

Competition, Cooperation, and the Effects of Others on Me

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Four studies were conducted to test the notion that whether one competes against or cooperates with a comparison target can serve as an important determinant of the direction (contrast or assimilation) of self-evaluative social comparison effects. In Study 1, cooperative–competitive orientation was treated as an individual difference variable, and it was shown that social comparison led to contrast for individuals with a more competitive orientation, whereas assimilation occurred for individuals with a more cooperative orientation. Study 2 replicated this result, treating cooperative–competitive orientation as a contextual variable. In Study 3, it was demonstrated that to obtain this pattern of results it is not necessary for perceivers to believe that they will be either competing or cooperating with the comparison target. Simply activating the relevant concepts is sufficient. The final studies demonstrated that competition activates a “difference” focus and cooperation activates a “similarity” focus.

Keywords: social comparison, self-evaluation, competition, cooperation, assimilation, contrast

In the present article we test the hypothesis that people tend to distance their self-views from individuals whom they compete against and align their self-views with individuals who are in cooperation with them. Thus, whether one competes or cooperates is an important determinant of the direction of social comparison effects (Festinger, 1954). Moreover, we argue that for such contrastive–competition or assimilative–cooperation effects to occur it is not necessary for the comparison target to be the person against whom one will compete or with whom one will cooperate. Rather, we argue that for these effects to occur, it is sufficient to merely activate a “competitive” versus “cooperative” processing style or mindset. These processing styles may be activated simply by priming (synonyms of) the relevant concepts. Thus, the mere cognitive accessibility of the words *competition* versus *cooperation* may be sufficient to point social comparison effects in opposite directions.

PREVIOUS RESEARCH

People obtain self-knowledge by relating their thoughts, feelings, and performances to those around them. When we want to

find out how intelligent, attractive, or honest we are, we need to compare our IQ, looks, and wrongdoings with those of other people. Others constitute input for the construction of self-evaluations. We engage in social comparison to evaluate, enhance, verify, and improve ourselves (see Taylor & Lobel, 1989). Hence, the need for social comparison information (“How am I doing compared to others?”) should be particularly strong when the need for self-information is high (“I need to know how I am doing!”) and especially when self-information is defined in relative terms (“I need to know how I am doing, compared to others!”; see Gibbons & Buunk, 1999). Research suggests that this is especially true for contexts that emphasize self–other differentiation (“I want to be me, different from others”; see Stapel & Tesser, 2001) and for situations that stress the attainment of individual goals (“I want to win”; Gardner, Gabriel, & Lee, 1999; Stapel & Koomen, 2001a). In other words, the need for social comparison information is especially strong in situations that emphasize competition; that is, in situations in which “people strive for excellence” (Tesser, 1988, p. 205). After all, competition is by definition comparative (Tesser, 1988; see also Carnevale & Probst, 1998; Festinger, 1954; Mussweiler, 2003; Stapel & Tesser, 2001; Taylor & Lobel, 1989).

We think it is important to note, however, that the fact that *interest* in social comparison information is stronger in competitive than in noncompetitive contexts should not be taken to mean that the self-evaluative *impact* of social comparisons is stronger in competitive than in noncompetitive contexts. As several recent studies have shown, social comparison information may influence people’s self-views, emotions, and actions quite easily and spontaneously; that is, without the intention to engage in other-to-self-comparisons (Gilbert, Giesler, & Morris, 1995; Mussweiler, 2003). Sometimes, just seeing another individual is enough for self-views to be affected (Stapel & Blanton, 2004). Thus, that people are especially likely to actively seek social comparisons in competitive situations should not be taken as indicative of the potential self-evaluative impact of social comparisons in competitive situations compared with other circumstances.

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Interestingly, one could argue that because the need for social comparison is relatively dominant in competitive situations, it has therefore led studies of the consequences of social comparisons to be somewhat biased toward such situations. We think that this may, indeed, explain why for decades social comparison research has emphasized that self-evaluative contrast is the “default,” “natural,” or “automatic” effect of other-to-self-comparisons (see Brown, Novick, Lord, & Richards, 1992; Gilbert et al., 1995; Suls & Wheeler, 2000). Furthermore, we suggest that the competitive (e.g., Morse & Gergen, 1970), explicitly comparative (e.g., Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Taylor & Lobel, 1989), and performance-oriented (e.g., Tesser, 1988) context of many previous social comparison studies might have increased the likelihood that self-evaluations were displaced away from the comparison referent and led to contrast rather than assimilation. Specifically, we suggest that one important determinant of the direction of social comparison effects is whether one engages in social comparison with a competitive or cooperative *orientation* or whether social comparison occurs within a competitive or a cooperative *context* (for a similar—but empirically untested—line of thought, see Pelham & Wachsmuth, 1995). Interestingly, although researchers have studied the effects of competition and cooperation in a number of domains (e.g., educational, organizational domains), for a large array of tasks (e.g., cognitive learning, psychomotor tasks), and in a variety of settings (classrooms, factories, athletic fields), no systematic analysis of the impact of competition and cooperation on social comparison processes has to date been made.

Simply put, we argue that competition should typically lead to contrast and cooperation to assimilation. Furthermore, we argue that what is driving these contrast versus assimilation effects is the processing styles competitive versus cooperative orientations or contexts activate. That is, whether contrast or assimilation occurs is dependent on whether information about others is processed with a mind that is set on differentiating the self from others or with a mind that is set on including others in the self, respectively. Competition is likely to activate a *differentiation mindset* in which self-distinctiveness is emphasized, such that self-perceptions will be contrasted away from relevant comparison targets. Conversely, cooperation is likely to activate an *integration mindset* in which similarities between the self and others are emphasized, such that self-perceptions will be assimilated toward those others (cf. Carnevale & Probst, 1998; Stapel & Koomen, 2001a, 2001b).

