It's the End of the Competition: When Social Comparison Is Not Always Motivating for Goal Achievement

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Nowadays consumers can easily connect with others who are pursuing similar goals via smart devices and mobile apps. This technology also enables them to compare how well they are doing relative to others in a variety of contexts, ranging from online gaming to losing weight to loyalty programs. This research investigates consumers' motivation to achieve a goal when they compare themselves with a superior other who has already attained the goal. Building on the literature on social comparison, and on competition in particular, we find that consumers are less motivated when the superior other has attained the goal compared to when the superior other is just ahead, keeping the relative distance equal. This negative effect on motivation is evident even in situations in which consumers can still attain the same goal as the superior other. We argue and demonstrate that this effect occurs because the other's goal attainment limits consumers' prospect to compete and overtake the superior other. Six experimental studies show evidence for this effect in hypothetical loyalty programs and behavioral task completion. These findings provide a deeper understanding of the motivational effect of social comparison, which have implications for marketing managers and public policy makers.

Keywords: social comparison, motivation, competition, goal achievement

When it comes to food intake and dietary control, consumers have a long tradition of meeting up with other consumers who are pursuing similar goals. Weight Watchers probably is the most popular example, and has been around since the early sixties. Nowadays, with the development of technology, consumers have also started sharing *other* goals on social media, through websites, smart devices, and mobile apps (Huang 2018). On the website StickK.com, consumers can reinforce their commitment by posting any goal, from saving money to reducing their carbon footprint. These platforms are designed to facilitate goal attainment through consumers' interaction with other people pursuing similar goals. Through these offline and online social interactions, though, consumers can also easily compare and evaluate their performance relative to that of the other participants. For instance, Fitbit Ace explicitly motivates children and parents to compare their goal progress with that of other participants in daily and weekly challenges (Businesswire 2018). Even in the context of loyalty programs, companies stimulate social interaction by adding Facebook, Twitter, Instagram, and other social-sharing buttons on their website (Baxter 2014). Consumers are thus encouraged to share but also *compare* their reward status with other consumers through social media (Smith 2016).

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Editors: Darren W. Dahl and Linda L. Price

Associate Editor: Simona Botti

Advance Access publication December 19, 2018

 • Vol. 46 • 2019
DOI: 10.1093/jcr/ucy075

As consumers have more access to the goal progress of other consumers with similar goals, it is important to understand how such social comparison influences subsequent motivation to achieve the goal. Imagine, for instance, the following situation: you are participating in a grocery store's loyalty program. In this loyalty program, you receive one point for every private-label purchase and you need 100 points to earn a reward. Someone from your Facebook group also joins this program and updates his points collected so far. In one situation, this consumer owns 20 more points than you do. In another situation, this consumer also owns 20 more points than you do, but the number of points that he owns already qualifies for the reward. In short, in both situations, this consumer outperforms you by having 20 more points, but in one situation, he has also attained the goal of obtaining the free reward. Would you be similarly motivated to purchase private-label products on your next visit to the grocery store in both situations? Understanding the answer to this question also carries important practical implications: should managers draw consumers' attention to superior others who are still making good progress or to superior others who have already attained the goal?

In this research, we propose and show that observing the superior other's goal attainment can demotivate further goal pursuit compared to a situation where the superior other is just ahead. We base our prediction on the competition literature, which assumes that people have an innate need to compete and strive for a relative *superior position* by overtaking the other (Festinger 1954; Malhotra 2010; Ordabayeva and Chandon 2011). Hence, when the other has already achieved the end goal, striving for a superior position is no longer possible, which dampens consumers' motivation compared to a situation where the other is just ahead but has not yet attained the goal, holding the relative distance constant.

We demonstrate the demotivation effect of the other's goal attainment in six experimental studies. Our findings offer new implications for social comparison theory in interpersonal goal pursuit. Thus far, this literature (Festinger 1954; Lockwood and Kunda 1997) has mainly suggested a positive effect of upward social comparison on goal motivation, assuming that people want to obtain success comparable to that of the superior other. Thus, as long as they can achieve a position similar to the superior other, the other's goal attainment should have the same effect on goal motivation compared to a situation where the other is just ahead. In contrast, we show that the other's goal attainment does affect goal motivation. At the secondary level, this investigation also informs the literature on competition and positional gains upon which it draws. While earlier research on competition has examined the influence of competition in situations characterized by negative interdependence, in which the probability of a person's goal attainment is negatively correlated with the probability of the other's goal attainment, we extend this perspective by showing the prevalence of such a motive. We show that the motive to compete can influence motivation even when the other's goal attainment should have no implication for people's own goal attainment. Third, this research also contributes to the growing literature on how motivation is shaped in social contexts. In particular, research on goal contagion has shown that witnessing others attain a goal decreases people's motivation to work on the same goal (Aarts, Gollwitzer, and Hassin 2004; McCulloch et al. 2011; Tu and Fishbach 2015). Although our prediction is similar to the one found in the goal contagion literature, we contribute by showing how another factor, namely competition, could play a role in interpersonal goal pursuit.

CONCEPTUAL FRAMEWORK

A goal can be defined as "the cognitive representation of a desired end-point that impacts evaluations, emotions, and behaviors" (Fishbach and Ferguson 2007). Hence, much of what people think about and do revolves around the goals that they are trying to attain. While prior research on goals has mostly looked at various factors influencing people's motivation in an individual context (e.g., negative feedback, assessment of own progress; Carver and Scheier 1988; Fishbach, Eyal, and Finkelstein 2010), recent research has recognized the importance of understanding motivation within a social context. More and more, individuals pursue goals alongside others who seek to achieve similar goals (e.g., complete a loyalty program, run 10 miles). Research on social comparison suggests that people often use other people's performance as a standard of comparison (Collins 1996; Festinger 1954). This tendency to compare oneself with others is so strong that it can manifest spontaneously, without an explicit instruction to do so (Gilbert, Giesler, and Morris 1995; Wood 1989) and in spite of the presence of more objective criteria (Tesser, Millar, and Moore 1998).

As individuals often consider the other's performance when evaluating their own goal progress, it is important to understand how such social comparison influences their subsequent motivation to achieve the goal. Social comparison literature has generally looked at two types of social comparisons: downward comparison with inferior others and upward comparison with superior others. Downward social comparison has often been described as serving the need for self-enhancement in response to negative affect (Wills 1981) and lowered self-esteem (Suls 1977), as it makes people feel fortunate in comparison with the less fortunate others. On the other hand, upward social comparison has been described as serving the need to improve one's situation and simultaneously increase motivation and hope (Taylor and Lobel 1989). Consistent with prior research that has looked at people's motivation to improve

from the perspective of upward social comparison (Lockwood and Kunda 1997), this research also focuses on upward social comparison.

The Effect of Upward Social Comparisons on Motivation

Extant research on upward social comparison has demonstrated its motivating power on goal achievement (Blanton et al. 1999; Lockwood and Kunda 1997). Students were more motivated to study after comparing themselves to others with a higher grade (Blanton et al. 1999). In another study, Fishbach and Dhar (2005) showed that students' interest in pursuing academic activities increased when they compared themselves with other students who spent more time on studying. Upward comparison can motivate goal achievement for various reasons (Huguet et al. 2001). The primary reason has to do with people's self-improvement motive (Festinger 1954). Owing to this unidirectional drive to improve one's current situation, comparing oneself with someone superior shows a higher level of achievement that people hope to similarly attain. For instance, Van de Ven, Zeelenberg, and Pieters (2011a) demonstrated in a consumer context that observing another person possessing a superior product increased people's willingness to pay for that product to reduce the inequality between oneself and the superior other.

Another reason why upward comparison can motivate goal achievement is that by comparing herself with a superior, an individual can gain a sense of her own potential, which increases the individual's outcome expectancy that she can achieve the same success (Buunk et al. 1990; Huguet et al. 2001). For instance, from the success of others, people can derive useful information on how to improve (Taylor and Lobel 1989). They may also come to identify with the superior other and imitate that person's actions to attain their own goals (Buunk and Ybema 2003). This role of identification is consistent with research showing that people sometimes like to affiliate with superior others, because such affiliation can provide them with useful information for successful coping, which can increase inspiration and motivation (Taylor and Lobel 1989). This desire to affiliate with the superior others is more likely to be elicited when people feel anxious or threatened when trying to attain their goals. Huang et al. (2015), for example, have demonstrated that during early stages of goal pursuit, people face more uncertainties about their goal attainment and hence tend to view others as "friends" from whom they can seek support to alleviate uncertainties.

The Other's Goal Attainment: The Role of Competition

Concerning upward social comparison in interpersonal goal pursuit, however, an intriguing question is what happens if the superior other has already attained the goal (vs. not) while the relative distance between people and the superior other is kept constant. No prior research has investigated this difference. At first glance, our research question appears to be related to the research by Lockwood and Kunda (1997), who argued that only attainable success could motivate people upon upward comparison. They showed that first-year students were more inspired by a spectacular graduating student compared to fourth-year graduating students, because the achievements of the graduating superstar seemed more attainable to first-year students than to fourth-year students. However, it is important to note that Lockwood and Kunda (1997) defined attainability as the belief that people can attain success comparable to the superior other in the future. This implies, then, that as long as the comparisons involve the same likelihood of attaining the other's success (i.e., same relative distance), whether or not the other has already attained the goal should have similar effects on one's motivation to continue pursuing the goal. However, in our research, we argue that attaining success similar to that achieved by the superior others is sometimes not enough. Consequently, the other's goal attainment can demotivate further goal pursuit because it limits the possibility for people to compete and overtake the superior other.

