Teetering between Cooperation and Competition:

Social Comparisons and Peer Nominations

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TEETERING BETWEEN COOPERATION AND COMPETITION

Abstract
Within organizations, individuals both collaborate with peers in pursuit of common goals and compete with those same peers for rewards and promotions. Whether individuals perceive their peers in competitive or collaborative terms can fundamentally influence important organizational interactions and decisions. In this work, we document the prevalence of these labile relationships and we describe how subtle cues can shift individuals from identifying their peers as collaborators to identifying them as competitors. We demonstrate that prompting individuals to engage in a social comparison can generate envy and profoundly influence their willingness to nominate others for performance recognition. In a field experiment, we show that a social comparison cue reduces co-worker award nominations by 60%. In a laboratory study, we show that these cues reduce collaborators’ willingness to nominate one another when they are members of poorly performing groups, but that this effect is attenuated for highly effective groups. We discuss implications of these findings and highlight the importance of labile organizational identities for employee award programs and the broader managerial challenge of promoting collaboration in the workplace.

Keywords: competition; collaboration; identity; social comparison; rivalry; groups
“[My colleague and I] work as a team in troubleshooting IT problems. There was an opening in the data department for an IT Specialist for which I had applied. [My colleague] told me that I should have ignored the job post because the company was looking to hire from outside the company. A few days later I found out that [this colleague] had applied for the same position that he had warned me against and that the company had every intention of hiring from within.” –Anonymous Study Participant

A fundamental tension exists within organizations as co-workers navigate their interpersonal interactions. The same colleague who is a collaborator on important projects is often a competitor for promotions, compensation, and recognition. To understand co-worker interactions, we argue that it is critical to conceptualize peers in the workplace not as collaborators or competitors, but rather as both collaborators and competitors.

Substantial, but largely separate literatures have studied collaboration (e.g., Hackman, 2002; Tyler and Blader, 2001) and competition (e.g., Becker and Huselid, 1992) in the workplace. This work has developed our understanding of how to improve collaboration and of the benefits and risks associated with competition. We build on this foundational work, but we argue that a dynamic conceptualization of workplace relationships is needed to account for the shifting and unstable nature of co-worker associations.

Relationships between colleagues are fundamentally labile, and in this paper, we document and describe this phenomenon. We demonstrate that subtle social comparison cues can shift individuals from identifying their peers as collaborators to identifying their peers as competitors or rivals (Kilduff, Elfenbein and Staw, 2010). Past work has revealed the destructive role that social comparison-induced envy can play in organizations (Schaubroeck and Lam, 2004; Cohen-Charash and Mueller, 2007; Dunn, Rudey and Schweitzer, 2012), and we build on this research to show that organizational relationships are unstable and that the line between cooperation and competition is thin.

We motivate our investigation by documenting the prevalence of workplace relationships that involve both collaboration and competition. In a field setting and a laboratory study, we demonstrate that subtle social comparison cues shift people from cooperation to competition. We show that social comparison cues both induce envy and curtail an important, collaborative organizational behavior:
nominating peers for deserved rewards. In addition, we find that social comparison cues are particularly harmful to this cooperative organizational behavior when collaborations are ineffectual.

**Competition and Collaboration in Organizations**

Collaboration is critical to the success of modern organizations. In almost every sector of the economy, vital work is accomplished through collaboration (Devine, Clayton, Philips, Dunford, and Melner, 1999; Gordon, 1992; Lawler, Mohrman, and Ledford, 1995; Mohrman, Cohen, and Mohrman, 1995; Ilgen et al., 2005; Edmondson and Nembhard, 2009). In fact, more than 50% of employees at organizations in the U.S. report spending a portion of their workday in collaborative groups (Steward, Manz, and Sims, 1999). As Wal-Mart CEO and Founder Sam Walton explained, “individuals don’t win in business, teams do. We’re all working together, and that’s the secret” (Carpenter and Coyle, 2011).

A substantial literature has explored how to develop the most effective collaborations in organizations (see for example Hackman and Katz, 2010; Thomas-Hunt and Phillips, 2003; Bhappu, Zellmer-Bruhn, and Anand 2001; Levine and Moreland, 1998; Edmondson, Dillon and Roloff, 2007; Tyler and Blader, 2001). Research in this area demonstrates, for example, that increasing familiarity among group members improves collaborative outcomes (Huckman and Staats, 2011; Huckman, Staats, and Upton, 2009; Gruenfeld, Mannix, Williams and Neale, 1996), and that group norms that focus on shared interests (Chatman, Polzer, Barsade and Neale, 1998) and value critical thinking (Okhuysen and Eisenhardt, 2002; Postmes, Spears and Cihangir, 2001) enhance productivity. Structural characteristics, such as group size (Menon and Phillips, 2011) and reward systems (Johnson, et al., 2006; Beersma et al., 2009) have also been shown to influence how effectively groups cooperate. In short, a considerable body of work has developed our understanding of how to make collaborations more effective.