In a set of earlier studies (Stapel & Koomen, 2001a), we demonstrated that similar contrast or assimilation effects might occur when people’s personal self or social self are activated, respectively (cf. Brewer & Gardner, 1996; Turner, 1987). In these studies, we showed, *inter alia*, that social comparisons were more likely to lead to contrast when words like *I* and *me* were primed, whereas assimilation occurred when words like *we* and *us* were primed. We argued that this effect occurred because *I* priming activated a focus on differences (a differentiation mindset), whereas *we* priming activated a focus on similarities (an integration mindset). Unfortunately, however, we never tested this hypothesis explicitly (see Stapel & Koomen, 2001a).

PRESENT RESEARCH

In the present research, we extended this earlier work on the relation between self-construal orientation and the direction of social comparison effects by investigating the hypothesis that cooperation is likely to result in self-evaluations that are assimilated to the social comparison information, whereas competition is more likely to result in self-evaluations that are contrasted to the social comparison information. In Study 1, we treated cooperativeness–competitiveness as an individual difference variable and tested the hypothesis that assimilation is more likely to occur for more cooperation-oriented people, whereas contrast is more likely for more competition-oriented people. In Study 2, we manipulated rather than measured cooperativeness versus competitiveness and thus tested the hypothesis that assimilation is more likely in cooperative contexts, whereas contrast is more likely in competitive contexts. In Study 3, we tested the hypothesis that for such competition–contrast, cooperation–assimilation effects to occur, it is not necessary for the comparison target to be the person against whom one competes or with whom one cooperates. Rather, we argue that it is sufficient to just activate a “competitive” versus “cooperative” processing style for these effects to occur. In other words, these processing styles may be activated simply by priming (synonyms of) the relevant concepts (Study 3). Furthermore, in Study 4, we explicitly (cf. Stapel & Koomen, 2001a) tested the hypothesis that competition activates a differentiation mindset (a focus on differences), whereas cooperation activates an integration mindset (a focus on similarities). We tested this hypothesis by comparing both competitive versus cooperative contexts (Study 4a) and competitive versus cooperative people (Study 4b).

STUDY 1

Over the past decades, researchers have developed various paper-and-pencil instruments that operationalize competitiveness–cooperativeness as an individual difference variable. These range from global measures, such as the Competition–Cooperation Attitude Scale (Martin & Larsen, 1976) to more focused instruments such as the Cooperative Learning Scale (Johnson, Johnson, & Anderson, 1983), the Sports Orientation Questionnaire (Gill & Deeter, 1988), and the Competition subscale of the Work and Family Orientation Scale (Helmreich & Spence, 1978). Although researchers studying the nature of competitiveness and cooperativeness sometimes differ in their precise definitions of these terms (see, e.g., Houston, McIntire, Kinnie, & Terry, 2002), in most paper-and-pencil instruments cooperation and competition are treated as polar opposites on the same dimension (see Martin & Larsen, 1976; Wagner, 1995). Cooperation-oriented individuals are then characterized as those people who enjoy being involved in a group of individuals who work together to attain common goals and who willfully contribute personal effort to the completion of this goal (e.g., Tauer & Harackiewicz, 2004; Wagner, 1995). Conversely, competition-oriented individuals are typically characterized as those people who enjoy working independently and “against” others. Competition-oriented individuals focus on differentiating the self from others by virtue of being superior. These individuals like situations in which attaining a goal means that the remaining individuals are excluded from achieving this goal (see Helmreich & Spence, 1978; Martin & Larsen, 1976).

In the present study, we put our cooperation–assimilation competition–contrast hypothesis to a first test by investigating the impact of individual differences in the extent to which individuals are competition versus cooperation oriented on the direction of social comparison effects. We predicted assimilation for participants who were more cooperation oriented, such that upward comparisons should lead to higher self-evaluations than downward comparisons. Contrast should occur for participants who were more competition oriented, such that upward comparisons should lead to lower self-evaluations than downward comparisons.

Method

Participants and Design

Eighty undergraduates served as participants. For this study we used a 2 (valence other: positive, negative) \times (cooperative–competitive orientation) model with cooperative–competitive orientation serving as a continuous predictor. Participants received partial course credit for their time.

Procedure and Materials

Participants were told that they would participate in a series of unrelated studies. These studies were part of a general testing session in which several questionnaires were administered. Participants were thus led to believe that the studies of interest had no relation with each other. First, they would fill out a personality questionnaire, then they would participate in a reading comprehension study, then they would participate in a study of journalistic styles, and then they would fill out a self-evaluation questionnaire. They were told that the experimenter would time them while they worked on each of the studies.

Cooperative–competitive orientation. First, all participants filled out a 13-item personality measure that was especially designed for this study to create an individual difference measure that would best fit our purposes. Eight of the 13 items were taken from Martin and Larsen's (1976) Competition–Cooperation Attitude Scale (e.g., "I do not care if I hurt people on my way to success" [Competition] and "It is important to treat everyone nicely" [Cooperation]), the remaining items were taken from Wagner's (1995) Competition–Cooperation subscale of his Individualism–Collectivism measure (e.g., "I prefer to work with others in a group rather than working alone" [Cooperation] and "It annoys me when other people perform better than I do" [Competition]). This scale yielded an internal consistency reliability of .87. In our analyses, we used participants' scores on this scale as a measure of their cooperative–competitive orientation, such that lower scores indicated a cooperative orientation and higher scores indicated a competitive orientation. We thus treat cooperative–competitive orientation as a one-dimensional construct because in the current research we are mainly interested in the contrast between cooperative versus competitive orientations. The high internal consistency of our cooperation–competition measure validates this approach. Of course, cooperativeness as well as competitiveness could be treated as multidimensional constructs, but the specific structure of these constructs concerns us less in the present research (e.g., see Martin & Larsen, 1976; Tauer & Harackiewicz, 2004; Wagner, 1995).