According to social comparison research, including research on decision-making and consumer behavior, the natural motivation to continuously improve one's situation can transform into a motivation to compete. Such motivation is also often described as the motivation to achieve a higher position relative to others even at a considerable personal cost (Bazerman, Loewenstein, and White 1992; Malhotra 2010; Haubl and Popkowski Leszczyc 2018). For instance, Ku, Malhotra, and Murnighan (2005) found that the desire to beat rival bidders led auction participants to pay more than what an item was worth to them. This is also consistent with research on positional gains (Solnick and Hemenway 1998), which has shown that people often prefer a situation where they would have less of a good (e.g., income) in absolute terms but more of it compared to the other in relative terms, versus another situation where they would have more of the same good in absolute terms but less of it compared to the other in relative terms. Hence, in situations where competition is possible, the desire to compete and outperform the other could increase people's motivation to work hard sometimes even at the expense of achieving their own personal goal (Epstein and Harackiewicz 1992). However, in the current context, when the superior other has already achieved the goal, the possibility of competition is limited. As in the opening example, the fact that another consumer has already qualified for the reward implies that you cannot beat him anymore by either obtaining a superior reward or being the first to obtain the same reward. This upward comparison is in contrast to the situation in which this consumer also has 20

points more but does not yet qualify for the reward and thus competition is still possible. Importantly, looking at these two types of social comparisons allows us to keep the relative distance (e.g., 20 points in the opening example) between the self and the superior other, and hence the attainability of the other's superior position, constant. That is also why we focus on the difference in goal motivation between an attained and an unattained upward social comparison situation rather than between upward social comparison and no comparison at all. When people have nobody with whom they can compare themselves, other factors, like social comparison orientation, can potentially explain the difference in motivation (Buunk and Gibbons 2007), which we control for in this research.

Based on the competition literature, we thus predict that the superior other's goal attainment is less motivating compared to a situation where the superior other is simply ahead, because the former does not address people's general motive to compete and overtake, while the latter still allows for competition. Formally,

> **H1:** Holding the relative distance between oneself and the superior other constant, observing the other's goal attainment is less motivating compared to observing the other simply being ahead.

To demonstrate support for our proposed process of competition, we look at a number of theoretically derived moderators.

Trait Competitiveness. People differ in their general desire to compete and be better than others (Griffin-Pierson 1990). We therefore expect that people who chronically have a stronger desire to compete are less motivated by those who have attained the goal than by those who are simply ahead, but this effect should be weaker for those who inherently have a lower desire to compete. Formally,

> **H2a:** Observing the other's goal attainment is less motivating compared to observing the other simply being ahead for high competitive people, and this effect is attenuated for low competitive people.

Competitive Goal. In addition to the individual trait to be competitive, it should also be possible to situationally activate or deactivate the goal to compete. For instance, Ordabayeva and Chandon (2011) showed that activating a goal to compete (cooperate) increased (decreased) low-income consumers' desire to obtain positional gains through conspicuous consumption. Hence, under cooperation, people do not feel threatened by superior others and thus are less likely to compete for a better relative position (Frank 1985). Along similar lines, we expect that the reduced motivation caused by the other's goal attainment should decrease when people are primed with the goal to cooperate versus compete. Formally,

> **H2b:** When competition is primed, observing the other's goal attainment is less motivating compared to observing the other simply being ahead, and this effect is attenuated when cooperation is primed.

Goal Progress. Research on competition has shown that the degree of competition depends on the proximity to a standard or a goal (Garcia, Tor, and Gonzalez 2006; Huang, Lin, and Zhang 2019). Garcia et al. (2006) has demonstrated that competitive behavior intensifies when people achieve high rankings (#2) compared to intermediate ones (#202) because higher rankings signify their proximity to the top. Applied to the goal context, it implies that people should be more competitive when they have accumulated high progress and hence are closer to achieving the goal. In such a high-progress situation, we expect to find support for our main hypothesis—namely, that people will report a reduced motivation upon the other's goal attainment. On the other hand, when the progress level is low, people should be less competitive. As a result, they should not be discouraged by the other's goal attainment. In fact, as discussed earlier, research by Huang et al. (2015) has shown that during the early stages of goal pursuit, people are more uncertain about whether they can in fact achieve the goal and hence tend to affiliate (rather than compete) in order to seek support and information from the superior others on how to proceed. This is similar to the findings by Lockwood and Kunda (1997) and Algoe and Haidt (2009), who showed that the positive feelings following upward social comparison can increase people's inspiration to improve. It is therefore assumed that when people have low goal progress (i.e., they are far away from achieving their goal), a higher level of uncertainty about whether they can in fact attain the goal will lead them to consider the other's goal attainment as supportive and inspirational for further goal pursuit. This implies that under low progress, it is more motivating for individuals to compare themselves with someone who achieved the goal than with someone who is simply ahead. Formally,

> **H2c:** Under high goal progress, observing the other's goal attainment is less motivating compared to observing the other simply being ahead, and this effect is reversed under low goal progress.

Downstream Consequences of the Other's Goal Attainment

Our final goal of this research is to further demonstrate support for the competitive account by investigating the consequences of not being able to compete upon the other's goal attainment. Specifically, we aim to understand how the motivation to work on a subsequent new task will be affected. In the focal task, the chance to compete is limited once the superior other has achieved the goal.

According to the goal literature, goal strength increases, rather than decreases, over time until the goal is attained (Bargh et al. 2001). Hence, as the goal to compete cannot be addressed in the focal task upon the other's goal attainment, this goal should remain active until a *new* task provides a new opportunity to compete and "beat" the superior other. As a result, we predict that although the other's goal attainment is less motivating in the focal task, it will lead to an increase in motivation in a subsequent task. More importantly, we propose that this increase in motivation will depend on the nature of the subsequent task and the comparison target.

Relatedness of the Subsequent Task. People's goal to compete entails the need to demonstrate superiority over the other in the defeated domain. This implies that the goal to compete can be fulfilled only when the subsequent task is related to the focal one, because only a related task offers a relevant new opportunity to address the competing goal. On the other hand, when the subsequent task is unrelated to the focal one, outperforming does not necessarily reflect the goal to win in the dimension under threat; hence, goal motivation should not differ, regardless of the other's goal attainment. The importance of competing in a relevant domain is consistent with goal literature, which has shown that activated goals can increase motivation only when the task is relevant or applicable to the accessible goal (Fishbach and Ferguson 2007; Higgins 1996). This line of reasoning is also consistent with research showing that people are motivated to rectify the inferiority experienced upon social comparison directly rather than through a substitute system (Kim and Rucker 2012;). Formally,

> **H3a:** In a subsequent and related task, observing the other's goal attainment in a prior task is more motivating compared to observing the other simply being ahead in a prior task, but this effect is attenuated in a new and unrelated task.

Comparison Target. Besides the nature of the task, the person with whom the individuals compare in the new task should also matter. In support of our competitive account, we expect that observing the other's goal attainment increases motivation in a subsequent and related task only when people perceive that they are going to compete with the same person again, because such a situation provides a new opportunity to overtake the superior other who once defeated them. However, competing with a different person cannot address this goal; hence, goal motivation should not differ, regardless of the other's goal attainment. Formally,

> **H3b:** In a subsequent task where people compare again with the same person, observing the other's goal attainment in a prior task is more motivating than observing the other simply being ahead in a prior task, but this effect is attenuated when they compare themselves with a different person.

To summarize, our conceptualization of people's motivation in response to upward social comparison draws on insights from both social comparison and competition to argue that, holding the relative distance between targets and the superior others constant, observing the others' goal attainment will be less motivating compared to observing others simply being ahead, as the others' goal attainment does not address people's innate desire to compete and overtake. A set of six studies examines this idea while identifying theoretically derived boundary conditions that are supportive of our competitive account.

EXPERIMENT 1

Experiment 1 sought to test hypothesis 1—namely, that holding the relative distance between oneself and the superior other constant, observing the other's goal attainment will be less motivating compared to observing the other simply being ahead. We also aimed to address an alternate account of *joint goal pursuit*. Although we put forward a competitive account, an alternative account could be that people perceive the other person who already attained the goal as someone who is no longer putting effort in her goal pursuit. Thus, this person will no longer be a relevant standard for social comparison, which will in turn dampen motivation compared to a situation in which individuals perceive that the superior other is still working hard on the same goal because that person has not attained the goal yet. To address this alternative explanation, this study included a third condition in which the superior other advanced to the next level of the goal ladder (Koo and Fishbach 2010). If the alternate account of joint goal pursuit holds, we should expect people to be more motivated when they perceive that the other person has advanced to the next level of the goal ladder rather than when the other person simply attained the current goal, because the former implies that the other person is still working hard on the same goal and thus remains a relevant comparison target. However, if our account of competition holds, we should expect the motivation to be equally low regardless of whether the other person has advanced to the next level of the goal ladder or simply attained the current goal, because the fact that the other person reaches a new level should still imply that the opportunity to compete and overtake is limited.