A largely separate literature has deepened our understanding of competition in organizations. Within organizations, employees frequently compete with one another for rewards, status and recognition (Anderson and Kilduff, 2009). Competition is an enduring feature of organizations, and competition can be both constructive and destructive (Kilduff et al., 2010; Beersma et al., 2003). Competition can improve performance (Becker and Huselid, 1992; Eriksson, 1999; Tjosvold, Johnson, Johnson and Sun, 2003;
Vidal, and Nossol, 2011), especially when organizations reward constructive behaviors that require effort (Kerr, 1975; Drago and Garvey, 1998). However, competition can also promote harmful behaviors, such as lying and cheating (Kohn, 1992, 1993; Schweitzer, DeChurch and Gibson, 2005; Kilduff, Galinsky, Gallo and Read, 2012) as well as increased risk-taking (Becker and Huselid, 1992) and reduced accuracy (Beersma et al., 2003).

Existing research has primarily investigated the constructs of competition and collaboration separately (see for example Becker and Huselid, 1992 on competition and Hackman, 1990 on collaboration). Implicitly, the literatures on cooperation and competition have presumed that individuals classify their situated social identity with respect to their co-workers as fixed—a given colleague is either a collaborator or a competitor. We challenge this assumption. We argue that in many cases, co-workers adopt identities as both collaborators and competitors. As a result, it is critically important to understand how individuals navigate these labile relationships and what forces shift individuals back and forth between cooperation and competition.

Social identity theory suggests that individuals hold numerous identities (Hogg and Terry, 2000). Individuals shift between their identities according to their context, their motivation, and accessible psychological cues (see Wiesenfeld and Hewlin, 2003 for a discussion). These multiple identities enable individuals to adapt to different situations. In this work, we focus on the previously unexplored way in which members of organizations shift between two specific types of identities: collaborators and competitors.

Cues that Trigger Competition in Organizations

There are many cues in organizations that are likely to shift the balance between collaboration and competition. For example, employees in organizations often vie with one another for promotions, awards, bonus pay, and resources (such as a preferred work shift). The processes organizations use to allocate these outcomes are inherently competitive.

Past research has shown that even small contextual cues can profoundly influence how competitively individuals encode their relationships (Kilduff et al., 2010). For example, describing the
prisoner’s dilemma game as “The Wall Street Game” triggers significantly more competitive behavior than describing the same game as “The Community Game” (Lieberman, Samuels and Ross, 2004). Similarly, contextual cues, such as a target’s similarity to one’s self, the frequency of competitive interactions, and the extent to which past competitions have been evenly matched can promote rivalry and aggressive competition (Kilduff et al., 2010). This past research suggests that subtle cues in organizations may be powerful enough to cause individuals to reframe their relationships and shift their identities from “collaborator” to “competitor.”

We study contexts in which collaborative and competitive rewards co-exist, and we describe how one type of subtle cue can shift individuals from a cooperative orientation to a competitive one. Specifically, we explore the impact of upward social comparison cues, which we operationalize as prompts to imagine a colleague winning a desirable performance award.

Upward social comparisons are unpleasant and can threaten an individual’s self-image (Tesser, Millar, and Moore, 1988). According to Tesser’s (1988) self-evaluation maintenance model (SEM), upward social comparisons are particularly aversive and threatening to an individual’s self-image when the comparison domain is self-relevant and the comparison target is someone psychologically close, such as a peer. In our investigation, we explore social comparisons among similar individuals within the same organization. We expect these comparisons to involve: (a) targets who are psychologically close to the individual making the comparison and (b) a domain that is self-relevant. As a result, we expect participants who engage in upward social comparisons in our study to experience self-threat, and we expect upward social comparison cues to motivate the affiliated coping strategy of denigrating the target of the comparison to restore one’s own, positive self-image (Tesser, 1988). Related research has found that unfavorable social comparisons can harm relationships (Dunn, Ruedy and Schweitzer, 2012; Buunk and Gibbons, 2007; Festinger, 1954; Garcia, Song and Tesser, 2010; Hogg and Terry, 2000; Moran and Schweitzer, 2008; Parrot and Smith, 1993; Tai, Narayanan and McAllister, 2012), trigger hostility (Salovay and Rodin, 1984), reduce information sharing (Dunn and Schweitzer, 2006), promote deception (Moran and Schweitzer, 2008), and motivate a desire to harm the target (Cohen-Charash and Mueller,
Taken together, we predict that upward social comparisons will increase the likelihood that collaborators identify their colleagues as competitors.

**Peer Nominations**

We expect social comparisons to be particularly relevant for peer nomination decisions in organizations. Nominating a peer for a reward is a special type of pro-social behavior that requires colleagues to recommend their peers for recognition that they themself are often hoping to receive.