Filler task. After completion of this personality measure, participants were given a filler task to clear their mind and to further obscure the relation between the different questionnaires participants completed. This task was a version of the Scrambled Sentence Test and included 30 items, each requiring the participant to form a grammatically correct five-word sentence from six words presented in a scrambled order. All the words in the test were neutral and unrelated to the hypotheses under test in this study (see also *Concept priming*, Study 3).

Social comparison information. Next, participants received social comparison information in a Journalistic Styles Study (see also Stapel &

Koomen, 2001a). Participants read a bogus one-page newspaper article describing a psychology student from their university. Their task was to guess in which Dutch daily newspaper or weekly magazine the article could have been published. The student described in the article was very successful or rather unsuccessful. The successful (positive) comparison target had finished his undergraduate studies very quickly, had won an award for his honor's thesis, had many friends, and had started his own business while he was still enrolled at the university. The unsuccessful (negative) comparison target was described as being not particularly intelligent. He had never completed his undergraduate studies because he got involved in a fight with his advisor and was unemployed most of the time, but sometimes worked odd shifts at a bar. He did not have many friends, was often tired, felt somewhat depressed, and hoped he would become more successful in the future, but he had no idea how to achieve that.

Self-evaluation. After having read the newspaper article and having written their answers to the media source question, participants rated themselves on the following adjectives: *bright, competent, balanced, promising, successful*. These items were rated on 7-point scales (on which 1 = *not at all* and 7 = *very*).

Similarity and comparison target ratings. After the self-evaluation task, experimental participants were asked how similar the target was to them on a 7-point scale (1 = *very dissimilar*, 7 = *very similar*). Next, on 7-point scales (1 = *not at all*, 7 = *very*), they rated the comparison target on the following adjectives: *intelligent, successful, and likable*.

Debriefing. On completion of the questionnaires, participants were debriefed about the purpose of the study. None of the participants spontaneously indicated suspicion of the actual goal of the study. Furthermore, when explicitly asked, none of the participants felt their self-evaluation ratings might have been influenced by their attitudes toward competition and cooperation or the description of the comparison target (positive, negative). After debriefing, all participants were thanked and dismissed.

Results and Discussion

Comparison Target and Similarity Ratings

First, we checked whether the positive comparison target was indeed judged more positively on the relevant dimensions than the negative target. To do this, we averaged the items into a single index (Cronbach's $\alpha = .78$). We tested whether participants' cooperative–competitive orientation moderated the effect of comparison valence on their self-evaluations. Accordingly, we analyzed the effects on this index with a model with valence other (positive, negative) as a dichotomous and cooperative–competitive orientation as a continuous variable. Results revealed the predicted main effect of valence other, $F(1, 76) = 63.34, p < .01, \eta = .45$ (other F s < 1). Participants judged the positive target more positively ($M = 5.60, SD = 1.08$) than the negative target ($M = 3.40, SD = 1.37$).

A similar analysis on the perceived similarity measure revealed a main effect of valence other, $F(1, 76) = 22.05, p < .01, \eta = .22$. There were no main or interaction effects of cooperative–competitive orientation on this measure (F s < 1 , but see Studies 2–3). This effect indicated that participants exposed to positive comparison information reported being more similar to the target ($M = 4.50, SD = 0.99$) than did those exposed to negative comparison information ($M = 3.43, SD = 1.06$). This is not surprising, given that it is more self-enhancing to perceive similarities with a positive target than with a negative target.

Self-Evaluation

We averaged the self-evaluation items into a single index (Cronbach's $\alpha = .83$). We next tested whether participants'

cooperative–competitive orientation moderated the effect of comparison valence on their self-evaluations. Accordingly, we analyzed the effects on participants' self-evaluation with a model with valence other (positive, negative) as a dichotomous and cooperative–competitive orientation as a continuous variable (see Figure 1). Results revealed a marginal main effect of cooperative–competitive orientation, $F(1, 76) = 3.67, p < .06, \eta^2 = .21$, such that a more competitive orientation is associated with lower self-evaluations ($M = 4.82$) than is a more cooperative orientation ($M = 5.11$). We also found the expected interaction of valence and cooperative–competitive orientation, $F(1, 76) = 235.68, p < .01, \eta^2 = .87$ (other $F < 1$). This interaction indicates that for individuals who are more competition oriented, positive comparison information led to less positive self-evaluations than did negative comparison information, a contrast effect. Conversely, however, for individuals who are more cooperation oriented, positive comparison information led to more positive self-evaluations than did negative comparison information, an assimilation effect (see Figure 1).

These findings provide the first support for the cooperation–assimilation, competition–contrast hypothesis: Whether one is oriented toward cooperation or toward competition is an important variable determining the direction of the self-evaluative consequences of social comparison processes. Contrast is more likely to occur when individuals are more competition minded. Assimilation is more likely when individuals are more cooperation oriented.

STUDY 2

In Study 1 we demonstrated that individual differences in the extent to which people are cooperation or competition oriented moderate the direction of self-evaluative social comparison effects. The next step is to test the hypothesis that a similar effect may occur when the extent to which one is focused on cooperation versus competition is contextually induced. Accordingly, we exposed participants to a description of an upward or a downward comparison target under conditions in which they expected either to compete against or to cooperate with the target. Given the cooperation–assimilation, competition–contrast logic, contrast

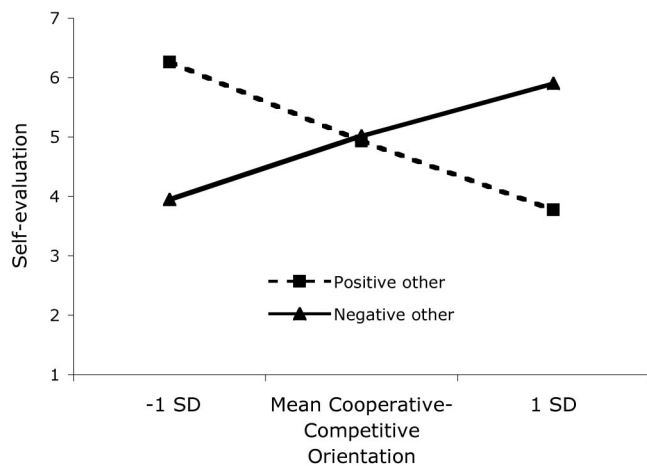


Figure 1. Study 1. Self-evaluation as a function of valence other and cooperative–competitive orientation.

should occur in the competitive context such that upward comparisons should lead to lower self-evaluations than downward comparisons. Assimilation should occur in the cooperative context such that upward comparisons should lead to higher self-evaluations than downward comparisons.