Design and Procedure

This study used a 3 (other's goal attainment: unattained vs. attained vs. advanced) between-subjects design. Two hundred thirty students from an Asian university participated in this study in return for partial course credit. Participants read that they would be playing a computer game called "Spot the difference" (https://www.wildtangent.com/play/spot-the-difference). In the game, they were

asked to find three differences between two pictures. Their performance would be scored based on a number of criteria (e.g., the time spent, the number of differences spotted, the number of hints used). They were also told that as this game required people to concentrate and notice details, their score would reflect their level of conscientiousness. They should aim to collect at least 100 points, which would classify them as high in conscientiousness. To reinforce the goal, they further read that those high in conscientiousness tended to be more efficient and organized, which was important for career success. In this game, they could score on two parts (three puzzles each). In between the two parts, they would be given interim feedback. After reading the game instructions, all participants were told that we would pair them with another student who was also participating in this study either in the same or adjacent room, because in real life, people often played computer games with others. Subsequently, they answered some demographic questions (e.g., age, gender, education background) to facilitate the pairing process. After waiting for 10 seconds, they were told that a match was found and they were connected to another participant.

All participants were asked to go to the game tab in the browser and to start working on the three puzzles in the first part. After finishing the three puzzles and recording their performance (the time spent, the score, the number of hints used, the number of attempts), they were asked to wait while their overall score was calculated. In the feedback, they were reminded that those who scored at least 100 points would be classified as high in conscientiousness. We then manipulated the others' goal attainment in the remaining feedback. In the goal-unattained condition, participants were told that they got 60 points, while the other student got 80 points. Participants in the goal-attained condition read that they got 80 points, while the other student got 100 points. Finally, participants in the advanced condition were similarly told that they got 80 points, while the other student got 100 points and would now advance to the next level that further tested conscientiousness. To make sure that participants in this condition did not feel like they could have a new opportunity to compete with the superior other by speeding up and advancing to the next level, they were further told that given the limited time in this session, they would not be able to go to the advanced level of the goal. In short, all three conditions entailed the same relative distance between participants and the other person: 20 points. The crucial difference between the three conditions was that the other student was already (not yet) qualified as being high in conscientiousness in the goal-attained (-unattained) condition. In the advanced condition, we made it explicit that the other student was still working on the goal but at a more advanced level.

After reading the feedback, participants were told that we offered them an opportunity to improve their performance in this game. Specifically, they read that as listening to classical music could help people relax and focus, research has shown that it could improve people's conscientiousness. Before they began the second part of the game, they would have a chance to listen to an example of such music. They were further told that the longer they listened to the music, the more likely it could improve their performance in the game. We recorded the time that they spent on listening to the classical music as a measure of their motivation to do well in the second part of the game (Huang, Etkin, and Jin 2017). After listening to the music, they proceeded to the second part of the game. Notably, in this study, we did not use their performance in the second part of the game as a measure of motivation, for two reasons. First, their performance was likely to be determined by many factors simultaneously. Students might have scored high because they used many hints or attempted to answer the same question multiple times. Additionally, as time is one of the factors that determine performance, some students might have tried to speed up and maximize hits, while others might have taken their time to find the correct hits. Hence, time might not be a reliable measure of performance in this study. Because of these ambiguities, we decided to use a cleaner measure of motivation—namely, the time that they spent on listening to the music that could have a positive effect on their performance.

Finally, to further address the question of whether people are more likely to perceive the superior other to be an irrelevant comparison target once that person has attained the goal, this study measured perceived relevance by asking participants to rate the relevance of the other student's performance to them on a seven-point scale (1 = not at all relevant; 7 = extremely relevant). Besides measuring relevance, this study also measured two different emotions (envy and admiration) that have been shown to be associated with upward social comparison (Van de Ven et al. 2011a and 2011b). Specifically, participants were asked to rate the extent to which envy and admiration could describe their feelings on a seven-point scale (1 = clearly does not describe my feelings; 7 = clearly describes my feelings). At the end of the survey, to check whether participants indeed perceived that the music could improve their performance, we asked them to rate the extent to which they agreed that listening to classical music could improve people's conscientiousness on a seven-point scale (1 = strongly disagree; 7 = strongly agree).

Results

Due to some technical problems (insufficient headphones; game website not working properly), 11 participants (4.78%) did not successfully finish the study; hence, they were dropped from further analyses, leaving a sample of 220 participants.

The time participants spent listening to classical music was analyzed using a 3 (other's goal attainment: unattained

vs. attained vs. advanced) one-way ANOVA. As expected, results showed a significant main effect ($F(2, 217) = 3.62$, $p = .03$, partial $\eta^2 = .03$). To further explore the main effect, we ran a number of planned contrasts. First, to demonstrate support of hypothesis 1, we ran a planned contrast to compare the goal-attained and -unattained condition. In support of hypothesis 1, results revealed that participants spent less time listening to the music when the other student achieved the goal versus not ($M_{attained} = 49.31$; SE = 6.64; $M_{unattained} = 72.32$; SE = 8.87; $t(1, 217) = 2.17$, $p = .03$). Second, consistent with our proposed account of competition, we expected that participants would be equally motivated no matter whether the other student attained the goal or advanced to the next level of the goal ladder. Results on this planned contrast did not show any significant difference between the attained and the advanced condition ($M_{attained} = 49.31$; SE = 6.64; $M_{advanced} = 47.31$; SE = 6.19; $t < 1$). Further, and also in line with our prediction, participants spent less time listening to the music when they compared themselves with a student who advanced to the next level but not with a student who did not attain the goal ($M_{advanced} = 47.31$; SE = 6.19; $M_{unattained} = 72.32$; SE = 8.87; $t(1, 217) = 2.45$, $p = .02$).

Besides looking at the main dependent measure, this study also included a couple of other measures. First, results pertaining to the perceived relevance of other's performance did not show a significant main effect of the other's goal attainment. Participants in all conditions reported a comparable level of perceived relevance of the other student's performance ($M_{attained} = 3.29$; SE = .21; $M_{unattained} = 3.43$; SE = .20; $M_{advanced} = 3.47$; SE = .19; $F < 1$). Second, results regarding the two emotion measures also did not reveal any significant difference (Envy: $M_{attained} = 2.42$; SE = .19; $M_{unattained} = 2.66$; SE = .17; $M_{advanced} = 2.82$; SE = .17; $F(2, 217) = 1.24$, $p = .29$; Admiration: $M_{attained} = 3.51$; SE = .18; $M_{unattained} = 3.55$; SE = .17; $M_{advanced} = 3.88$; SE = .16; $F(2, 217) = 1.46$, $p = .23$). This suggests that the different motivational effect of whether the superior other attained the goal or not is not likely to be driven by relevance or a difference in the elicited emotions. Finally, results concerning the perceived effectiveness of the music showed that participants in general believed that the classical music could improve their conscientiousness ($M = 4.90$; no significant difference across conditions). The evaluation was significantly above the midpoint of the seven-point scale ($t(1, 219) = 12.49$; $p < .001$), thereby supporting our cover story.

Discussion

Using a real computer game setting, experiment 1 provided initial support for the central argument (i.e., hypothesis 1) that observing the other's goal attainment is less motivating than observing the other simply being ahead. The same effect was found regardless of whether people perceived the superior other to be still putting effort into goal pursuit. Specifically, relative to the situation in which people compared themselves with another who was simply ahead, people were less motivated in their goal pursuit when they compared themselves with someone who had achieved the goal, irrespective of whether it was made explicit that the other person advanced to the next level. This finding runs counter to joint goal pursuit as an alternative explanation. Instead, this finding is consistent with the competition account, such that when competition is no longer possible (i.e., curtailed by the other's goal attainment), upward comparison is less motivating than simply observing the other to be ahead.

EXPERIMENT 2

Experiment 2 sought to provide further support for our central argument about the superior other's goal attainment (hypothesis 1) and the moderating effect of trait competitiveness (hypothesis 2a). Specifically, in support of our competition account, we predicted that people who are generally competitive should be less motivated by the other's goal attainment (vs. the other being simply ahead), while this effect should disappear for those who are less competitive.

In addition, we included two control conditions to find more direct support for our hypothesis. While this research provides support for the demotivation effect of the other's goal attainment by comparing it with a situation where the other is simply ahead, another approach is to compare the goal attainment condition with a situation where no social comparison is evoked. The no social comparison situation can also help to address an unanswered question of experiment 1. While experiment 1 showed support for the main hypothesis that observing the other's goal attainment is less motivating compared to observing the other being ahead, it did not provide evidence for whether this is driven by the motivation effect of the superior other being ahead versus the demotivation effect of the superior other's goal attainment. We aimed to address this issue by adding two control conditions with no social comparison (i.e., participants were not informed of the other's goal progress but only of their own performance). Specifically, we predicted the following: (1) according to our theorizing and prior research on social comparison, comparison with a superior other who has not yet attained the goal should be more motivating than no comparison at all; (2) however, consistent with the competition literature that argues how competition can push motivation away from people's goal attainment (Malhotra 2010), we predicted a demotivation effect upon the other's goal attainment—namely, that comparison with someone who has attained the goal should be less motivating compared to no comparison at all.