Rewards in organizations are both common and highly effective in motivating employees (Garcia, Tor, and Gonzalez, 2006; Greenberg, Ashton-James, and Ashkanasy, 2007). In many cases, it is managers or objective levels of performance that determine awards and promotions. In other cases, however, peer evaluations inform these critical organizational outcomes.

Peer nominations for organizational rewards are both practically and theoretically important. Practically, peer nominations represent a ubiquitous organizational tool to identify and reward high performers. For example, 90% of Fortune 500 companies incorporate peer feedback into their performance evaluation systems (Wright, 2008). Awards programs that rely on peer nominations represent a common method for motivating employees, retaining high performers, and showcasing model behavior (Garcia et al., 2006; Greenberg et al., 2007). For peer nomination programs to fulfill their objectives, employees need to nominate deserving peers. Theoretically, peer nominations are particularly well suited for our investigation because peer nominations are likely to be heavily influenced by the extent to which individuals identify their peers as collaborators or competitors.

Surprisingly, little prior work has explored the peer nomination process. In addition to having practical relevance, peer nomination decisions represent an ideal decision process for investigating the delicate balance between collaboration and competition. When individuals perceive their peers as competitors, we expect them to be less likely to nominate others for rewards; when individuals perceive these same peers as collaborators, we expect them to be more likely to nominate others for rewards. Across two behavioral studies, we describe the influence of upward social comparison cues on the decision to nominate a colleague for an award.
We expect subtle social comparison cues to cause individuals to identify peers as competitors for organizational rewards rather than collaborators. Specifically, we postulate that upward social comparisons will trigger self-threat and create a desire to restore equity by harming, or failing to help, the target. Consequently, we expect upward social comparisons to decrease the likelihood that individuals will nominate their peers for an award. Thus, our primary hypothesis is the following:

_Hypothesis 1:_ Subtle cues that prompt individuals to engage in upward social comparisons will reduce individuals’ willingness to nominate their collaborators for performance-based rewards.

Inequitable outcomes, such as seeing an undeserving individual rewarded, are aversive. According to equity theory, individuals who experience inequity are highly motivated to restore equity (Adams, 1965; Festinger, 1954; Pinder, 2008). We expect members of poorly performing groups to consider their peers to be undeserving of rewards. For members of poorly performing groups, we expect the prospect of a peer receiving an award to trigger a more extreme competitive reaction than the prospect of a peer from an effective collaboration receiving an accolade. Inequity within a group also reduces group identification (Tyler and Blader, 2003). Both low group identification and poor performance promote negative affect and a threat-oriented response (Duffy, Scott, Shaw, Tepper & Aquino, in 2012; Tai et al., 2012). As a result, we expect members of poorly performing groups to be particularly threatened by upward social comparisons. Consequently, we predict that individuals in poorly performing groups will be particularly unlikely to nominate their peers following an upward social comparison prompt that asks them to imagine a peer winning an award. Thus, we hypothesize the following:

_Hypothesis 2:_ Upward social comparison cues will curtail peer nominations more when collaborations are unsuccessful than when they are successful.

We test our hypotheses with both field and a laboratory experiments. First, however, we motivate our investigation by documenting the prevalence of workplace relationships in which peers perceive their colleagues as both collaborators and competitors.

**Study 1: Workplace Survey on the Co-Occurrence of Competition and Collaboration**
To assess perceptions of peers within organizations, we surveyed a representative sample of employed Americans over the age of 18.

**Method**

We recruited 150 employed Americans over the age of 18 through Qualtrics, an online survey research company, to participate in an online survey. Twelve of these 150 subjects provided unintelligible answers to written questions (e.g., strings of a single letter) and were thus excluded from our final data set. Of the 138 workers who provided intelligible response data, 56% were female, the average age was 43 (SD=11 years, min=20 years, max=65 years), the average number of hours worked per week was 43 (SD=8 hours, min=20 hours, max=80 hours), and the average percentage of time spent working with others as opposed to alone was 61% (SD=28%, min=0%, max=100%). Respondents were 84% Caucasian, 9% African American, 4% Hispanic, 2% Asian and 2% Other. The average salary of participants in our subject pool was in the $40,000-$60,000/year range, and respondents’ average level of educational achievement was an associate’s degree.

We asked survey respondents a number of questions about the nature of competition and collaboration in their workplace. First, we asked respondents to think of as many co-workers as they could with whom they had both competed and collaborated at work. We asked participants to list the initials of these individuals (space was provided for respondents to list up to 15 sets of initials). We then asked respondents to identify the single individual with whom their work relationship shifted the most frequently between cooperation and competition and to answer a series of questions about the nature of that relationship.

**Results**

On average, respondents in our survey listed the initials of 6.17 co-workers with whom they had both competed and collaborated in the workplace (SD=4.27, min=0, max=15), a number far larger than zero (t(137) = 16.95, p < 0.001). When asked how difficult it was to think of at least one colleague with whom they had both competed and collaborated at work on a seven point Likert scale (1 = very difficult, 2 = difficult, 3 = somewhat difficult, 4 = neutral, 5 = somewhat easy, 6 = easy 7 = very easy), the average
response was between “somewhat easy” and “easy” (mean=5.35, SD=1.66), and significantly easier than “neutral” (t(137) = 9.57, p < 0.001). Ninety eight percent of our participants identified someone with whom they both cooperated and competed.