Method

Participants and Design

Seventy-five undergraduates were randomly assigned to the conditions of a 2 (valence other: positive, negative) \times 2 (context: competition, cooperation) factorial design or to a control condition, in which participants received no context or other information and were asked only to give self-evaluations. Participants received partial course credit for their time.

Procedure and Materials

Manipulations. On arrival at the experiment room, participants were shown into one of eight cubicles. Participants in the competition condition were told that they were involved in a study of “Competitive Performance.” These participants were told that they would be competing against another (same-sex) participant on a “General Intelligence and Social Sensitivity” (GISS) game that “looks a lot like Trivial Pursuit, but measures both verbal and mathematical intelligence, and general knowledge skills as well as your emotional intelligence, the extent to which you are a socially sensitive person.” Competition participants were further told that if they won the game (most correct answers), they would receive “extra course credit.” (It was left unspecified how much extra credit they would receive exactly.) Participants in the cooperation condition were told that they were involved in a study of “Cooperative Performance.” These participants were told that they would form a “cooperative team” with another (same-sex) participant and that together with this other participant, they would play the GISS game (see above). Cooperation participants were then told that if their team score was “high enough,” they would receive extra course credit. (It was left unspecified what exactly a “high enough” score would amount to.) Participants in the control condition did not receive any information about the GISS game.

After this general introduction, competition and cooperation participants (but not control participants) were given a “fact sheet” with some “essential information” about the student they would be either competing against or cooperating with. In the positive comparison target conditions, this student was described as very intelligent (high grades), well-read (likes to read, both fiction and nonfiction), and socially sensitive (well liked, many friends). In the negative comparison target conditions, this student was described as not so intelligent (low grades), not well-read (hates reading), and socially insensitive (not well liked, no real friends).

Self-evaluation. Next, all participants were given a “background information questionnaire.” Participants in the experimental conditions were told that this was ostensibly to allow later determination of whether their personality would have any impact on their performance during the GISS game. In this questionnaire, all participants rated themselves on the following adjectives: *bright, competent, balanced, promising, successful*. These items were rated on 7-point scales (1 = *not at all*, 7 = *very*).

Comparison target and similarity ratings. After the self-evaluation task, experimental participants were asked how similar the target was to them on a 7-point scale (1 = *very dissimilar*, 7 = *very similar*). Next, on 7-point scales (1 = *not at all*, 7 = *very*), they rated the comparison target on the following adjectives: *intelligent, successful, and likable*.

Debriefing. On completion of the questionnaire, experimental participants were told they would not be playing the GISS game. They were carefully debriefed about the true goal and purpose of the study. None of the participants spontaneously indicated suspicion of the actual goal of the study. Furthermore, when explicitly asked, none of the participants felt

their self-evaluation ratings might have been influenced by the goal of the GISS game (cooperation, competition) or the description of the comparison target (positive, negative). After debriefing, all participants were thanked and dismissed.

Results and Discussion

Comparison Target and Similarity Ratings

First, we checked whether the positive comparison target was indeed judged more positively on the relevant dimensions than the negative target. To do this, we averaged the items into a single index (Cronbach's $\alpha = .82$). A Valence Other \times Context (without control group) analysis of variance (ANOVA) revealed the predicted main effect of valence other, $F(1, 56) = 104.55, p < .01, \eta = .65$ (other F s < 1). Participants judged the positive target more positively ($M = 5.84, SD = 1.04$) than the negative target ($M = 3.10, SD = 1.05$).

An ANOVA on the perceived similarity measure revealed a main effect of valence other, $F(1, 56) = 9.93, p < .01, \eta = .15$, and a main effect of context, $F(1, 56) = 43.38, p < .01, \eta = .44$. There was no interaction effect ($F < 1$). The valence effect indicated that participants exposed to positive comparison information reported being more similar to the target ($M = 4.48, SD = 1.09$) than did those exposed to negative comparison information ($M = 3.76, SD = 1.27$). Again, this should not be surprising, given that it is more self-enhancing to perceive similarities with a positive target than with a negative target. The pattern of the context effect on similarity was as follows: The tendency to perceive similarity was stronger in the cooperation ($M = 4.87, SD = 0.85$) than in the competition ($M = 3.35, SD = 1.08$) conditions. It is interesting that although this finding is in line with our predictions, in our first study we did not find an effect of cooperative–competitive orientation on similarity measures. This suggests that the effects of cooperativeness versus competitiveness on other–self-similarity ratings are less strong when this variable is measured as an individual difference variable (Study 1) than when it is contextually induced (Study 2).

Self-Evaluation

We averaged the self-evaluation items into a single index (Cronbach's $\alpha = .79$). An ANOVA on this index revealed the predicted Valence Other \times Context interaction, $F(1, 56) = 21.74, p < .01, \eta = .28$ (other effects $ps > .21$). As can be seen in Table 1, simple

Table 1
Mean (and SD) Self-Evaluations as a Function of Valence Other (Positive, Negative) and Context (Competition, Cooperation), Study 2

Valence other	M (and SD) for context	
	Competition	Cooperation
Positive	5.13 _a (1.19)	5.94 _b (0.98)
Negative	6.21 _b (0.80)	4.80 _a (0.94)

Note. Scale range is from 1 to 7. Higher numbers indicate more positive self-evaluations. Means that do not share subscripts differ significantly at $p < .05$. Mean self-evaluation in the control condition was 5.67 (1.05).

comparisons revealed that when the context was competitive, positive comparison information led to less positive self-evaluations ($M = 5.13, SD = 1.19$) than did negative comparison information ($M = 6.21, SD = 0.80$), $F(1, 56) = 8.21, p < .01, \eta = .12$, a contrast effect. When the context was cooperative, positive comparison information led to more positive self-evaluations ($M = 5.94, SD = 0.98$) than did negative comparison information ($M = 4.80, SD = 0.94$), $F(1, 56) = 10.02, p < .01, \eta = .15$, an assimilation effect. The self-evaluation scores in the control condition ($M = 5.67, SD = 1.05$) were halfway between the scores in the experimental conditions.