Design and Procedure

A 2 (other's goal attainment: unattained vs. attained) × 2 (social comparison vs. control) between-subjects design was used in this study. Three hundred twenty-six Amazon Mechanical Turk (MTurk) workers were paid USD 0.70 to participate in this experiment. All participants were told that this study was about a grocery store's loyalty program, which was implemented to encourage consumers to purchase the store's private-label products (see also opening example). To make the scenario more vivid for participants, we included a brief description and some opening questions about private-label products (see web appendix A for full details). Participants read that in this loyalty program, they would earn one point for every purchase of private-label products in-store. Once they collected 100 points, they could get a free hotel accommodation and a dinner voucher in one of the selected US cities. One day, at the checkout, the cashier informed them about the number of points they had collected thus far. Participants in the social comparison condition were further told that while they were packing their groceries, they started chatting with another customer. During that conversation, they learned that this other customer was also interested in the city trip reward. We then manipulated the other's goal attainment by the number of points that both the participant and the other customer collected. Participants in the social comparison condition were presented with pictures of two receipts: one belonging to themselves and the other belonging to the other customer. In the goal-attained condition, participants were told that they had 80 points, while the other customer had collected 100 points and thus could redeem the reward. In the goal-unattained condition, participants had 60 points, while the other customer had collected 80 points (not eligible for the reward yet). Those in the control conditions were not provided with information about the other customer and hence did not engage in any social comparison. They were presented only with their own receipt, which had 80 points in the control-attained condition and 60 points in the control-unattained condition.

After reading this scenario, participants in all conditions responded to a two-item dependent measure that tapped into their motivation to pursue the goal. As the goal in this context was to purchase private-label products to collect further points, we measured their motivation by asking them how likely and motivated they would be to buy the grocery store's private-label products during their next shopping trip (1 = extremely unlikely/not motivated at all; 7 = extremely likely/ extremely motivated; $r = .86$). Lastly, after a number of filter items, participants were asked to complete the Interpersonal Competitiveness (IC) subscale of the Competitiveness Questionnaire (Griffin-Pierson 1990). This scale measures people's individual need to do better than others, their desire to win in interpersonal situations, and their enjoyment of interpersonal competition. The scale contains eight items that include, "I have always wanted to be better than others" ($\alpha = .85$).

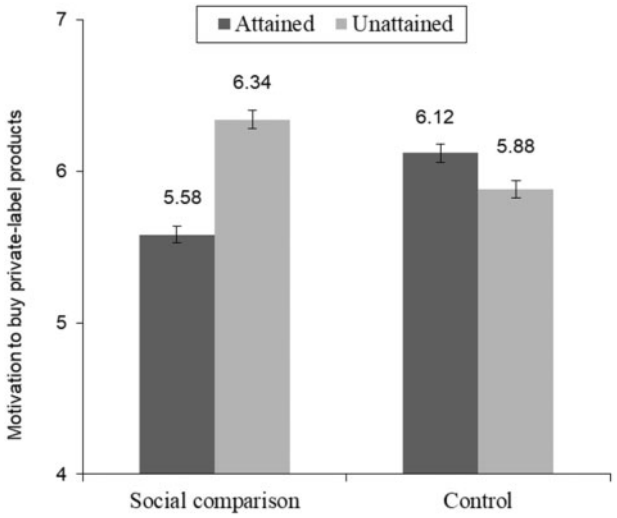
Results

Motivation to Buy Private-Label Products. We examined participants' motivation to purchase private-label products using a 2 (other's goal attainment: unattained vs. attained) × 2 (social comparison vs. control) ANOVA. Results of their motivation to buy private labels showed a significant two-way interaction ($F(1, 322) = 12.32$, $p = .001$; partial $\eta^2 = .04$, see figure 1). To provide support for the hypotheses, we performed three planned contrasts. First, we compared the two social comparison conditions (i.e., the goal-unattained and goal-attained conditions). Results showed support for hypothesis 1 that participants indicated a lower motivation to purchase the private-label products when they compared themselves with someone who attained the goal rather than someone who was just ahead ($M_{attained} = 5.58$ SE = .14; $M_{unattained} = 6.34$; SE = .13; $F(1, 322) = 14.51$, $p < .001$). Second, a planned contrast between the goal unattained and the control-unattained conditions, in both of which participants collected 60 points, showed that the motivation to purchase the private-label products increased when participants compared themselves with the superior who was just ahead versus no comparison ($M_{unattained} = 6.34$; SE = .13; $M_{control\_unattained} = 5.88$; SE = .14; $F(1, 322) = 5.29$, $p = .02$), thereby supporting our prediction and replicating previous findings on social comparison (Lockwood and Kunda 1997). Lastly, to further demonstrate support for the demotivating effect of the other's goal attainment, we compared the two conditions (attained and control-attained conditions) in which participants collected 80 points. In line with our prediction, results showed that comparing oneself with someone who had already attained the goal decreased one's motivation to purchase private-label products compared to the situation that did not involve a comparison ($M_{attained} = 5.58$; SE = .14; $M_{control\_attained} = 6.12$; SE = .14; $F(1, 322) = 7.09$, $p = .01$).

Competitiveness as a Moderator. Only the social comparison conditions are included here, as the control conditions did not receive any information about the other's performance. First, these two social comparison conditions did not significantly affect people's competitiveness ($F < 1$). Next, we analyzed motivation to purchase private-label products using a 2 (other's goal attainment: attained vs. unattained) × (competitiveness, measured) between-subject design. Results showed the predicted two-way interaction ($t(1, 123) = 2.08$; $p = .04$; partial $\eta^2 = .03$). To decompose this interaction, we used the Johnson-Neyman technique to identify the range of competitiveness for which the simple effect of the other's goal attainment was significant. In line with hypothesis 2a, the analysis

FIGURE 1

EXPERIMENT 2



revealed that participants whose scores on competitiveness was higher than 3.17 were less likely to purchase private labels when the superior other attained the goal as opposed to when that person was simply ahead ($b = .48$; SE $= .24$, $p = .05$), but no such difference in motivation emerged for participants whose scores on competitiveness were lower than 3.17.

Discussion

Using a loyalty program context, experiment 2 provided further support for our focal hypothesis (hypothesis 1) that people are less motivated in their goal pursuit when they compare themselves with someone who has achieved the goal rather than when the other person is simply ahead.

In addition, experiment 2 also demonstrated support for our hypothesis by using control conditions that did not involve social comparison. Consistent with prior literature that has demonstrated a positive effect of social comparison on motivation, people were in fact more motivated in their goal pursuit when they compared themselves with someone ahead versus when there was no comparison. However, in line with our reasoning, this positive effect emerged only when the superior did not yet attain the goal. Interestingly, social comparison (vs. no comparison) had a negative effect on motivation when the superior other had already attained the goal.

Finally, experiment 2 also showed support for our proposed framework by examining the individual difference in competitiveness. Within our framework, we proposed that the other's goal attainment is less motivating because it does not address people's desire to compete and hence be better than the others. The other's goal attainment should have a weaker effect on those who are inherently less competitive and hence have no desire to overtake the others. Results indeed showed that while people with higher competitiveness were less motivated by the other's goal attainment, this goal attainment had no effect on those who scored lower on competitiveness.

EXPERIMENT 3

Experiment 3 built on the previous experiments in two ways. First, experiment 3 tested hypothesis 2b by directly manipulating people's competitive motive, such that people who were primed with a competitive goal were expected to be less motivated by the other's goal attainment, while those who were primed with a cooperation goal were not expected to exhibit this lowered motivation. Second, this experiment also aimed to increase the generalizability of our findings in a different context. Similar to experiment 1, this study also used a context in which participants actually had to complete a task in which bogus performance feedback was given. Unlike experiment 1, which used time spent listening to classical music as a measure of participants' motivation, this study looked at their actual behavior in the task directly after receiving the feedback.

Design and Procedure

A 3 (goal: competition vs. cooperation vs. control) × 2 (other's goal attainment: attained vs. unattained) between-subjects design was used. Three hundred twenty-five MTurk workers were paid USD 1.50 to participate in this study. Participants were told that they would be asked to take part in different studies for different researchers. In the first study, participants were asked to engage in a word-completion task that assessed how people process language. Their task was to identify one or two missing letters for each word (e.g., _hoes). Following DeMarree et al. (2012), we manipulated the goal to compete versus cooperate using the words that participants had to complete. Out of the 32 words, 10 prime words were related to either competition (e.g., compete, victory, battle, best) or cooperation (e.g., cooperate, together, assist), whereas the other 22 filler words were unrelated to either competition or cooperation (e.g., cloud, bottle). Prime and filler words were presented in a random order. Participants in the control condition responded to 32 filler words.

After completing the word-completion task, all participants were asked to take part in another study that purportedly tested their mathematical skills in two parts (Huang and Zhang 2011). They would gain points for correctly answering each question in both parts. Their goal was to collect at least 100 points, which would qualify them as a good problem solver, which supposedly reflects how well

they solve problems in their daily life. They were further told that to increase their understanding of their performance in this task, they would be given interim feedback about their own and another MTurk worker's (anonymous) performance after the first part. In the first part, participants answered 10 mathematical questions (see web appendix B) by indicating their answers on a slider with numbered marks only on both ends. They were told that they would earn points depending on how close their answers were to the correct position on the slider. This procedure ensured that participants would be uncertain about their own performance and hence be more likely to rely on the performance feedback that they received after the first part (Huang and Zhang 2011). After finishing the 10 mathematical questions, participants were asked to wait while the computer was calculating their score for the first part. Subsequently, participants saw a feedback message on the screen. All participants were first reminded that they would be considered good problem solvers once they collected at least 100 points. We then manipulated the other's goal attainment in the remaining feedback. In the goal-attained (-unattained) condition, participants were told that they earned 80 (60) points while the other worker who started the study at the same time earned 100 (80) points. Thus, the other worker in the goal-attained condition already qualified as a good problem solver, while the other worker in the goal-unattained condition still needed to collect extra points to qualify. After the feedback, participants were told that they could continue to collect points in the second part. In this part, they were asked to provide exact answers to each question. When they answered incorrectly, a message would pop up and ask them whether they would like to try again or skip the question. We deliberately made the three mathematical questions in this part unsolvable and measured the time participants spent trying to figure out the answers as an indicator of their motivation. If participants were motivated to collect extra points, we expected that they would spend more time working on the unsolvable questions (Baumeister et al. 1998).