We next asked participants to identify the person with whom their relationship switched most frequently between collaboration and competition at work (hereafter referred to as their “target colleague”). We then asked participants to describe one incident at work that caused them to view their target colleague as a collaborator (teaming up to achieve a valued outcome) and one incident that caused them to view their target colleague as a competitor (a rival for achieving something valued); 72% of participants were able to coherently identify both types of incidents (a single coder blind to our study’s purpose classified actual collaborative and competitive incidents). We present sample participant responses to these two questions in Table 1. These examples underscore the prevalence of these shifting relationships. Rather than perceiving colleagues as collaborators or competitors, the vast majority of respondents identified many of their colleagues as both.

\[ \text{Insert Table 1 Here} \]

Next, we asked participants to classify the intensity of both the competitive and collaborative incidents they had identified on a five point Likert scale (1 = not at all, 2 = a little, 3 = moderately, 4 = quite, 5 = extremely). Those who had identified both types of incidents classified the intensity of the collaboration, on average, as moderate-to-quite intense (mean=3.54, SD=0.94) and classified the intensity of the competition, on average, as moderate-to-quite intense (mean=3.22, SD=1.20). The correlation between collaboration and competition intensity ratings was positive and significant (r = 0.35, p < 0.001). These data suggest that workplace relationships frequently switch between cooperation and competition, and that these oscillations are often dramatic. Interestingly, participants reported that their cooperative and competitive experiences were similarly intense.

To characterize the frequency of cooperative and collaborative incidents, we asked participants to recall the last time they had both cooperated with and competed with their target colleague. Of the 72% of
participants who successfully identified both types of workplace incidents, 11% reported that they had competed more recently than they had collaborated, 27% reported that competition and cooperation had occurred equally recently, and 62% reported that they had collaborated more recently than they had competed. These results suggest that collaboration is more common than competition within relationships characterized by both competition and collaboration (one sample test of proportions: $z = -10.45$, $p < 0.001$). In fact, when we include all survey participants in our sample who recalled either type of workplace incident (cooperation or competition), the median time reported since the last collaboration with their target colleague was 3.5 days, compared to the median time since competition of 27.3 days.

Finally, we asked participants several questions about the type of person they identified as their target colleague. On average, respondents classified these colleagues as peers (mean = 3.55 on 5-point scale, 1 = very slightly or not at all, 5 = extremely). Further, they were colleagues who had been at an individual’s organization approximately the same amount of time they had (mean=3.24 on 5-point scale where 1 = much less time, 5 = much more time) and who were nearly the same age (mean=2.86 on 5-point scale where 1 = much younger, 5 = much older), were nearly the same rank (mean=3.16 on 5-point scale where 1 = much lower rank, 5 = much higher rank), were similarly educated (mean=2.74 on 5-point scale where 1 = inferior education, 5 = superior education) and shared the same gender (79% of the time). In short, shifts between competition and collaboration occur with high frequency between similar colleagues.

**Discussion**

These data describe workplace relationships that shift between competition and collaboration. We find that these relationships are very common, and that the intensity of both the cooperative and collaborative experiences is moderately high. We also find that within these relationships cooperation occurs more frequently than competition. Finally, we find that the targets of these competitive and collaborative relationships are peers who are very similar in terms of work experience, education, and demographics.
These findings document the existence and importance of relationships characterized by cooperation and competition in organizations. Our findings also suggest that within organizations a collaborative orientation is likely to be the dominant identity. Organizations serve to coordinate collaborative work (Kogut & Zander, 1996), and as a result employees within organizations are more likely to identify their colleagues as collaborators than as competitors. This presumption is supported by our finding that collaborative incidents are more frequent than competitive incidents. In the following two experiments, we examine how social comparison cues shift collaborative perceptions to competitive perceptions, and we explore how malleable these relationships are. Specifically, we examine how social comparison cues influence an important collaborative behavior—choosing to nominate peers for workplace recognition.

**Study 2: Field Experiment**

To test our first hypothesis, that social comparison cues can shift perceptions of others from collaborators to competitors and influence cooperative behavior, we conducted a field experiment at a manufacturing company in the United Kingdom. This company launched an employee recognition program and allowed us to vary the messages employees received at the program’s initiation.

**Method**

We manipulated the email messages that were sent to 326 employees across three work sites about the launch of a new “customer support excellence” rewards program. The emails announced the program’s commencement and described how to nominate a colleague to win an award. Previous company communications had described the new awards. The award winners were announced quarterly, and awards were associated with prizes (e.g., plaques, gift certificates) and recognition. The concept of “customer support excellence” was defined broadly so that employees who did not interact with external clients of the firm could still be recognized for supporting “internal” clients (other employees).