These findings clearly indicate that whether social comparison processes occur in a competitive or a cooperative context is an important variable determining the direction of the self-evaluative consequences of such processes. Contrast occurred when participants expected to be competing against the comparison target. Assimilation was found when participants expected to be cooperating with this comparison referent. Thus, together with the results of Study 1, in which it was shown that individual differences in cooperative–competitive orientations might moderate the direction of social comparison effects, the current findings provide strong support for our cooperation–assimilation, competition–contrast hypothesis.

STUDY 3

In our third study, we examined the hypothesis that subtle activation of the concepts competition versus cooperation is sufficient to induce contrastive versus assimilative social comparison effects, respectively. Thus, for such effects to be obtained, it is not necessary that perceivers are dispositionally oriented toward competition or cooperation (see Study 1) or that they consciously believe they will actually be competing against or cooperating with the comparison target (Study 2). Put simply, the subtle activation of the relevant concepts is enough, independent of one's dispositional orientation or the interpersonal relevance of the comparison target. This hypothesis was inspired by Bargh's (1997) work on implicit goal activation. Bargh argued that many of the goals an individual pursues are not the result of conscious deliberation and choice; conscious choice is not necessary for goal activation and operation. Goals are represented in memory in the same way that constructs, attitudes, and stereotypes are. Therefore, similar rules should apply when the activation of goals is concerned (Bargh, 1997). Indeed, Bargh (1997) reported studies showing that after participants were primed via a "language test" with synonyms of the concept "achievement," they subsequently behaved in line with this (achievement) goal in a second study in which that goal could be pursued (see also Chartrand & Bargh, 1996; Stapel & Koomen, 2001b).

We extend this previous research on implicit goal effects by showing that the subtle activation of interpersonal goals, namely, competition and cooperation, may also exert their effects on the outcome of social comparisons *nonconsciously*. Similar to Bargh (1997; Chartrand & Bargh, 1996), by *nonconsciously*, we mean that the perceiver is not aware of having or working toward these goals during the target task. In our studies, priming stimuli are presented to participants' conscious awareness, but participants are not aware of the potential influence of the primes on their subsequent information processing.

Method

Participants and Design

Eighty undergraduates were randomly assigned to the conditions of a 2 (valence other: positive, negative) \times 2 (concept: competition, cooperation) factorial design or to a control condition, in which participants received “neutral concept” and no “other” information. Participants received partial course credit for their time.

Procedure and Materials

Participants were told that they would participate in a series of unrelated studies. First, they would participate in a reading comprehension study; second, in a study of journalistic styles; and, third, they would fill out a self-evaluation questionnaire. They were told that the experimenter would time them while they worked on each of the studies.

Concept priming. For the concept priming task, we used a version of the Scrambled Sentence Test to activate nonconscious information-processing goals (see also Chartrand & Bargh, 1996; Stapel & Koomen, 2001b). This task was labeled “Language Comprehension” and included 20 items, each requiring the participant to form a grammatically correct five-word sentence from six words presented in a scrambled order. In the competition conditions, words related to competition (e.g., *compete, win, battle, contest, competition, rivalry*) were embedded in 10 of the items. In the cooperation conditions, words related to cooperation (e.g., *cooperate, collaborate, work together, support, friendship*) were embedded in 10 of the items. The remaining words in both conditions were neutral with respect to both processing goals. In the control conditions, all the words were neutral (as in the filler task in Study 1).

Social comparison information. Participants in the experimental conditions received social comparison information in the same Journalistic Styles Study that was used in Study 1. Control participants did not perform this study (see also Stapel & Koomen, 2001a).

Self-evaluation. After having read the newspaper article and having written their answers to the media source question, participants rated themselves on 7-point scales (1 = *not at all*, 7 = *very*) on the same set of adjectives used in Studies 1 and 2 (i.e., *bright, competent, balanced, promising, successful*). Next, they rated the comparison target and self-target similarity (for details, see Studies 1 and 2).

Suspicion. After these tasks, participants completed a debriefing form that probed for awareness and suspicion concerning our manipulations. Specifically, participants were given the funnel debriefing procedure designed by Chartrand and Bargh (1996) to check whether the relation between the priming and judgment tasks was disguised successfully. Participants completed several items tapping their suspicions regarding the purpose of the study (see Chartrand & Bargh, 1996). Participants were asked (a) what they thought the purpose of the study had been, (b) whether they thought any of the different tasks had been related, (c) whether anything they had done on the language comprehension task affected what they had done on later tasks, and (d) whether they thought their performance on the Journalistic Styles Study influenced self-evaluations. No participant showed any awareness or suspicion of a relation between the experimental tasks of the study or indicated that the priming and/or social comparison tasks had affected his or her self-evaluations.

Results and Discussion

Comparison Target and Similarity Ratings

As before, we first averaged the comparison other items into a single index (Cronbach's $\alpha = .82$). A Valence Other \times Concept (without control group) ANOVA revealed the predicted main effect of valence other, $F(1, 63) = 54.71, p < .01, \eta = .47$ (other $F_s < 1$). Participants judged the positive target more positively

($M = 5.67, SD = 1.11$) than they did the negative target ($M = 3.53, SD = 1.22$).