Thus far, we assumed that people perceive the chance to overtake the superior other as limited once the other person attains the goal. To test this assumption, we ran a separate post-test. The procedure closely followed that of the main study, except that participants did not fill in the word-completion task and worked on the mathematical task directly. One hundred nine MTurk workers were paid USD 1.00 to participate in this study, which used a 2 (others' goal attainment: attained vs. unattained) between-subjects design. After completing the first part of the mathematical test, participants saw a feedback message that manipulated the other's goal attainment, as in the main study. Subsequently, participants were asked about their perception of the possibility to compete using two items: (1) how likely they thought they could still overtake the other MTurk worker to qualify as a good problem solver and (2) how likely they thought they could outperform the other MTurk worker to attain the qualification ($r = .70$; 1 = extremely unlikely; 7 = extremely likely). Results showed that, as predicted, participants perceived that the chance to compete and overtake the superior other was limited when the other worker had already attained the goal ($M_{attained} = 4.07$; SE = .16; $M_{unattained} = 4.64$; SE = .21; $F(1, 107) = 4.88$, $p = .03$; partial $\eta^2 = .03$), thereby supporting our assumption that the other's goal attainment was indeed perceived to be detrimental to competition.

Results

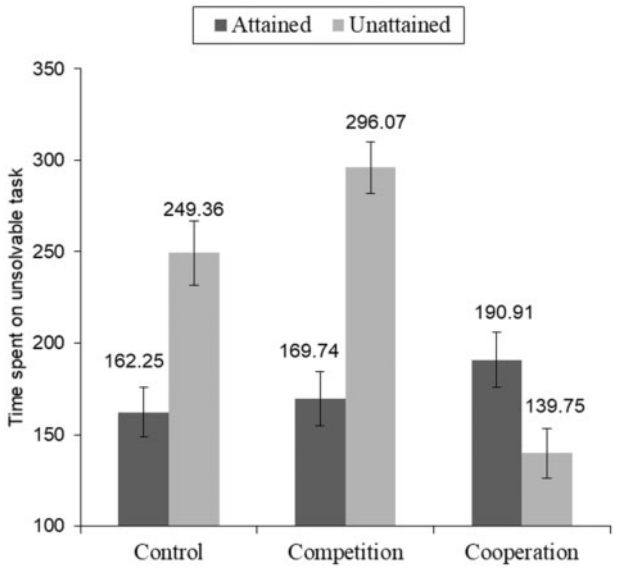
The time participants spent on the second part of the task in the main study was analyzed in the context of a 3 (goal: competition vs. cooperation vs. control) × 2 (other's goal attainment: attained vs. unattained) ANCOVA. We used the time that they spent on the first part of the mathematical task as a covariate to control for individual differences in effort and ability. As expected, results showed a significant interaction between the goal and the other's goal attainment ($F(2, 318) = 5.22$, $p = .01$; partial $\eta^2 = .02$, see figure 2). Replicating earlier results and in line with hypothesis 1, the planned contrast in the control condition showed that participants spent less time on the task when the other achieved the goal versus not ($M_{attained} = 162.25$; SE = 27.32; $M_{unattained} = 249.36$; SE = 35.36; $F(1, 318) = 3.80$, $p = .05$). In support of hypothesis 2b, the same results were found when the goal to compete was primed, such that participants spent less time in the goal-attained (vs. goal-unattained) condition ($M_{attained} = 169.74$; SE = 29.83; $M_{unattained} = 296.07$; SE = 28; $F(1, 318) = 9.53$, $p = .002$). In contrast, when the goal to cooperate was primed, the time spent did not differ, regardless of the other's goal attainment ($M_{attained} = 190.91$; SE = 30.12; $M_{unattained} = 139.75$; SE = 26.89; $F(1, 318) = 1.61$, $p = .21$), thereby further supporting hypothesis 2b.

Discussion

Experiment 3 extended our previous results. While experiment 2 demonstrated the moderating effect of trait competitiveness, this experiment showed support for our competition hypothesis by activating the goal to compete versus cooperate. We showed that when a cooperation goal was primed, we observed no difference in motivation, regardless of the other's goal attainment. On the other hand, participants were found to be less motivated upon the other's goal attainment when a competition goal was primed. Further and reassuringly, the other's goal attainment was again found to be less motivating even when competition was not explicitly primed, suggesting, as argued in the original theory of social comparison, that people have the natural drive to be better than the others (Festinger 1954).

FIGURE 2

EXPERIMENT 3



EXPERIMENT 4

Experiment 4 aimed to test the competition account via goal progress, as research has shown that competition intensifies with proximity to the goal. Conversely, in the beginning of goal progress, people tend to affiliate (rather than compete) in order to seek support and information from the superior others on how to proceed. Specifically, we test hypothesis 2c—namely, that under high goal progress, observing the other's goal attainment should be less motivating compared to observing the other simply being ahead. On the other hand, under low goal progress, observing the other's goal attainment should be more motivating compared to observing the other simply being ahead.

Design and Procedure

Two hundred sixty-eight MTurk workers participated in a 2 (other's goal attainment: attained vs. unattained) × 2 (progress: low vs. high) between-subject design in return for USD 0.50. The context of this study was a website on which people reinforce their commitment to a goal by publicly posting it online and connecting with other people facing similar challenge. Abundant examples can be found on the internet, like Lifetick.com and Stickk.com.

Participants were told to imagine that they loved reading books in their leisure time. The book that they wanted to read next was *Ulysses* by James Joyce. Although they were very interested in reading the book, the book was also considered to be one of the most challenging books to read. Therefore, they decided to motivate themselves to finish reading the book by posting this goal on a website. Then, they read a screenshot of the website that contained some basic information. In the description, they read that the website allowed them to post their goals and monitor their progress. Their friends and other users could share their stories and post words of encouragement to keep them motivated. After reading the brief description, they decided to post their goal (i.e., read *Ulysses*) on the website. They signed up for the account using the username "booktoread" and read the screenshot of their personal goal page. Because they just started reading the book, the screenshot of their initial goal page contained a progress bar and stated that they finished zero out of 18 chapters. Below their personal progress detail, there were two posts by other users of the website. The first post was by another user who wrote that the book was great but difficult to read. The second post, by a user called "joeyand," stated that s/he also started reading the book on the same day and ended by wishing participants "good luck" in reading the book.

On the next page, participants were told that after reading *Ulysses* for some time, they updated their progress on the website. The user (joeyand) who left them a comment earlier also sent a new message. They were then presented with an updated screenshot of their personal goal page in which we manipulated both goal attainment and goal progress. Goal progress was manipulated by the number of chapters that participants themselves finished reading. In the low-progress condition, participants were told that they finished reading six out of 18 chapters, while those in the high-progress condition finished 12 chapters. Next, they read the new comment that the other user (joeyand) posted on their goal website in which we manipulated goal attainment. In all conditions, this other user wrote that s/he had made very good progress. Specifically, participants in the goal-attained condition read that this user finished reading all 18 chapters. Those in the goal-unattained condition read that this user finished reading Chapter 10 in the low-progress condition and Chapter 16 in the high-progress condition. In other words, participants in both goal-unattained conditions read that the other user read four chapters more than them, irrespective of their own goal progress.

After reading this updated screenshot, participants answered two questions that measured their motivation to continue reading the book (*Ulysses*): (1) how motivated they would be to continue reading the book and (2) how much time they planned to devote to reading the book (1 = not at all motivated/not a lot of time; 7 = extremely motivated/a lot of time; $r = .65$).

Results and Discussion

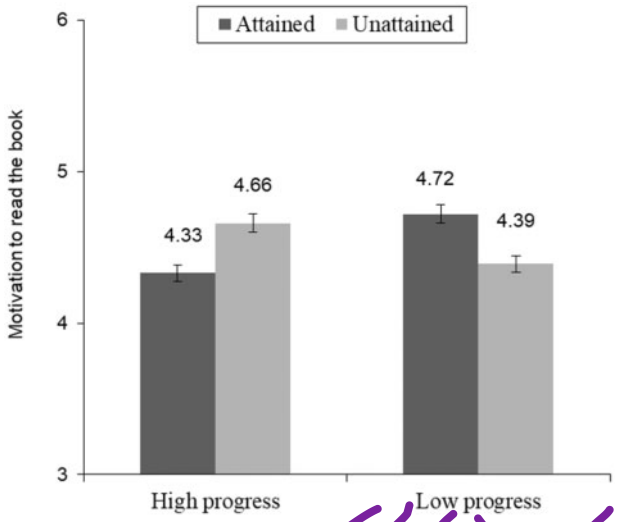
The goal in this study was to finish reading the book *Ulysses*. This goal should not be applicable to those who already completed the entire book. Therefore, at the end of

the survey, we asked participants whether they had read this book before. Twenty participants (7.4%) reported having read the book, and hence were dropped from further data analyses. We conducted the analyses on the remaining participants ($n = 248$).