We randomly assigned half of the employees who received an email about the rewards program to the control condition and half to the hypothetical social comparison condition. In the control condition, participants received an e-mail from human resources personnel containing a picture of an employee
accepting an award followed by text describing the nomination process. In the hypothetical social comparison condition, participants received the same message with two additional lines of text (validated as envy-inducing in a pilot test described below). Immediately below the image of an award recipient, an italicized caption read “Your Co-Worker?” and directly below that we added a bolded line of text: “How would you feel if your co-worker won this award?”

For seven months following the distribution of these e-mail messages, we recorded every award nomination submitted by study participants.

**Pilot Test**

We conducted a manipulation check with a short survey on Amazon’s Mechanical Turk in exchange for (what we thought was) a small payment, $0.50. Within 10 days, 1,014 people responded to our posting and completed the survey.

In our pilot study, as in our main study, we randomly assigned participants to a control condition or a hypothetical social comparison condition. Participants in both experimental conditions were asked to “Imagine that the Human Resources team at your organization sent out the following email:” Participants in the control condition were presented with an email containing a picture of a professional accepting an award followed by text describing how to nominate colleagues at their organization for such an accolade. In the hypothetical social comparison condition, participants viewed the same message with two additional lines of text. Immediately below the image of an award recipient, an italicized caption read “Your Co-Worker?” and directly below that we added a bolded line of text: “How would you feel if your co-worker won this award?”

Across both conditions, we asked participants “for most people, to what extent would this email make them feel jealousy towards their co-workers?” Responses were on a 5 point scale. Participants in the hypothetical social comparison condition reported that this email would induce significantly higher levels of jealousy than did participants in the control condition (M\text{anticipated}_{\text{envy}} = 2.46, M_{\text{control}} = 2.29, t = -2.50, p = 0.01). This pre-test confirms that the social comparison cue enhanced feelings of jealousy. We
believe that this pilot test offers a conservative test of this manipulation, because the social comparison, award, and organizational context are hypothetical.

Results & Discussion

The employee rewards program generated 68 nominations during the seven month period that we studied, and the employees we followed nominated between zero and ten of their co-workers for recognition. Most (57%) of the nominations were submitted during the first two months of the program, but a steady flow of nominations continued throughout the study period. At the conclusion of the program, the organization announced 14 finalists and 8 award winners.

We conducted an ordinary least squares (OLS) regression to predict the number of nominations an employee submitted as a function of experimental condition, clustering standard errors by work function (e.g., human resources, finance) to account for the possibility of correlation in nomination decisions within employee work groups. We found that the message condition significantly influenced nomination behavior ($\beta_{control}=0.181$, $t=3.56$, $p<0.01$). Employees in the control condition nominated nearly three times as many colleagues as employees in the hypothetical social comparison condition (see Figure 1).

Taken together, we find that prompting individuals to imagine watching a co-worker receive recognition for excellence both induced envy (pilot study) and dramatically curtailed the number of co-worker nominations employees submitted (field study).

Group performance is likely to be an important moderator of the relationship between social comparison cues and nomination behavior. We expect group performance to influence the likelihood that individuals perceive their co-workers as praiseworthy collaborators rather than unworthy competitors. Unfairness exacerbates envy (Smith, 1991), and the prospect of imagining a colleague winning an award on a low performing team may generate a particularly intense sense of unfairness. Although we did not
have access to performance data in our field study, we explore this question next in a controlled, laboratory experiment.

**Study 3: Laboratory Experiment**

In a laboratory study, we explore how group performance moderates the relationship between social comparison cues and an individual’s willingness to nominate her colleagues for performance-based awards. We expect social comparison cues to be particularly likely to reduce peer nominations when group performance is poor. The prospect of imaging a colleague from an underperforming group receiving recognition is likely to seem particularly unfair because the recognition will feel undeserved, exacerbating the envy induced by such a social comparison (Smith, 1991). According to equity theory, the perception that someone else has earned undue rewards can induce envy and spur a desire to restore equity (Adams, 1965; Festinger, 1954; Pinder, 2008). As a result, we expect ineffective collaboration to enhance the extent to which social comparison cues curtail peer nominations.

**Method**

We recruited 284 students to participate in an experiment through campus advertisements at a large university in the Mid-Atlantic region of the United States. We paid participants $10 for one hour of their time. We randomly assigned study participants (160 females, 124 males, mean age=20.6 years, SD=2.8 years) to groups of four. Each group of four completed the study together in an isolated room.

Working collaboratively, each group completed four rounds of a two minute online Boggle game (Hasbro, 2010). Boggle is a word game in which a 4 x 4 letter matrix is presented to participants. Participants are then challenged to identify words on the game board composed of adjoining letters. Each word must be at least three letters long and points are assigned based on the number of correct, unique words identified. Longer words earn more points. Prior studies have documented wide variance in Boggle performance (Tauer and Harackiewicz, 1999), making this game ideal for studying the moderating influence of group performance on social comparison cues and peer reward nominations.