An ANOVA on the perceived similarity measure revealed a main effect of valence other, $F(1, 63) = 5.19, p < .01, \eta = .08$, and a main effect of concept, $F(1, 63) = 26.74, p < .01, \eta = .31$. There was no interaction ($F < 1$). The valence effect indicated that participants exposed to positive comparison information reported being more similar to the target ($M = 4.64, SD = 1.08$) than did those exposed to negative comparison information ($M = 4.06, SD = 1.41$). The concept effect indicated that the tendency to perceive other-self similarity was stronger in the cooperation ($M = 5.00, SD = 0.82$) than in the competition ($M = 3.65, SD = 1.33$) conditions. This effect is similar to what was found in Study 2 and is line with our predictions (but see Study 1).

Self-Evaluation

We averaged the self-evaluation items into a single index ($\alpha = .79$). An ANOVA on this index revealed the predicted Valence Other \times Concept interaction, $F(1, 63) = 35.17, p < .01, \eta = .37$, and a marginal main effect of concept, $F(1, 63) = 3.23, p = .08, \eta = .05$ (valence other effect $F < 1$). As can be seen in Table 2, simple comparisons revealed that when competition was primed, positive comparison information led to less positive self-evaluations ($M = 5.06, SD = 1.18$) than did negative comparison information ($M = 6.33, SD = 0.82$), $F(1, 63) = 9.40, p < .01, \eta = .13$, a contrast effect. When cooperation was primed, positive comparison information led to more positive self-evaluations ($M = 6.06, SD = 0.90$) than negative comparison information ($M = 4.47, SD = 0.94$), $F(1, 63) = 18.58, p < .01, \eta = .23$, an assimilation effect. Self-evaluation scores in the control condition ($M = 5.53, SD = 0.99$) were halfway scores in the experimental conditions.

These findings provide further support for the hypothesis that the outcome of social comparison processes may be dependent on whether such processes are instigated in a competitive or a cooperative context. More important, these results corroborate Bargh's (1997) notion that such interpersonal goals may be activated contextually and unconsciously, simply by priming concepts related to these goals (see also Chartrand & Bargh, 1996; Stapel & Koomen, 2001b). Thus, this priming-and-social-comparison study clearly suggests that the self-evaluative impact of social comparison information may be diametrically opposite (assimilative vs. contrastive), depending merely on whether (synonyms of) the

Table 2
Mean (and SD) Self-Evaluations as a Function of Valence Other (Positive, Negative) and Concept Priming (Competition, Cooperation), Study 3

Valence other	<i>M</i> (and <i>SD</i>) for concept	
	Competition	Cooperation
Positive	5.06 _a (1.18)	6.06 _b (0.90)
Negative	6.33 _b (0.82)	4.47 _a (0.94)

Note. Scale range is from 1 to 7. Higher numbers indicate more positive self-evaluations. Means that do not share subscripts differ significantly at $p < .05$. Mean self-evaluation in the control condition was 5.53 (0.99).

words *cooperation* versus *competition* were cognitively activated during the social comparison process.

STUDY 4

In Studies 1 to 3, we found evidence for the hypothesis that competition is more likely to result in contrastive social comparison effects, whereas cooperation is more likely to yield assimilation. In the present study, we tested the hypothesis that one important mechanism underlying the effects of chronically (see Study 1) and contextually (see Studies 2 and 3) induced cooperative versus competitive orientations is the mindsets these orientations activate. Specifically, we argue that when one is (chronically or contextually) competition oriented, information about others is processed with a mind that is set on differentiating the self from others, whereas when one is (chronically or contextually) cooperation oriented, such information is processed with a mind that is set on including others in the self (cf. Stapel & Koomen, 2001a). Moreover, we argue that this mindset effect is a relatively general processing style effect that goes beyond the interpersonal realm. Thus, we argue that competition is likely to activate a *differentiation mindset*; that is, a general focus on differences rather than on similarities. Conversely, cooperation is likely to activate an *integration mindset*; that is, a general focus on similarities rather than on differences (cf. Carnevale & Probst, 1998; Stapel & Koomen, 2001b).

In Study 4a, we tested this hypothesis by putting participants in either a competitive or a cooperative social comparison situation (see Study 2), then we gave them two pictures, and asked them how similar these pictures are to each other. As earlier research has shown, this picture task can be used successfully to assess the extent to which people are focused on seeing similarities versus differences. That is, someone who has a differentiation mindset should rate the two pictures as less similar than someone who has an integration or similarity mindset (see Markman & Gentner, 1996; Mussweiler, 2003). In Study 4b, we did the same for participants who are chronically oriented toward competition or cooperation (see Study 1). If competition is more likely to activate a differentiation focus and cooperation an integration focus, then the similarity ratings regarding the pictures should be lower in the (chronic or contextual) competition than in the (chronic or contextual) cooperation conditions.

Study 4a: Cooperative Versus Competitive Contexts

Method

Participants and Design

Forty-eight undergraduates were randomly assigned to one of three conditions: competition, cooperation, or a (no instruction) control group. Participants received partial course credit for their time.

Procedure and Materials

The procedure was identical in parts to the one used in Study 2. Competition participants were told they were going to play a game and that they would be competing against another participant. Cooperation participants were told that they would be cooperating with another participant. Control participants were given no specific instruction. Unlike Study 2, however, after the game instruction participants were not given social

comparison information and were not asked self-evaluation questions. Rather, all participants were asked to start the next task, called Picture View. All participants were given two sketches of two scenes that were taken from Markman and Gentner (1996). The first sketch depicted a woman leaning over a table while holding a cup of coffee or tea, a Christmas tree with a few presents underneath, and a fireplace. The second sketch depicted a man standing in front of a table and reaching for a bowl on the table. On the table were also placed a bottle and a few glasses. Following Mussweiler (2001), participants were instructed to look carefully at these pictures and then rate how similar they were on a 9-point rating scale that ranged from 1 (*not at all*) to 9 (*very much*). This measure constituted the main dependent variable.

