference for group members by ranking their priority from 1 to 4 next to a series of GPA ranges. There were 16 possible choices of ranges starting from 3.81 to 4.00, decreasing by 0.20, to 0–1.00. We used the midpoint of the prioritized range (choice 1) for the analysis (e.g., 3.90 for the range 3.81–4.00).

Motivation

After indicating their preference for group members, participants were asked to rate how important each motivation was in making their choice. Among many motivations that researchers have found (Helgeson and Mickelson 1995), we assessed three major motivations that are relevant to the educational setting (Buunk et al. 2007). Participants responded to three single items that corresponded to self-enhancement ("To feel superior to others"), self-assessment ("To assess how well you perform compared to others"), and self-improvement ("To improve your discussion skills by learning from others") on a 7-point scale.

Own GPA

Each participant's latest GPA was retrieved through the registrar's office. As 14 participants who were freshmen had no record of past GPA, they were not included in the analyses that used own GPA as a variable.

Results

Preliminary analyses

Means, standard deviations, and zero-order correlations for the variables are presented in Table 1. A series of paired-samples *t*-tests was conducted to examine the degree of each comparison motivation. The results showed that participants agreed the most with self-improvement motivation, followed by self-assessment motivation, and self-enhancement motivation, $t_s(102) > -13.59$, $p_s < .001$. Furthermore, another paired-samples *t*-test revealed that participants' preferred GPA level for group members was significantly higher than the mean of their own GPA, $t(88) = -5.32$, $p < .001$. This finding is consistent with Festinger's (1954) account that people compare themselves with similar or slightly better off others.

Main analyses

Table 1 shows that task orientation was positively related to the comparison level, supporting Hypothesis 1a.

Table 1 Descriptive statistics and correlations between variables (Study 1)

Variable	2	3	4	5	6	7	M (SD)
1. Task orientation	.06	.05	.23*	-.18	.09	.36**	5.66 (0.80)
2. Ego orientation	–	-.28**	-.02	.18	.19*	.01	4.67 (1.14)
3. Own GPA		–	.44**	-.13	.02	.03	3.23 (0.50)
4. Comparison level			–	-.07	.11	.48**	3.51 (0.54)
5. Self-enhancement motivation				–	.37**	-.04	2.55 (1.51)
6. Self-assessment motivation						–	4.59 (1.34)
7. Self-improvement motivation						–	5.35 (1.38)

GPA grade point average, N varied from 89 to 103

* $p \leq .05$; ** $p \leq .01$

Participants’ own GPA was also positively related to the comparison level. To examine if task orientation was related to participants’ comparison level beyond the effect of their own GPA, we regressed the comparison level on task orientation and participants’ GPA. Task orientation was related to the comparison level, $\beta = .27, p = .004$, independent of participants’ GPA, $\beta = .42, p < .001$. Thus, task-oriented individuals tended to choose individuals who had a higher grade, regardless of their own grade. On the contrary, participants’ ego orientation was not significantly related to their comparison level, indicating that Hypothesis 2a was not supported.

Next, we examined whether self-improvement motivation mediated the relation between task orientation and the comparison level. The analysis was conducted with the PROCESS macro for SPSS (Model 4; Hayes 2013) using bootstrapping methods with 5000 samples. As shown in Table 2, the indirect path through self-improvement was statistically significant, as a 95% bias-corrected confidence interval did not include zero. Thus, Hypothesis 1b was supported, indicating that task-oriented individuals preferred high performers as group members because they were motivated to improve themselves. The results remained significant when participants’ own GPA was included as a covariate.

Although the total effect of ego orientation on the comparison level was not significant, the recent literature on mediation suggests that tests of indirect effects should be guided by theory regardless of the significance of this association (Rucker et al. 2011). Thus, we tested for the indirect effect of ego orientation on the comparison level through self-improvement and self-enhancement motivations. The results revealed that neither indirect effect was significant, indicating that Hypotheses 2b and 2c were not supported.