Each group member took a turn as typist for one of the four rounds of online Boggle. Participants knew they would be paid $0.02 for every point their group earned (using standard Boggle rules) and that
they would compete for a $10 individual creativity award that at most one player on their team of four could win.

After completing the group Boggle task, each participant completed an individual survey. Half of the study participants were randomly assigned to the control condition and half to the hypothetical social comparison condition. Random assignment took place within groups, so two participants from each four person group were assigned to each condition. Participants in the hypothetical social comparison condition were asked to imagine how they would feel if another person in their group won the $10 creativity award and to write a paragraph describing in detail “the way you imagine you would feel at the time of the award’s announcement.” We asked participants in the control condition to imagine the classroom where they most recently attended a lecture and write a paragraph describing it in detail.

Finally, we gave participants the opportunity to influence the winner of the $10 creativity award in their group. We endowed each of the four participants with 25 points to allocate to the other participants on their team or to a “no winner” option. The total number of points (out of 100) each player received in the form of nominations from Boggle collaborators represented his or her likelihood of winning the award. For instance, if the three other collaborators each assigned a participant 20 points, that participant would have a 60% chance of winning $10. Participants could not allocate points to themselves. By allocating points to the “no winner” option, participants increased the likelihood that no one else from their collaboration would win the award without altering their own chances of earning the prize. Thus, the decision to allocate any points to the “no winner” option was value-destroying. We provided participants with detailed nomination instructions and we required them to pass a comprehension quiz before they could proceed to nominate their peers (see Appendix).

Results & Discussion

Boggle performance varied considerably across the four-person groups (min=58 points, median=97 points, max=162 points, SD=20 points), and the nature of individuals’ experience in these groups varied dramatically. In the most productive groups, the four individuals generated words at a dizzying speed of 24 per minute; in the least productive groups, the four individuals generated words at
the sluggish rate of 9 per minute. That is, in high performing groups an individual would hear a unique word every 2-3 seconds, whereas in low performing groups an individual would hear a unique word every 6-7 seconds. This difference was dramatic and made an impression on participants\(^3\) that enables us to investigate how group performance moderates the influence of social comparison cues on nomination behavior.

We conducted an OLS regression to predict the allocation of points to the value-destroying “no winner” option as a function of assignment to the hypothetical social comparison condition, group performance (measured in Boggle points scored) above the median, and the interaction between these variables (see Table 2). Our analyses control for player demographics (age and gender) as well as the order in which players served as their group’s typist (which is highly correlated with allocating points to the “no winner” option).

We find that when groups performed poorly, social comparison cues significantly reduced players’ willingness to nominate their peers for a prize (Table 2). However, this effect was attenuated when groups performed well. In groups with median or lower Boggle performance ($\leq 97$ points earned), 65% of participants in the social comparison condition assigned some points to the value-destroying “no winner” option, whereas only 42% of participants in the control condition assigned points to this option. The regression-estimated effect for participants in the social comparison condition with median or below average performance was a 21 percentage point increase in the likelihood of assigning points to “no winner.” However, this harmful effect is eliminated for teams with above median performance. Results from logistic regressions are very similar, though prior work suggests that logistic regression coefficients are inappropriate for testing interaction effects (Ai and Norton, 2003).\(^4\) These findings replicate the results of our field study in a controlled laboratory setting and confirm our prediction that the combination of ineffective collaboration and social comparison cues is particularly harmful to peer nominations.
Although prior streams of research have largely investigated collaboration and competition separately, our work addresses the particularly important problem of navigating relationships that are characterized by oscillations between collaboration and competition. In our investigation, we demonstrate that coworker relationships that shift between collaboration and competition are common in the workplace. The individuals with whom employees are most likely to both collaborate and compete are peers who share similar educational, professional, and demographic characteristics. Importantly, envy is most intense among individuals who are otherwise very similar (Salovay and Rodin, 1984), and our work in both field and laboratory settings demonstrates that subtle social comparison cues can trigger envy in these relationships, tip the balance between cooperation and competition, and impact an organizationally important behavior.

In our field study, we demonstrate that subtle social comparison cues reduce individuals’ willingness to nominate their peers for recognition. In this setting and in the laboratory, we demonstrate that individuals are less willing to nominate a co-worker for an award after considering how it would feel if a colleague received recognition for outstanding performance. Further, we find that higher team performance attenuates this relationship. By combining data from the field and the laboratory, we are able to establish the internal validity of our findings as well as their external validity and managerial relevance (Cialdini, 2009).

Our studies demonstrate that a delicate balance between competition and collaboration exists in many relationships between colleagues. In many organizational settings, individuals both cooperate and compete with their peers. Consistent with past work on shifting organizational identities (see a discussion in Wiesenfeld and Hewlin, 2003), we find that subtle, but important cues can influence whether these peers are perceived as collaborators or rivals, and these differences in perception have profound implications.