After completion of this task, participants were asked to fill in some other questionnaires (unrelated to the present study). When they had finished all the questionnaires, participants were debriefed about the goal of all the studies (see above). None of the participants indicated suspicion of the actual relation between the different tasks.

Results

A one-way ANOVA of instruction (competition, cooperation, control) on similarity ratings revealed a main effect, $F(2, 45) = 11.12, p < .01, \eta = .33$. As expected, competition participants rated the two pictures as less similar ($M = 4.69, SD = 1.45$) than cooperation participants ($M = 6.50, SD = 0.89$), and control participants' similarity ratings were between these two extremes ($M = 5.63, SD = 0.81$; all simple comparisons, $ps < .05$).

Study 4b: Cooperative Versus Competitive Individuals

Method

Participants, Procedure, and Materials

Participants were 20 undergraduate students who had participated in Study 1 and were (3 weeks after participation in Study 1) approached via e-mail to participate in a study called Picture View. These individuals were preselected on the basis of their scores on our cooperative-competitive orientation measure: They were the 10 highest scoring (thus, competition oriented) and the 10 lowest scoring (thus, cooperation oriented) participants of Study 1.

Similar to Study 4a, participants were given the Picture View task: They looked carefully at two pictures and gave a similarity rating on a 9-point rating scale that ranged from 1 (*not at all*) to 9 (*very much*). This measure constituted the main dependent variable.

After completion of this task, participants were asked to fill in some other questionnaires (unrelated to the present study). When they had finished all the questionnaires, participants were debriefed about the goal of all the studies (see above). None of the participants indicated suspicion of the actual relation between their participation in the previous study a few weeks earlier (Study 1) and their similarity ratings.

Results

A *t* test of orientation (competitive vs. cooperative) on similarity ratings revealed the predicted effect, $t(18) = 2.43, p < .05$. Competition-oriented participants rated the two pictures as less similar ($M = 4.60, SD = 1.07$) than did cooperation-oriented participants ($M = 5.70, SD = 0.95$).

Discussion

Together, Studies 4a and 4b support the hypothesis that competition induces a difference focus, whereas cooperation induces

the accessibility of a similarity focus. Study 4a showed this effect for contextually activated competition versus cooperation concerns, whereas Study 4b showed that the same holds true for chronically accessible competitive versus cooperative orientations. Together with the social comparison studies reported above (which showed that competition is more likely to lead to contrast and cooperation to assimilation), these findings support the hypothesis that in competitive situations, the pull toward contrast is stronger because competition activates a differentiation mindset, whereas in cooperative situations, the pull toward assimilation is stronger because cooperation activates an integration mindset. As a nice addition to the current results, Mussweiler (2003) found that inducing a procedural similarity or difference focus actually resulted in assimilation and contrast in self-evaluations, respectively.

GENERAL DISCUSSION

Everything is relative, especially how we see ourselves. Our self-views are often influenced by the way we measure up to the performance of others. Knowledge about others' accomplishments and views leads us to contemplate our prospects and reevaluate our abilities and opinions (Festinger, 1954). We use others to know and evaluate ourselves. What, however, determines the self-evaluative effect of those comparison referents? What determines whether social comparisons inflate or deflate our self-evaluations?

Most of the early work on social comparison effects proceeded from the assumption that comparisons to someone who is better off (i.e., upward comparisons) are threatening and will dampen self-evaluations, whereas comparisons to someone who is worse off (i.e., downward comparisons) are self-enhancing and will boost self-evaluations. This has led some researchers to conclude that the common consequence of social comparison processes is contrast (see Brown et al., 1992; Gilbert et al., 1995; Wedell & Parducci, 2000). As Brown (1998) writes in a summary of the relevant literature:

Most research shows evidence for a contrast effect: For example, we tend to regard ourselves as more attractive when we are in the company of unattractive people than when we are among people who are very attractive. In a similar vein, we are more apt to think of ourselves as sophisticated and knowledgeable when discussing world affairs with the ill-informed than when we are conversing with the politically astute. (p. 117)

Notwithstanding the abundance of contrast effects in the social comparison literature (see Suls & Wheeler, 2000), recent empirical findings suggest that the impact of both upward and downward social comparisons on self-evaluation may be assimilative as well as contrastive: Another individual's success may be a source of envy and self-doubt or of inspiration and elation, and another individual's failure may boost one's sense of relative worth or status, but it can also be depressing or threatening if it suggests that one's own status is likely to deteriorate. What then determines whether the effect of an (upward or downward) other on self-evaluations is assimilation or contrast?

The present findings show that one important determinant of whether social comparisons result in assimilation or contrast is whether such comparisons are made with a mind that is—chronically or contextually—set to cooperate or to compete. Furthermore, the current studies show that competition activates a differ-

entiation mindset in which self–other differences are emphasized more—with contrast as the likely result. Conversely, cooperation activates an integration mindset in which self–other similarities are emphasized more—which typically results in assimilation. Interestingly, the present focus on the mindset or processing style with which comparisons are made may explain why contrast rather than assimilation effects have been so prominent in earlier studies of social comparison effects. Specifically, we think that the reason why previous studies of the consequences of social comparisons typically found contrast was because those studies investigated social comparison effects in relatively competitive contexts (for reviews, see Suls & Wheeler, 2000). This focus on relatively competitive situations is understandable because the need for social comparison is relatively dominant in such situations (see Festinger, 1954; Gibbons & Buunk, 1999; Stapel & Tesser, 2001; Tesser, 1988; Wood, 1989). As Tesser's (1988) self-evaluation maintenance model suggests, people are more interested in seeking social comparison information under circumstances that stress the importance of comparative evaluations, such as competitions.