Motivation. The motivation to continue reading the book was analyzed in the context of a 2 (other's goal attainment: attained vs. unattained) × 2 (progress: low vs. high) between-subjects design. Results revealed the predicted two-way interaction ($F(1, 244) = 8.36$; $p = .004$; partial $\eta^2 = .03$, see figure 3). Subsequent planned contrasts revealed that in line with hypothesis 2c, when the progress level was high, participants who compared themselves with another person who attained the goal were less motivated to finish reading the book than those who compared themselves with another person who was simply ahead of them ($M_{attained} = 4.33$; SE = .11; $M_{unattained} = 4.66$; SE = .12; $F(1, 244) = 4.27$; $p = .04$). Conversely, when the progress level was low, participants in the goal-attained condition were more motivated compared to those in the goal-unattained condition ($M_{attained} = 4.72$; SE = .12; $M_{unattained} = 4.39$; SE = .11; $F(1, 244) = 4.10$; $p = .04$).

FIGURE 3

EXPERIMENT 4



Discussion. Prior research has shown that people are more competitive in high rather than intermediate rankings (Garcia et al. 2006; Huang et al. 2015) and thus the desire to compete should be more prominent when they are closer to (vs. further away from) goal attainment. Accordingly, the other's goal attainment should be less motivating in high (vs. low) progress situations. Results of this experiment supported this theorizing. In particular, when people are close to attaining their goal, observing someone else attaining the goal is less motivating than observing someone else simply being ahead. Interestingly, opposite results were found in the low progress situation. When people were far away from attaining the goal, the other's goal attainment was more motivating. Such findings are consistent with research on admiration and affiliation (Algoe and Haidt 2009; Huang et al. 2015; Keltner and Haidt 1999), showing that in uncertain situations (e.g., low progress situation), people want to affiliate with others who attained the goal successfully, so as to be inspired and obtain useful information about how to proceed. This in turn can motivate them to pursue their own goal.

EXPERIMENT 5A

Results obtained thus far were based only on the comparers' performance in the focal task. Experiment 5A tested hypothesis 3a, which proposed that observing the other's goal attainment should motivate people to work hard on a subsequent new task, provided that this new task is related to the focal task and thus offers them a new opportunity to overtake the superior other. Looking at how comparers perform in the subsequent task can also help us determine the role of goal contagion in the current framework. As discussed earlier, goal contagion research has argued that observing the other's goal attainment leads to a feeling that people themselves have also attained the goal and hence reduces people's motivation, compared to when people do not observe the other's goal attainment (Aarts et al. 2004; McCulloch et al. 2011). However, in our study, we argued that the other's goal attainment is not motivating because it does not fulfill people's motivation to compete. If the former account of goal contagion holds, we should not expect motivation to increase in a subsequent and related task, because once people perceive that they attained the goal through the other's goal attainment, the goal should be inhibited and no longer influence their subsequent performance (Förster, Liberman, and Higgins 2005). However, if our account of competition is valid, the motivation should increase when people work on a subsequent and related task, as such a task provides them with a new opportunity to address their motive to compete and overtake the superior other. Note that this question is not addressed in experiment 1, because the comparers in experiment 1 were not provided with the opportunity to advance to the next level to compete with the superior other.

In order to increase the generalizability of our findings, this experiment used a different manipulation of the superior other's goal attainment. To keep the relative distance the same in previous experiments, the performance of both the participants and the comparison targets differed (e.g., 100–80 vs. 80–60). In this experiment, we held the performance of both the participants and the comparison targets

constant across conditions but manipulated whether the other's performance was equal to the end goal.

Design and Procedure

Experiment 5A used a 2 (other's goal attainment: attained vs. unattained) × 2 (task relatedness: unrelated vs. related) between-subjects design. Two hundred twenty-six MTurk workers participated in this experiment in exchange for USD 0.80. Participants were first asked to complete a Remote Association Test (RAT) that purportedly tested how well they could find links or make associations among various concepts. In the test, they were asked to come up with one word that could link the three words provided in each question. They were given two examples (e.g., falling, actor, dust; answer = cold), and were told that they could earn points depending on how close their answer was to the correct one. The points that they gained would determine whether they could be classified as a "creative associative thinker." To strengthen the appeal of obtaining the status of a creative thinker, participants were further told that research has shown that creative thinkers are good at coming up with novel ideas, which is an important quality in many aspects of life and work. They were then informed that to enhance their understanding of their performance, they would be given interim feedback about their own and another MTurk worker's (anonymous) performance after the first part. After reading the introduction, participants started answering the first eight RAT questions. Subsequently, they were asked to wait while their performance was scored. In the feedback, we manipulated the other goal's attainment. We held the performance feedback constant across conditions but manipulated whether the other's performance was equal to the end goal. In both goal attainment conditions, participants were told that they obtained 60 points, whereas the other participant obtained 80 points. Only in the goal-attained condition, we mentioned that 80 points were required to be labeled "a creative thinker." In the goal-unattained condition, no further information about the end goal was provided. After reading the feedback, participants continued with the test, which consisted of another eight RAT questions. Note that these RAT questions were labeled "hard" on the RAT website (http://www.remote-associates-test.com/). If participants were motivated to do well on this task, we expected that they would spend more time working on these difficult questions (Baumeister et al. 1998). Accordingly, the time that they spent on this second part of the RAT was used as a measure of their motivation.

After finishing the RAT test, participants were told that all participants, including the other worker about whom they received feedback earlier, would take part in a new task in which they could collect a new set of points by identifying the correct missing piece from a series of visual patterns. Then, following the procedure of Bosmans, Pieters, and Baumgartner (2010), the task relatedness manipulation was introduced. Participants in the task-related condition were told that the new task was related to the previous task, which was also a kind of association test that used the same underlying psychological processes. Participants in the task-unrelated condition read that this new task was unrelated to the previous task; thus, different underlying psychological processes were used. After the task relatedness manipulation, participants were asked to collect as many points as possible by answering eight questions based on visual patterns. Similar to the second part of the RAT task, this visual task consisted of questions for which the answers were ambiguous. Therefore, we again used the time they spent on this visual task as a measure of their motivation to do well.

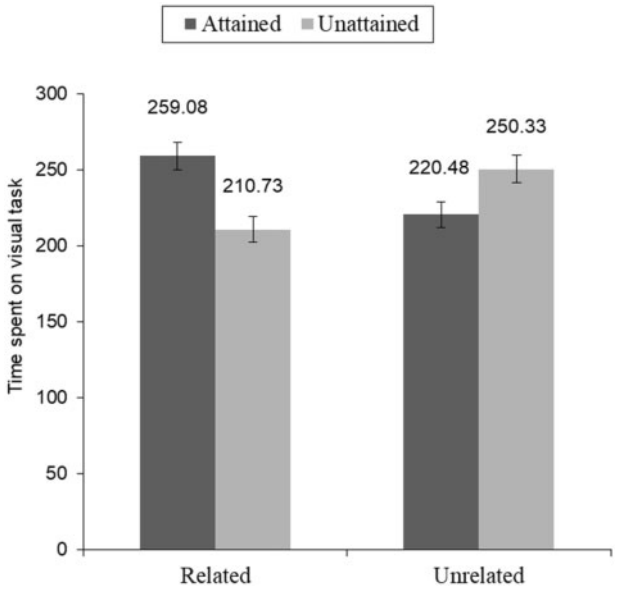
Results

Time Spent on the Second Part of RAT. The data were analyzed using a 2 (other's goal attainment: attained vs. unattained) × 2 (task relatedness: unrelated vs. related) ANCOVA. The time that they spent on the first part of the RAT task was used as a covariate to control for individual differences in effort and ability. Since participants completed the second part of the RAT task before the manipulation of task relatedness, the nature of the new task was not expected to influence their motivation to complete the second part of the RAT task. Accordingly, results showed only a main effect of the other's goal attainment ($F(1, 221) = 3.94$, $p = .048$; partial $\eta^2 = .02$). Replicating the previous findings, and in support of hypothesis 1, the time spent (in seconds) on the second part of the RAT task was lower in the goal-attained condition ($M = 165.27$; SE = 8.11) than in the goal-unattained condition ($M = 188$; SE = 8.07).

Time Spent on Visual Task. We analyzed the average time that participants spent on the visual task using a 2 (other's goal attainment: attained vs. unattained) × 2 (task relatedness: unrelated vs. related) ANCOVA. The time that they spent on the previous RAT task was used as a covariate. Results showed a significant interaction between goal attainment and task relatedness ($F(1, 221) = 4.84$, $p = .03$; partial $\eta^2 = .02$, see figure 4). Planned contrast supported hypothesis 3a—namely, that participants in the task-related condition spent considerably more time on the visual task when they read that the other person had achieved the goal in the previous task as opposed to not achieved the goal ($M_{attained} = 259.08$; SE = 18.03; $M_{unattained} = 210.73$; SE = 17.25; $F(1, 221) = 3.72$, $p = .055$). On the other hand, the other's goal attainment did not have a significant effect on the time spent when the new task was unrelated ($M_{attained} = 220.48$; SE = 17.15; $M_{unattained} = 250.33$; SE = 18.09; $F(1, 221) = 1.43$, $p = .23$).