Our research suggests that subtle triggers can shift colleagues’ perceptions of their relationships. We explore explicit social comparison cues and demonstrate that these cues have the power to alter cooperative dynamics. However, future research should explore a broader set of common workplace
triggers of social comparisons. It is possible that many competitive cues, such as the introduction of competitive rewards programs, announcements about bonuses, layoffs, performance reviews, or even individual goal-setting exercises trigger shifts in the cooperative-competitive dynamics within organizations by prompting individuals to engage in social comparisons.

Managers seeking to promote collaboration among employees in their organizations should be aware of the delicate balance that exists between competition and collaboration. To the extent that managers can avoid triggering comparisons between employees, they may boost performance when effective collaboration is critical.

More broadly, our findings demonstrate that managers need to structure incentives carefully. The same incentive systems that motivate individual performance can harm colleagues’ willingness to collaboratively promote one another. Many common incentive and reward programs may harm cooperative dynamics among colleagues, and future work should investigate this possibility.

Future research should also investigate critical questions surrounding the shifting and dynamic nature of collaboration and competition in the workplace. For example, future work should explore how individuals can best navigate these shifting relationships and how managers can most effectively structure incentives and work to account for this instability. It is quite possible that many factors, such as the nature of the work, the self-confidence of the individuals, and external threats influence these interpersonal organizational dynamics.

It would also be fascinating to explore the long-term effects of switching back and forth between competition and collaboration. Is there a stable equilibrium or does switching back and forth destroy value in relationships? Past theorizing has argued that the expression of emotional ambivalence in groups impairs cohesion (Rothman and Wiesenfeld, 2007). Switching frequently between collaboration and competition may increase expressions of emotional ambivalence and harm long-term cooperation. Another interesting question is whether particularly intense competitive episodes harm subsequent collaborations? We hope that future research will begin to examine some of these interesting and open questions about the nature of workplace relationships.
Competitive rewards, such as bonuses and promotions, play a critical role in incentivizing employees in many organizations. Our findings highlight a potential harmful consequence of these competitive rewards. Rewards programs and other cues that trigger social comparisons may curtail important cooperative behaviors within organizations. The studies we present demonstrate that mere prompts to imagine the experience of watching a colleague receive recognition for excellence are enough to trigger envy and meaningfully reduce cooperation in the workplace. Our findings highlight the importance of social comparisons in the workplace and the need for future research to further explore the delicate balance between cooperation and competition.
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Footnotes

1 Though prior work has distinguished between envy and jealousy (Parrott and Smith, 1993; Parrott, 1991), most use these terms interchangeably (Spielman, 1971) as we do throughout this paper.

2 We asked participants to report the extent to which “most people” would experience jealousy. We used this approach because prior work has shown that individuals are reluctant to admit that they experience socially inappropriate emotions, such as jealousy (Greenwald and Banaji, 1995; Parrott, 1991).

3 Participants reacted to the relative performance of their group, and this influenced their desire to see their collaborators rewarded (see Table 2).

4 If we examine the number of points allocated to “no winner” rather than whether any points were allocated to this value-destroying option, we observe the same overarching pattern of results. Further, our results are meaningfully unchanged whether or not we cluster standard errors by team.
<table>
<thead>
<tr>
<th>An incident at work that led you to view this colleague as a collaborator</th>
<th>An incident at work that led you to view this colleague as a competitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Target] and I only had one hour fix the network so we had to work together to get it done quickly.</td>
<td>When [target] and I were both up for the same promotion and only one of us could get the job.</td>
</tr>
<tr>
<td>We've worked together on many projects and get along well. We both work overtime together to get the job done.</td>
<td>We were both competing for a job promotion. We both wanted the job and you could feel the tension in the work atmosphere.</td>
</tr>
<tr>
<td>We had a deadline that was raised two weeks, so rather than wait for our supervisor's help, the two of us brainstormed and came up with ideas and succeeded in record time.</td>
<td>Both of us were up for promotion, so we began to look at one another as rivals.</td>
</tr>
<tr>
<td>We both have the same job function and...there are often times when we need to help each other for the benefit of only one of us.</td>
<td>This is easy, as we both need to be #1 in order to be recognized as a top performer for my company.</td>
</tr>
<tr>
<td>I work in a sales job, and I was having difficulty closing a big sale. He pitched in and helped me close the deal, and I have done the same for him.</td>
<td>We were placed on different teams with the prize being holidays off. We worked next to each other so I was able to keep track of his progress.</td>
</tr>
<tr>
<td>There was a project [Target] was working on which had a direct effect on my own project so we decided to help each other in order to complete our projects early.</td>
<td>Last year there was an award given to the person who completed their project first. Even though [Target] and I work in different research areas it came down to the two of us.</td>
</tr>
<tr>
<td>[Target] and I are a team in our department at work, and work together to solve issues and complete projects.</td>
<td>[Target] is the assistant, while I am the associate. Sometimes I wonder if [Target] will be promoted to associate and I will either lose my job or be demoted.</td>
</tr>
<tr>
<td>The project was a retrofit of an old air conditioning system on subway cars that involved both our respective engineering fields to accomplish.</td>
<td>Job interview for a director level position at work where it was a &quot;battle&quot; over the respective disciplines of electrical vs. mechanical engineering.</td>
</tr>
<tr>
<td>We worked together to solve a problem out on the jobsite. We worked well together and used each other’s ideas to come up with a solution that worked. We used our solution and made the correction.</td>
<td>We both competed for the same job position. It was much tougher for me because I am not related to the owners like he is.</td>
</tr>
<tr>
<td>Had to work on a project proposal for the client to win new business. He had experience in some areas and I in others. Worked together to create a winning bid.</td>
<td>New department opening and we both applied for the position. Had been friendly before but got adversarial when we both wanted the new job.</td>
</tr>
</tbody>
</table>
Table 2