Discussion

Although the results of Study 1 fully supported our hypotheses about task-oriented individuals’ comparison motivation and comparison level, we could not find support for our hypotheses about ego-oriented individuals’ comparison patterns. Ego orientation was not significantly related to the comparison level, nor did it have indirect effects on the comparison level through self-enhancement or self-improvement motivation. Possibly, given the participants’ general tendency to engage in upward comparison, the hypothesized effect of ego orientation on the comparison level was hard to observe, especially in the absence of

Table 2 Total, direct, and indirect effects of goal orientations on the comparison level

	Predictor variable	Mediator variable	Total effect	Direct effect	Indirect effect
Study 1					
H 1b	Task orientation	Self-improvement	0.16* (0.07)	0.04 (0.06)	0.11 [0.03, 0.22]
H 2b	Ego orientation	Self-improvement	-0.01 (0.05)	-0.01 (0.04)	0.00 [-0.05, 0.06]
H 2c	Ego orientation	Self-enhancement	-0.01 (0.05)	-0.00 (0.05)	-0.01 [-0.03, 0.01]
Study 2					
H 3b	Task orientation	Self-improvement	23.91* (11.67)	-2.29 (12.99)	26.20 [12.66, 46.34]
H 4b	Ego orientation	Self-improvement	-10.77 (7.13)	-2.01 (6.57)	-8.76 [-16.62, -3.19]
H 4c	Ego orientation	Self-enhancement	-10.77 (7.13)	-5.90 (6.93)	-4.87 [-12.86, -0.15]

Unstandardized coefficients are reported. Numbers in parentheses are standard errors; numbers in brackets are 95% confidence intervals. Indirect effects are significant at the .05 level if the confidence intervals do not include zero. Supported hypotheses are shown in bold

* $p \leq .05$

ego threat. In [Study 2](#), we provided performance feedback, which was expected to elicit different comparison motivations from task- and ego-oriented individuals and to help to elucidate the impact of each goal orientation on the comparison level.

In addition, we revised our dependent measure to refer to an upcoming *dyadic* interaction in [Study 2](#). This revision was made because the group discussion setting in [Study 1](#) could have been conducive to eliciting upward comparison, as people tend to prefer partners of superior ability when the interaction is to take place in a large group (Miller and Suls 1977).

Study 2

In [Study 2](#), participants were provided with bogus success or failure feedback before they indicated a partner preference for the upcoming task. As individual differences in goal orientations give rise to different reactions to challenges or difficulties (Dweck and Leggett 1988), we predicted that there would be significant relations between goal orientations and social comparison patterns in the failure condition. Specifically, the experience of failure may prompt upward comparison by eliciting greater self-improvement motivation for task-oriented individuals while discouraging ego-oriented individuals from making upward comparison by strengthening their self-enhancement motivation as well as thwarting their self-improvement motivation.

In contrast, we did not predict significant relations between goal orientations and social comparison patterns in the success condition because participants would perceive that they have already mastered the skills or outperformed others. That is, success feedback is not likely to trigger specific motivations for social comparison for either task- or ego-oriented individuals. In sum, we proposed the following hypotheses in [Study 2](#):

Hypothesis 3a In the failure condition, task orientation will be positively related to the comparison level.

Hypothesis 3b In the failure condition, self-improvement motivation will mediate the relation between task orientation and the comparison level.

Hypothesis 4a In the failure condition, ego orientation will be negatively related to the comparison level.

Hypothesis 4b In the failure condition, self-improvement motivation will mediate the relation between ego orientation and the comparison level.

Hypothesis 4c In the failure condition, self-enhancement motivation will mediate the relation between ego orientation and the comparison level.

Hypothesis 5 In the success condition, goal orientation will not be significantly related to the comparison level or have indirect effects on the comparison level through comparison motivations.

Method

Participants and procedure

In [Study 2](#), we aimed to recruit at least 20 participants per condition following Simmons et al. (2011) and as many as possible within the limit of the participant pool allocation. Participants were 68 students (21 men) from a private university in the United States. Participants' ages ranged from 18 to 22 years ($M = 18.71$, $SD = 1.04$), and 61.8% were Caucasian, 22.1% were Asian, 2.9% were African American, and 13.2% were of other ethnicity. Participants were all native English speakers to ensure that the feedback manipulation that pertained to their listening ability would be self-relevant. Participants came to the laboratory as a group of one to four members for a study purportedly about leadership and communication skills. The experimenter highlighted the importance of having good leadership and explained its relation to different types of communication skills. She also mentioned that strong positive correlations among different types of skills (i.e., listening, writing, and speaking skills) were expected. Finally, participants were told that after testing their listening ability on the day, the experimenter would contact them for a writing task in the following week.