In other words, we argue that because the need for social comparison is relatively high in competitive situations, previous studies of the consequences of social comparisons are somewhat biased toward such situations. Our findings clearly suggest that strong contrast effects are likely to occur in competitive contexts, but they also show that this should not be taken to mean that social comparisons are inconsequential in noncompetitive situations. In fact, such noncompetitive, cooperative contexts can produce similarly strong assimilation effects. Social comparison effects may occur relatively spontaneously, even in situations in which the need for social comparison or self-distinctiveness is perhaps relatively low (for a similar argument, see Stapel & Blanton, 2004; Stapel & Tesser, 2001).

Although we used relatively crude techniques (cf. Bargh, 1997) to investigate the impact of competitive versus cooperative situations on subsequent social comparison processes, the real-life implications are hard to miss. Situations in which individualistic competition is important (e.g., sporting events, job interviews, academic competitions) are more likely to instigate contrastive other–self comparison processes than are situations in which cooperation is the primary goal (e.g., team work with a clear superordinate goal). Sherif's Robbers Cave experiment (Sherif, Harvey, White, Hood, & Sherif, 1961) probably provides the most vivid demonstration that individualistic, competitive environments are more likely to instigate person-to-person comparison and contrast, whereas collectivistic, cooperative environments (in which every individual works toward a shared, superordinate goal) activate more assimilative, integrative social processes. One of the practical implications of the present findings is that the mere activation of the concepts that are associated with these environments may be sufficient to make people process social information in cooperative rather than competitive ways. Thus, people may, for example, view colleagues who are neutral with respect to the extent to which they value, foster, or enjoy cooperative or competitive relationships as closer or more distant merely as a function of whether the context is cooperative or competitive.

The present focus on competition and cooperation and the processing styles (differentiation vs. integration) these interpersonal goals activate fits well with recent work (e.g., Carnevale & Probst, 1998) on the interpersonal consequences of these two

goals. These researchers report findings suggesting that cooperation increases the salience of integrative thinking, whereas competition makes differentiation mindsets more accessible. That is, they showed that competition reduces the tendency to perceive relationships among items and to group things together (similar to a differentiation set), whereas cooperation increases the use of broader and more integrated mental categories and a tendency to see relationships among items and to group things together (similar to an integration set).

The finding that competition primes differential thinking and is therefore more likely to induce contrast, whereas cooperation primes integrative thinking and is therefore more likely to yield assimilation, can also be perceived as support for recent models explaining social comparison effects in terms of other-self-connectedness (e.g., Aron, Aron, Tudor, & Nelson, 1991; Brewer & Weber, 1994; Brown et al., 1992; Pelham & Wachsmuth, 1995; Stapel & Koomen, 2001a; Tesser, 1988). For example, research by Brown and Brewer and their colleagues has demonstrated that assimilation is more likely than contrast when one feels psychologically connected to the comparison other and identifies with him or her (e.g., Brewer & Weber, 1994; Brown et al., 1992). Similarly, our studies on the impact of self-construal activation (*I* vs. *we* priming) on social comparison effects suggest that feelings of identification, closeness, or “we-ness” are more likely to lead to assimilation, whereas feelings of “I-ness” and the need to be a distinctively different individual are more likely to lead to contrast.

Our results can also be viewed as relevant for perspectives that focus on interpersonal interaction effects in cooperative versus competitive situations. For example, Ruscher and Fiske (1990) found evidence that individuals expecting to compete with another person paid more attention to their opponent and made more dispositional inferences about information inconsistent with initial expectancies about their opponent than did individuals not expecting to compete. Interestingly, Ruscher and Fiske’s (1990) results can be interpreted in motivational as well as nonmotivational terms. That is, they can be viewed as resulting from outcome dependency—a motivational factor; but they may also be explained in terms of a competitive or differentiative processing style—a nonmotivational factor. Unfortunately, neither Ruscher and Fiske’s nor our research was designed to address this issue. What is clear, however, is that our results seem to contribute to a more complete picture of competing versus cooperating individuals. Cooperating individuals will—due to assimilation—perceive each other as more similar, whereas competing individuals will—due to contrast—perceive more differences between each other. Because similarity often generates positive feelings and enhances interpersonal attraction (e.g., Byrne, 1971), cooperative assimilation may be a cognitively based contribution to a positive relationship between cooperators compared with competitors.

CONCLUDING COMMENTS

In conclusion, with the present studies we have focused on the impact of competitive versus cooperative styles of thinking on the self-evaluative consequences of social comparison effects. This emphasis on styles of thinking and the way social comparison information is used is different from most other social comparison research (but see Kruglanski & Mayseless, 1990; Mussweiler, 2003). Previous social comparison studies focused primarily on

how individuals’ motives (e.g., self-evaluation, self-enhancement, self-improvement) or features of the comparison target (e.g., self-relevance, attainability, closeness, similarity, extremity) moderate the occurrence and direction of social comparison effects (for reviews, see Suls & Wheeler, 2000). In the present studies, each of these variables was kept constant, such that we could test that, over and above these variables, an important determinant of the direction of social comparison effects is whether a competitive or cooperative processing style is active during the comparison process.

As we have argued in our previous social comparison research (Stapel & Koomen, 2000, 2001a), we think that this process-oriented approach has the theoretical advantage of providing a common denominator to describe the way in which divergent psychological states (e.g., motives, goals) or situational features (e.g., self–other similarity, extremity) are thought to impinge on the *processing* of social comparison information. That is, all such variables affect the style with which social comparison information is processed (cf. Blanton, 2001; Kruglanski & Mayseless, 1999; Mussweiler, 2003; Schwarz & Bless, 1992; Stapel & Koomen, 2000, 2001a). Activating a differentiation-oriented processing style yields contrast, whereas assimilation occurs when an integration mindset has been primed. Any variable that either directly or indirectly activates one of these processing styles (I-ness or we-ness; competition or cooperation; low connectedness, high connectedness) should therefore have the corresponding consequences for people’s self-views. The present studies thus provide us not only with the insight that cooperative versus competitive situations yield diametrically opposed social comparison effects, but also with a perspective on social comparison effects that is grounded in basic cognitive processes. How the mind is set during the comparison process determines the outcomes of this process.

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