The Effect of Social Comparison Cues on Destruction of Value in Collaborator Award Nominations

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothetical Social Comparison Condition</td>
<td>0.212**</td>
<td>0.095</td>
</tr>
<tr>
<td>Points Earned Above Median</td>
<td>0.176**</td>
<td>0.088</td>
</tr>
<tr>
<td>(Hypothetical Social Comparison Condition) x (Points Earned Above Median)</td>
<td>-0.342***</td>
<td>0.126</td>
</tr>
<tr>
<td>Player Age</td>
<td>-0.035***</td>
<td>0.008</td>
</tr>
<tr>
<td>Female Indicator</td>
<td>0.000</td>
<td>0.055</td>
</tr>
</tbody>
</table>

Boggle Typist Order Fixed Effects           | Yes    |
Observations                                | 284    |

R^2                                         | 0.103  |

Note: The ordinary least squares regression results demonstrate the effect of a social comparison cue on whether participants allocated any points to the value-destroying option "no winner" when nominating a collaborator for the $10 creativity award. Standard errors clustered by group are in parentheses. The variable "Points Earned Above Median" is an indicator variable for earning more points than the median team, so the coefficient estimate for the "Hypothetical Social Comparison Condition" indicator represents the treatment effect for low performers. * p ≤ .10. ** p ≤ .05. *** p ≤ .01
Figure 1. Mean number of peer nominations submitted by employees as a function of their experimental condition.
Appendix

Description of Award Nomination Process Provided to Participants in Boggle Study

One of the participants from your Boggle group may win a creativity award. Winners will receive a $10 pay bonus and the privilege of leaving the study approximately 30 minutes early. The winner of this award will be determined partly by your decisions, partly by the decisions of other members of your group, and partly by chance.

Here is how you will influence who wins the award:
You have 25 points to divide and assign to increase the odds of four possible outcomes:
1. Participant B from your group wins the award
2. Participant C from your group wins the award
3. Participant D from your group wins the award
4. No one from your group wins the award

Every other member of your group also has 25 points to divide. Each point allocated to a given outcome increases the chances of that outcome by 1%.

Examples:
- You can allocate all 25 points to one other member of your group. This increases the likelihood of that person winning the award by 25%.
- You can allocate all 25 points to “no one wins an award.” This increases the likelihood that no one will win an award from your group by 25%.
- You can divide your points among the other members (for example – 10 points to Participant B, 5 points to Participant C, and 10 points to Participant D). This increases the likelihood that one of the other members of your group will win the award (specifically, Participant B’s chances of winning increase by 10%, Participant C’s by 5%, and Participant D’s by 10%).
- You can divide your points among the other participants and the “no one wins option.” This increases the likelihood that the other members of your group will win the award and that no one will win the award.

After each group member allocates his or her 25 points, we will use these points in a lottery. The person or outcome with the highest number of points will be the most likely to win. After every group member allocates his or her points, we will draw a random number to determine who, if anyone, from your group will win the creativity award.

In other words, the number of points you assign an outcome increases the likelihood of that outcome.

Please raise your hand if you have any questions.

1. If you assigned 25 points to Participant B, 0 points to Participant C, 0 points to Participant D, and 0 points to “no one wins”, how much would the chances of each of the following outcomes increase?

   Participant B wins: __ percentage point increase in odds
   Participant C wins: __ percentage point increase in odds
   Participant D wins: __ percentage point increase in odds
   No One wins: __ percentage point increase in odds
2. If you assigned 10 points to Participant B, 5 points to Participant C, 0 points to Participant D, and 10 points to “no one wins”, how much would the chances of each of the following outcomes increase?

Participant B wins: [ ] percentage point increase in odds
Participant C wins: [ ] percentage point increase in odds
Participant D wins: [ ] percentage point increase in odds
No One wins: [ ] percentage point increase in odds

[Participants were not able to move on to the nomination process until correctly answering all of the questions above.]