Participants then took a listening comprehension test (Park et al. 2009), which was administered to improve the credibility of the subsequent feedback manipulation. When the experimenter took their tests ostensibly to grade them, participants completed questionnaires that included measures below. Afterwards, the experimenter returned their graded tests along with an additional piece of paper for the manipulation check. Participants were randomly assigned to failure (3 out of 8 correct) or success (7 out of 8 correct) conditions. After remarking that the average score last year was 5.3, the experimenter asked participants to answer the manipulation check item.

Next, the experimenter told participants that for the upcoming writing task, they could have a writing partner based on their preference. Participants wrote down a preferred Scholastic Aptitude Test (SAT) essay score for the writing partner they hoped to work with, and responded to items about motivation for the partner choice. Upon

completion of the questionnaire, participants were debriefed and dismissed.

Measures

Goal orientations

Participants responded to the goal orientation scale used in Study 1 (task orientation, $\alpha = .91$; ego orientation, $\alpha = .75$).

Manipulation check

As a manipulation check on our performance feedback, participants responded to how well they thought they did on the test on a 7-point scale after they received their score.

Comparison level

In response to the statement “I would like to have as my writing partner a person whose SAT essay score is ...,” participants wrote a preferred score out of 800.

Motivation

The same three items as in Study 1 were used to assess participants’ motivation for the partner choice.

Own SAT essay score

Each participant’s SAT essay score was retrieved from the registrar’s office after informed consent was obtained.

Results

Manipulation check

Participants in the success condition thought they did better ($M = 5.87, SD = 0.72$) than participants in the failure condition ($M = 2.41, SD = 1.01$), $t(64.37) = 16.45, p < .001$. Thus, the performance feedback manipulation was successful.

Main analyses

Failure condition

The descriptive statistics and zero-order correlations are presented below the diagonal in Table 3. In the face of failure, task orientation was positively related to the comparison level, supporting Hypothesis 3a. Task orientation was also positively related to self-improvement motivation. On the other hand, ego orientation was not related to the comparison level. Thus, Hypothesis 4a was not supported. Ego orientation was not significantly related to self-enhancement motivation, but was negatively related to self-improvement motivation.

Next, we examined whether self-improvement motivation mediated the relation between task orientation and the comparison level. As shown in Table 2, the indirect path through self-improvement motivation was statistically significant, supporting Hypothesis 3b. This indicates that task-oriented individuals who received unfavorable feedback were motivated to improve themselves and thus preferred a more competent person as their writing partner.

We also examined the possibility of ego orientation having an indirect effect on the comparison level through self-improvement or self-enhancement motivation (Hypotheses 4b and 4c). As shown in Table 2, both indirect effects

Table 3 Descriptive statistics and correlations between variables (Study 2)

Variable	1	2	3	4	5	6	7	M (SD)
1. Task orientation	–	.00	–.06	–.31	–.26	–.01	–.03	5.67 (0.66)
2. Ego orientation	–.05	–	.03	.13	.29	.31	.05	4.71 (1.23)
3. Own SAT essay score	.21	.11	–	.22	.09	–.01	–.02	624.83 (95.94)
4. Comparison level	.33*	–.25	.42*	–	.23	.14	.07	700.17 (75.78)
5. Self-enhancement motivation	–.29	.28	–.04	–.44**	–	.39*	.12	1.97 (1.28)
6. Self-assessment motivation	.28	.01	–.08	.08	.14	–	.56**	3.87 (1.75)
7. Self-improvement motivation	.61**	–.37*	–.04	.57**	–.33*	.40*	–	5.10 (1.30)
M (SD)	5.85 (0.76)	4.64 (1.28)	650.00 (65.99)	699.89 (55.62)	2.14 (1.27)	3.84 (1.80)	5.22 (1.42)	–

Results for the success condition are presented above the diagonal and results for the failure condition are presented below the diagonal. N varied from 29 to 31 for success, and from 32 to 37 for failure

SAT Scholastic aptitude test

* $p \leq .05$; ** $p \leq .01$

emerged as significant, supporting the two hypotheses. These findings indicate that ego-oriented individuals who experienced failure tended to be more motivated to feel superior and/or less motivated to improve themselves, resulting in a preference for a less competent partner. All of the indirect effects remained significant when participants' own SAT essay score was included as a covariate.

Success condition

The descriptive statistics and zero-order correlations are presented above the diagonal in Table 3. Aside from correlations between motivations, no significant correlation was observed. Furthermore, neither task nor ego orientation had indirect effects on the comparison level through comparison motivations. Thus, Hypothesis 5 was supported.