FIGURE 4

EXPERIMENT 5A



Discussion

While using a different manipulation of the other goal's attainment, experiment 5A replicated our earlier findings that observing the others' goal attainment decreased people's motivation in the focal task. Interestingly, it increased their motivation to work on a subsequent and related task, as only the related task provided a new opportunity to address the goal to compete in a dimension in which they were previously defeated. This is consistent with goal literature that has shown that goals (i.e., the goal to compete in this context) remain active until they are fulfilled (Bargh et al. 2001).

EXPERIMENT 5B

While the results of experiment 5A supported our hypothesis by showing that motivation increases when the new task provides an opportunity to address people's motive to compete in a related domain, experiment 5B tested hypothesis 3b—namely, that the motivation to work on a subsequent and related task should prevail only when people are competing with the same superior other who once defeated them before. Besides providing support to hypothesis 3b, this study also addressed the goal contagion account. Although results of experiment 5A showed support for the competition account, one could also argue for a more nuanced perspective that once people think that they have attained the goal, they feel more confident to perform well in a new and related task, which can be an alternative explanation for why we observed an increase in motivation in experiment 5A. Experiment 5B addressed this issue by manipulating whether people were competing with the same or a different person. If goal contagion is valid, the motivation should remain the same, regardless of whether they are competing with the same or a different person in the new task because in both situations they should feel more confident about their ability to perform in this related task. On the other hand, if our competition account is true, we should expect that observing the other's goal attainment increases motivation in the new task only when people perceive that they are going to compete with the same person again (i.e., hypothesis 3b).

Another aim of experiment 5B was to address one potential limitation of experiment 5A. In experiment 5A, we used a different manipulation of the other's goal attainment. Specifically, we held the relative distance between the comparer and the superior other the same but manipulated whether the other's performance was equal to the end goal. Although we demonstrated convergent findings using this new manipulation, one possible criticism is that this manipulation was confounded with the amount of information given. While participants in the attained condition were informed of the end goal, those in the unattained condition did not have a specific end goal. To ensure that the results of experiment 5A were not caused by this confounding factor, experiment 5B aimed to replicate the earlier results using the manipulation that was used in experiments 1–3: namely, to manipulate the performance of both the participants and the comparison targets (i.e., 100–80 vs. 80–60).

Design and Procedure

This study used a 2 (the other's goal attainment: unattained vs. attained) × 2 (comparison other: same vs. different) between-subjects design. Two hundred twenty-nine participants from the Prolific panel participated in this experiment in exchange for GBP 1.00. The procedure of this experiment followed closely that of experiment 5A. Participants were also told to take part in a RAT and earn points depending on how close their answer was to the correct one. Similar to experiments 1 through 3, all participants were given explicit information about the end goal. Specifically, they read that the goal was to collect at least 100 points, which would qualify them as a "creative associative thinker." After finishing the first part of RAT, they were given interim feedback in which we manipulated the other's goal attainment. Similar to the earlier studies, participants in the goal-attained (-unattained) condition were told that they earned 80 (60) points, while the other participants who started the study at the same time earned 100 (80) points. After reading the feedback, they continued

with the second part of the RAT. We again used the time that they spent on the task as a measure of their motivation.

After finishing the RAT, participants were told to take part in a new study that was based on visual patterns. This study followed the related task condition in experiment 5A, so participants in all conditions were told that they could collect a new set of points in this new task that used the same underlying psychological processes as the RAT. Unlike experiment 5A, this experiment manipulated the identity of the comparison other. Participants in the same comparison target condition read that the Prolific participant about whom they received feedback would also take part in this new task. On the other hand, participants in the different comparison target condition read that a Prolific participant who joined a different study before (not the same association task they just finished) would take part in this new task. After this manipulation, participants took part in the visual task. We also used the time they spent on this task as a measure of their motivation to do well.

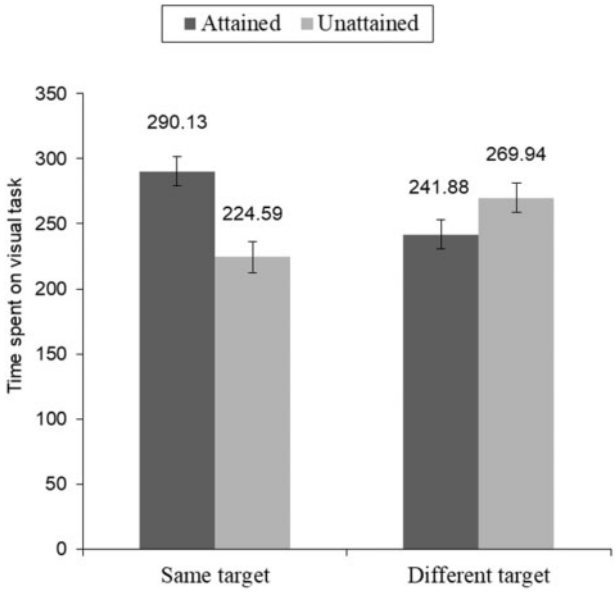
Results

Time Spent on the Second Part of the RAT. Their time spent was analyzed using a 2 (other's goal attainment: attained vs. unattained) × 2 (comparison other: same vs. different) ANCOVA. The time that participants spent on the first part of the RAT task was used as a covariate to control for individual differences in effort and ability. Similar to experiment 5A, there was a main effect of the other's goal attainment ($F(1, 224) = 6.62$, $p = .01$; partial $\eta^2 = .03$). Replicating the previous findings and consistent with hypothesis 1, participants in the goal-attained condition ($M = 179.60$; SE = 15.84) spent less time on the second part of the RAT compared to those in the goal-unattained condition ($M = 236.62$; SE = 15.48).

Time Spent on Visual Task. The average time that participants spent on the visual task was analyzed using a 2 (other's goal attainment: attained vs. unattained) × 2 (comparison other: same vs. different) ANCOVA. The time that they spent on the previous RAT task was used as a covariate. Results revealed a significant interaction between the other's goal attainment and comparison other ($F(1, 224) = 4.26$, $p = .04$; partial $\eta^2 = .02$, see figure 5). Planned contrast supported hypothesis 3b in that when participants compared again with the same superior other, they spent more time on the visual task upon observing the other's goal attainment as opposed to not observing the other's attainment ($M_{attained} = 290.13$; SE = 22.49; $M_{unattained} = 224.59$; SE = 23.79; $F(1, 221) = 3.97$, $p = .047$). However, the other's goal attainment did not significantly increase the time spent on the visual task when they now compared themselves with a different target ($M_{attained} = 241.88$; SE = 22.35; $M_{unattained} = 269.94$; SE = 22.27; $F < 1$).

FIGURE 5

EXPERIMENT 5B



Discussion

Experiment 5B extended the earlier findings of experiment 5A in two directions. First, using the same manipulation that was implemented in earlier studies (i.e., experiments 1 to 3), this study again replicated our main finding that observing the other's goal attainment is less motivating compared to observing the other simply being ahead. Further, using the same setting as in experiment 5A, we similarly showed that when people could again compare with the same comparison target, the other's goal attainment increased people's motivation to work on a subsequent and related task. The convergent findings in both experiments 5A and 5B hence increase the confidence that our earlier findings in experiment 5A were not the result of a different manipulation of the other's goal attainment. Second, the aim of this experiment was to further examine the role of goal contagion in the current context. The literature on goal contagion has argued that observing the other attaining the goal makes people perceive that they themselves have also attained the goal (Aarts et al. 2004). This perception of attaining the goal themselves should in turn inhibit the focal goal and hence should not influence people's motivation in subsequent goal pursuit. Contrary to this perspective, experiments 5A and 5B consistently showed that observing the other's goal attainment increased people's motivation in a new task, on the condition that they were competing with the same comparison target in a related task. This finding is consistent with the

competition account. As the goal to compete is not entertained in the focal task due to the other's goal attainment, its strength should increase over time and hence boost motivation in a new and related task (Bargh et al. 2001), which was shown in both experiments 5A and 5B.

GENERAL DISCUSSION

When trying to achieve goals, consumers are often surrounded by others who are trying to reach similar goals. Even more so now, since the advance of technology and social media, consumers can easily interact and compare with others who are pursuing similar goals. Since people have a general tendency to compare themselves with others, the question is what happens if they compare their goal progress with that of others. This research has tested consumers' motivation to pursue a goal in response to upward social comparison. Across six experiments, we have consistently demonstrated that holding the relative distance between people and the superior others constant, observing others' goal attainment is less motivating than observing others simply being ahead. We put forward and demonstrated that this effect occurs because the superior others' goal attainment does not provide an opportunity to compete. Within a real computer game context, experiment 1 provided initial evidence that people were less motivated in their goal pursuit when they compared themselves with someone who had achieved the goal rather than with someone who was simply ahead. It also ruled out the alternative account of whether the other's goal attainment renders the superior other an irrelevant comparison target. In the context of a loyalty program, experiment 2 provided converging evidence that people were less motivated after observing the other's goal attainment (vs. being simply ahead) and that this difference was driven by both a motivation effect of the other being ahead and a demotivation effect of the other's goal attainment. Further, this effect disappeared for people with a low desire to compete. Experiment 3 provided more direct evidence for the proposed competitive account. Looking at goal motivation in real task completion, we found that the negative effect of other's goal attainment was evident when people were not primed or were primed with a goal to compete, but it disappeared when a cooperative goal was primed. Experiment 4 tested a different moderator akin to the underlying process, specifically goal progress. Consistent with the notion that competitive behavior intensifies with proximity to goal attainment, people were less motivated by the other's goal attainment when the progress level was high but not low. Finally, experiments 5A and 5B looked at the consequence of the other's goal attainment on a new task and showed that the negative effect of the other's goal attainment reversed when people had the chance to compete with the same superior other on a subsequent and related task.