Discussion

Study 2 replicated and extended the findings of **Study 1** by manipulating the performance feedback. In the face of failure, task-oriented individuals tended to prefer a higher performer as their writing partner in order to improve their skills. On the contrary, ego-oriented individuals were less likely to be motivated to improve themselves and/or more likely to be motivated to feel superior to others, and thus lowered their preferred comparison level. Although this indirect effect should be interpreted with caution as the total effect was not significant, it is consistent with previous findings that ego-oriented individuals tend to attribute failure to their low ability and subsequently exhibit maladaptive motivational patterns (Ames and Archer 1988).

Additionally, we found no significant effect of goal orientation in the success condition as expected. Indeed, previous studies (Dickhäuser et al. 2011; Neff et al. 2005) have focused on how task- and ego-oriented individuals respond to failure, rather than success, because conditions involving challenges or difficulties are more likely to reveal the effect of goal orientation on motivations (Grant and Dweck 2003). Thus, **Study 2** provided empirical evidence that when participants feel successful, their social comparison patterns may not necessarily vary as a function of goal orientations.

General discussion

The goal of the present research was to investigate how the two goal orientations are related to different motivations for social comparison, and thus the comparison level. In **Study 1**, we found that task orientation was significantly related to upward comparison, and that this relation was mediated by self-improvement motivation. **Study 2** centered on the idea

that failure feedback would illuminate the effects of goal orientations on social comparison behaviors. Specifically, the experience of failure was expected to motivate task-oriented individuals to improve themselves and to engage in upward comparison to a greater degree, but to shift ego-oriented individuals toward downward comparisons by heightening their desire to feel superior over others or thwarting their improvement motivation. In support of these predictions, we found significant indirect effects of task orientation on the comparison level through self-improvement motivation, and of ego orientation through self-enhancement as well as self-improvement motivation in the failure condition.

The present research contributes to the literature on goal orientation and social comparison theories in several ways. Firstly, we have extended the understanding of how task- and ego-oriented individuals differ in their responses to performance feedback (Grant and Dweck 2003; Sideridis and Kaplan 2011) by examining a new outcome variable; that is, who they choose to affiliate with after a success or failure experience. In fact, our findings regarding task- and ego-oriented individuals' affiliation preference are also an important addition to the growing body of research into the effect of achievement goals on social outcome variables (Poortvliet 2013; Poortvliet and Darnon 2010).

Secondly, our work contributes to the social comparison literature by examining affiliation preference as an index of the comparison level. Although previous research has largely overlooked people's decisions about interaction partners as a reflection of social comparison (cf., Taylor and Lobel 1989), social comparison behaviors can be most commonly observed in the context of social interactions in daily life. For example, in classroom settings, students' comparison patterns can be revealed more by their interactions with the target of the comparison than by their interest in fragmentary information, such as the target's scores (Butler 1992). This suggests that examining participants' social comparison behaviors using their preference for interaction partners has more practical implications for everyday social life.

Lastly, the present research contributes to the integration of the two theories by investigating the previously found association between the two goal orientations and social comparison orientation in depth (Régner et al. 2007). Our results suggest that although both task- and ego-oriented individuals are inclined to compare themselves with others, they may differ in why and with whom they engage in comparison. In particular, task- and ego-oriented individuals' comparison target choice differs, especially in the face of failure, partly because they have different motivations.

A particular strength of the present research is the evidence-based interpretation of our results. We explicitly asked participants about their motivation for the comparison target choice, which differs from previous studies that merely speculated why the two goal orientations

are related to different outcomes (Sideridis and Kaplan 2011). Indeed, we showed that task-oriented individuals' willingness to work with a high performer after experiencing failure could be accounted for by their heightened motivation to improve themselves. This finding supports the theoretical predictions and helps to explain why task-oriented individuals show adaptive behaviors, such as asking for help or persisting in the task after failure (Grant and Dweck 2003; Sideridis and Kaplan 2011).

On the contrary, ego-oriented individuals' preference for a less competent partner after failure could be partly explained by lower self-improvement motivation and higher self-enhancement motivation. This also aligns well with previous findings suggesting their tendency to attribute failure to lack of ability (Ames and Archer 1988) and to use self-handicapping strategies (Urdu and Midgley 2001). Our results suggest that the experience of failure may thwart ego-oriented individuals' motivation to improve themselves, as they want to avoid a demonstration of low competence, while heightening their desire to feel superiority, as their perception of success depends largely on the relative competence (Roberts et al. 1998).

The present findings also have important implications for ego-oriented individuals' long-term development. Specifically, considering that high performers can be important sources of inspiration and motivation for development (Lockwood and Kunda 1997), ego-oriented individuals who prefer to affiliate with less competent others may not be as motivated to develop themselves. Furthermore, shying away from high performers who can provide useful task-related information also takes away an important source of knowledge from ego-oriented individuals. In fact, ego-oriented individuals can benefit greatly from interacting with competent others because they detect and make use of high-quality information better than task-oriented individuals (Poortvliet et al. 2007). However, by lowering their comparison level and preferring to affiliate with less competent others, ego-oriented individuals could be missing a valuable opportunity for learning.

There are a number of limitations to note in the present research. First, it is possible that our experimental settings highlighted the salience of task goals as we emphasized the importance of the tasks to the participants in order to eliminate the potential confounding effect of their task engagement (Major et al. 1991). Admittedly, such an environment can provide a strong situational cue that influences participants' state-level goal orientations (Kaplan and Maehr 2007). However, our results show that participants' motivations for social comparison and affiliation preferences differed as a function of dispositional goal orientations regardless of the potential situational cues. In fact, it is noteworthy that despite the task goals salient

in the study setting, ego-oriented individuals lowered their improvement motivation after a failure experience.

It should also be noted that researchers have developed measures that conceptualize achievement goals using a more complex goal model (e.g., 2×2 achievement goal model; Elliot 1999), in which mastery (corresponding to task) and performance (corresponding to ego) goals are crossed with an approach-avoidance dimension. However, such a measure (Elliot and McGregor 2001; Elliot and Murayama 2008) and the one used in the present research (Duda and Nicholls 1992) may assess different, albeit closely related, constructs (Barkoukis et al. 2007). Specifically, as Chatzisarantis et al. (2016) argue, while Elliot and colleagues' 2×2 goal measure "captures both goal adoption and goal valence, it is ... somewhat ambiguous in terms of capturing the standards that people adopt during the process of evaluating personal competence" (p. 62). In contrast, the measure we used is more explicit in "capturing predispositions to adopt self-referenced versus normative comparison standards" (p. 62), as evident in the stem of all the items, "I feel most successful when..." In this regard, this measure may have greater relevance in our research, considering that we focused on the adoption of different comparison standards in delineating the potential relation between goal orientations and social comparison tendencies.

Another limitation of the present research concerns the correlational nature of the data. In particular, this may raise questions about whether the correlations between goal orientations and comparison motivations portray a causal relation or merely reflect an overlap between the measures. In order to demonstrate causality, future studies should examine whether experimentally inducing different goals would activate different motivations for comparison and further affect the decision about a comparison target.

Future studies can also benefit from incorporating other moderators in the relation between goal orientation and comparison behaviors. For example, the effect of ego orientation on social comparison may depend on a moderator such as the perception of competence (Dweck and Leggett 1988; Spinath and Stiensmeier-Pelster 2003). In a previous study (Elliott and Dweck 1988), highlighting the value of the performance goal led children with low self-perceived abilities to show a maladaptive response to feedback about mistakes whereas those with high self-perceived abilities responded in a manner similar to task-oriented individuals. Likewise, why and with whom ego-oriented individuals engage in social comparison after experiencing a setback may depend on the perception of their abilities.

Lastly, we note that our results did not yield any significant effect pertinent to self-assessment motivation. One plausible explanation is that, rather than being independently recognized by the participants, the desire to evaluate the self may underlie or work in conjunction with other motivations.

It is possible, for example, that self-assessment motivation was partly subsumed by, and represented in, participants' endorsement of self-improvement or self-enhancement motivation (see Gregg et al. 2011). Although these results were not discussed in depth in the present research because these analyses were only exploratory without a priori hypotheses, task- and ego-oriented individuals' motivation to accurately perceive their performance and its effect on social comparison behaviors may deserve separate discussion.

In conclusion, we believe that it is important to explore and understand individual differences that influence the social comparison process, especially given the significant affective, cognitive, and behavioral consequences of social comparison (Major et al. 1991). Under the framework of goal orientation theory, the present research demonstrated that studying people's goal orientations might provide insights into their motivation for comparison and the direction of the comparison. We hope that the present research will provide impetus for further investigations into the effect of goal orientations or other individual differences on social comparison behaviors.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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