The major contribution of this research is that it provides a new perspective on how people react to upward social comparison when the superior other has already achieved the goal. Prior work on social comparison suggests that motivation is driven by the motive to achieve the position comparable to that of the superior (Lockwood and Kunda 1997; Van de Ven et al. 2011a). As a result, the other's goal attainment should have no influence on one's own motivation, as long as the superior other's position is perceived as attainable. The current research, however, builds on competition literature to propose that the other's goal attainment is demotivating, because it cannot help people fulfill their motive to compete. While this research has focused mainly on comparing the effect of observing others' goal attainment with that of observing others simply being ahead, we also demonstrated that observing the other's goal attainment can have negative effects on motivation as opposed to a situation in which no social comparison takes place. In essence, this finding is consistent with prior research on competition, which suggests that people are sometimes willing to sacrifice their personal gains to obtain a higher relative position (Malhotra 2010; Solnick and Hemenway 1998). However, as suggested by the competition literature, the power of competition should also depend on how painful that social comparison is (Garcia and Tor 2007). When the comparison is in a domain that is important and relevant to the self, it should be particularly painful and hence trigger stronger competitive behavior (Garcia and Tor 2007; Tesser 1998). In study 2, participants perceived the city trip reward to be important, as it was rated to be highly attractive (rated 5.62 on a seven-point attractiveness scale). This also implies, however, that if the goal is perceived to be less important, it might be easier to undo the less painful social comparison (Gilbert et al. 1995), and hence we might not see such a destructive effect of competition. In support of this, we ran another study (see web appendix C) that looked at a goal that was only moderately attractive—namely, the goal that required people to collect stamps to redeem a free coffee (rated 4.52 on a seven-point attractiveness scale). We replicated the main findings of this research, showing that observing the other's goal attainment (i.e., enough stamps to redeem a free coffee) was less motivating compared to observing the other simply being ahead (i.e., more stamps but not yet enough to redeem a coffee). Interestingly, though, in such a moderately attractive goal, social comparison with someone who attained the goal did not significantly lower people's motivation compared to the no-comparison condition. Therefore, it seems to suggest that upward social comparison that does not address the goal to compete is certainly less motivating than the comparison that does provide such an opportunity. However, whether the other's goal attainment can be strongly demotivating compared to no comparison might depend on other factors (e.g., importance of the domain), which should be addressed in future research.

This research also contributes to the literature on competition. Prior work on competition has typically assumed that the motive to compete occurs in situations characterized by negative interdependence (Norton, Lamberton, and Naylor 2013). Similarly, research on positional concerns has mostly looked at domains that are inherently competitive, like status and conspicuous consumption (Durante et al. 2011; Ordabayeva and Chandon 2011) or "type B" goods in which relative desirability matters (e.g., diamond size; Hsee et al. 2009). Our research shows that competition is more common and pervasive than what is generally assumed in the literature. Across six studies, we looked at goals in a non-zero-sum game setting, such that the other's goal attainment had objectively no negative consequences on people's own goal pursuit. For instance, the likelihood of obtaining a free reward in experiment 2 or finishing reading a book in experiment 4 was independent of the other's reward progress or reading skills. Further, unlike status and conspicuous consumption, we used goals (e.g., enjoying a free reward in a loyalty program) that do not have a strong social component and hence are not inherently competitive. Yet we demonstrated that the motive to compete and overtake can be evident even in situations where negative interdependence and relativity should not matter.

Implications for Other Literatures and Future Research

Although our research provides evidence for the proposed underlying mechanism through moderators that are theoretically derived from the competition account, our effects might have been at least partly driven by alternative mechanisms. First, while some of our findings might still seem in line with goal contagion (Aarts et al. 2004; McCulloch et al. 2011), both studies 5A and 5B directly provided evidence to the contrary. In addition, an important difference lies in the contexts that we studied. Goal contagion does not implicate a social comparison component, as at the time of observing the other's goal attainment, observers have not even started working on their goal. On the other hand, our research looked at situations where both the comparer and the superior other are pursuing the same goal at the same time; hence, their performance could be compared directly. Owing to this difference in contexts, our explanation in terms of "competition" has not been examined in the goal contagion literature (McCulloch et al. 2011; Tu and Fishbach 2015).

Second, seeing somebody else having attained the end goal might make the goal seem less attractive or less special. Research in need for uniqueness has shown that highly unique consumers prefer unique products (Simonson and Nowlis 2000). It might suggest that seeing somebody else attain the goal could signal that the goal is not unique anymore, which in turn makes the goal less attractive and decreases the motivation to attain it. Note that this need for uniqueness normally influences behavior in a domain that is perceived to be a symbol of identity (e.g., hairstyle; Berger and Heath 2007). However, the goals that we looked at in the current research are less likely to be used to infer identity. For instance, obtaining a free reward from the loyalty program in experiment 2 or finishing reading a book in experiment 4 do not necessarily belong to the identity domain; hence, the need for uniqueness is likely not the main driver of our results. To examine the role of uniqueness directly, we included a measure of the need for uniqueness in a follow-up experiment reported in the web appendix. At the end of the study, participants responded to the nine-item need for uniqueness scale measured on a seven-point scale ($\alpha = .98$; Tian, Bearden, and Hunter 2001). If our results are driven by uniqueness, we would expect this effect to be stronger among those who have a high need for uniqueness. Results did not show any significant interaction ($t(1, 123) = -.48$; $p = .63$); therefore, they are not likely to be driven by the pursuit of a unique goal.

Third, it is also possible that the superior other's goal attainment inhibits goal motivation because it makes the goal appear less attainable or it makes the distance to the end goal appear larger. While this prediction is plausible, prior research has in fact demonstrated the opposite effect: that seeing a similarly successful person increases people's expectation of their own success (Mandel, Petrova, and Cialdini 2006) and thus makes the goal appear easier to attain. In support of this prediction, experiment 4 found that when people were far away from reaching their goal, others' goal attainment had a motivating effect on goal pursuit. We proposed that this positive effect upon others' goal attainment was due to the fact that under low goal progress, uncertainty is high, which makes people more likely to affiliate (rather than to compete) with superior others with the aim to seek support and information on how to proceed.

Related to this affiliation motive, an interesting question is whether the desire to compete also depends on the relationship between the targets and the superior other. For instance, Lockwood et al. (2004) found that upward social comparison within romantic relationships is less threatening when people are closer to the more successful partner because the other's success is treated as a kind of self-affirmational resource. Altogether, this implies that the closeness of the relationship could moderate the effects found in this study. The desire to compete could be less salient when people compare themselves with close others (e.g., friends, romantic partner). In an upward comparison with close others, people might be more motivated to affiliate or even feel good by focusing on relationship-related strengths.

Finally, our studies thus far looked at the social context in which people are pursuing the same goal. Examples of such goal contexts are abundant in daily life (e.g., weight

loss, fitness, gaming, aiming for an award, studying). However, in some contexts, people might aim for slightly different goals. For instance, while a very smart student might aim to get an A+, an average student might be aiming for a B+. In this situation, the fact that the very smart student got an A might not reduce the motivation of the average student, because the average student might not perceive the very smart student to be a competitor. It would be interesting for future research to examine the role of competition on the different types of goals that people have in interpersonal goal pursuit.

Practical Implications

Our research has shown that upward social comparison with a superior other who has attained the end goal can be detrimental for goal progress, which has implications for marketing managers and public policy. Our studies already demonstrated its effect in loyalty programs, but the results could also be meaningful for advertisers. For instance, our findings suggest that a better strategy would be to simply stress that many people make good progress in trying to attain the desirable end state rather than depicting winners who already attained the common end goal. Based on the context used in experiment 1, our results may also be incorporated by online game developers. Online games sometimes feature different levels of rewards to motivate players to continue playing and advancing in the game. Our research suggests that to keep players motivated, game developers could advertise the number of people who are about to reach the next level of rewards rather than the number of people who have already attained it. Additionally, in public policy and health management, people may find it easier to pursue their health, fitness, and dieting goals, or even recover from an addiction, if they are confronted with others who are still working toward the same goal but are just ahead of them rather than ideal exemplars who have already achieved their final goal. Programs such as Weight Watchers or Alcoholics Anonymous may benefit from testimonials of people "being just ahead." On a final note, our results may be useful for everybody who wants to stay motivated to pursue a relevant goal, even for the academics who strive to get tenure. We are all subject to social comparison, but when it comes to goal attainment, it seems that we are better off comparing ourselves with a superior who is just ahead than with somebody who has already reached the end state.

DATA COLLECTION INFORMATION

Experiment 1 (October 2017) was conducted at Nanyang Technological University by research assistants. The data for experiment 2 (May 2018), experiment 3 (August 2017), the post-test of experiment 3 (May 2018), experiment 4 (June 2016), and experiment 5A (June 2016) were collected using the Mechanical Turk panel. The data for experiment 5B (December 2017) were collected using the Prolific panel. The first and second author supervised the collection of the data. The first author solely analyzed the data of all studies.

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