

Trash-talking: Competitive incivility motivates rivalry, performance, and unethical behavior



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ABSTRACT

Trash-talking increases the psychological stakes of competition and motivates targets to outperform their opponents. In Studies 1 and 2, participants in a competition who were targets of trash-talking outperformed participants who faced the same economic incentives, but were not targets of trash-talking. Perceptions of rivalry mediate the relationship between trash-talking and effort-based performance. In Study 3, we find that targets of trash-talking were particularly motivated to punish their opponents and see them lose. In Study 4, we identify a boundary condition, and show that trash-talking increases effort in competitive interactions, but incivility decreases effort in cooperative interactions. In Study 5, we find that targets of trash-talking were more likely to cheat in a competition than were participants who received neutral messages. In Study 6, we demonstrate that trash-talking harms performance when the performance task involves creativity. Taken together, our findings reveal that trash-talking is a common workplace behavior that can foster rivalry and motivate both constructive and destructive behavior.

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[The ATS is] a rear-wheel drive performance car [that] will compete against the C-Class Mercedes. They call it C-Class because it is very average.

[General Motors CEO Dan Akerson].

I saw more honesty on a Match.com ad than AT&T's coverage maps.

[T-Mobile CEO John Legere].

1. Introduction

To celebrate the new millennium, the city of London constructed the London Eye, a giant Ferris wheel on the River Thames. British Airways sponsored the construction of the London Eye. In the final stage of construction, as workers attempted to erect the London Eye, they experienced technical difficulties. Richard Branson, the founder of Virgin Atlantic, decided to capitalize on the

misfortune of its competitor and broadcasted a message intended to humiliate British Airways. He arranged for a blimp to fly over the London Eye with a giant banner that read, "BA can't get it up!" This public insult intensified the longstanding competition between British Airways and Virgin Atlantic.

Competition pervades organizational life (Deutsch, 1949; Kilduff, Elfenbein, & Staw, 2010). In organizations, employees routinely compete for scarce resources, such as promotions, bonuses, coveted project assignments, and praise. We define competition as a context in which the objective outcome for one competitor is negatively correlated with the outcome for another competitor (Beersma et al., 2003; Deutsch, 1949; Garcia & Tor, 2009). Competition has been linked with the pursuit of power and status (Anderson & Kilduff, 2009; Hardy & Van Vugt, 2006; Pettit, Yong, & Spataro, 2010), performance (Halevy, Chou, Galinsky, & Murnighan, 2012; Murayama & Elliot, 2012), motivation (Garcia & Tor, 2009), conflict (Halevy, Weisel, & Bornstein, 2012), risk-taking (Jordan, Sivanathan, & Galinsky, 2011; Ku, Malhotra, & Murnighan, 2005), creativity (Baer, Leenders, Oldham, & Vadera, 2010), and unethical behavior (Kilduff, Galinsky, Gallo, & Reade, 2016; Pierce, Kilduff, Galinsky, & Sivanathan, 2013).

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Though most of the existing competition literature has concentrated on the structural characteristics of competition (Garcia & Tor, 2009), a few studies have examined the traits of the competitors (Brown, Cron, & Slocum, 1998; Fletcher, Major, & Davis, 2008). In addition, an emerging literature has begun to highlight the importance of the relationships between competitors (Chan, Li, & Pierce, 2014; Galinsky & Schweitzer, 2015; Kilduff et al., 2010; Larkin, Pierce, & Gino, 2012; Malhotra, 2010). One aspect of competitors' relationships that has received limited attention is how aggressively competitors relate to each other before and during competition.

This omission is striking, because aggressive behavior is both common in competitive situations and consequential. For example, in studies outside the domain of competition, scholars have found that aggressive and uncivil behavior can have negative consequences for the performance of individuals and organizations (Aquino & Thau, 2009; Melwani & Barsade, 2011; Pearson & Porath, 2005; Porath & Erez, 2007; Tepper, 2000). However, we know surprisingly little about how aggressive communication styles influence competitive behavior.

We also build on the existing research that has examined the influence of communication on negotiation outcomes. This work has found that banal, non-task communication prior to mixed-motive interactions can promote cooperation (Balliet, 2009; Brett, Shapiro, & Lytle, 1998; Morris, Nadler, Kurtzberg, & Thompson, 2002). Conversely, expressions of anger during a negotiation harm cooperative behavior (Allred, Mallozzi, Matsui, & Raia, 1997; Van Kleef, De Dreu, & Manstead, 2004; Yip & Schweinsberg, 2017). Taken together, prior work suggests that communication between competitors is important, but our understanding of how communication among competitors influences behavior is surprisingly limited.

In this paper, we explore the interplay between competition and communication. Specifically, we explore how trash-talking in competition influences perceptions, performance, and unethical behavior. We introduce and investigate a particularly important type of competitive communication: *trash-talking*. We define trash-talking as *boastful comments about the self or insulting comments about an opponent that are delivered by a competitor typically before or during a competition*.

We characterize trash-talking as an uncivil behavior, and we challenge the prevailing assumption that uncivil remarks harm motivation. Instead, we show that trash-talking can substantially enhance motivation through feelings of rivalry. In addition to motivating constructive effort, however, trash-talking can motivate competitors to engage in unethical behavior.

Our research makes several contributions to advance theory and existing research. First, we provide an initial conceptualization and empirical test of the effects of trash-talking. This extends existing research on competition by considering a neglected, yet important feature of competition that is common in organizations. Second, we demonstrate that trash-talking serves as an antecedent of rivalry. Prior rivalry research has focused on rivalry triggered by historical competition. Our research advances our understanding of rivalry by showing that trash-talking can ignite a rivalry quickly, even in the absence of a long-standing relationship. Third, by conceptualizing trash-talking as a form of incivility, we demonstrate how a specific type of incivility can boost motivation. This advances our understanding of incivility, as much of the existing incivility research has presumed that uncivil remarks have negative ramifications for individuals in organizations. We also identify potential hazards of engaging in this form of incivility by demonstrating that trash-talking can promote unethical behavior.

1.1. Trash-talking

We provide the first conceptual definition of trash-talking. Our definition of trash-talking highlights the content of the aggressive

communication (“boastful remarks about the self or insulting remarks about an opponent”) and the competitive context of the communication (“delivered by a competitor typically before or during a competition”). To provide a richer understanding, we identify four characteristics that are unique to trash-talking.

First, trash-talking is incivility expressed in a competitive context in which two or more parties are vying for resources, recognition, or status. Unlike other forms of aggressive communication such as gossip (Wert & Salovey, 2004), bullying (Einarsen & Skogstad, 1996), or abusive supervision (Tepper, 2000), trash-talking occurs in interactions defined by strong competitive norms that lack opportunities to collaborate.

Second, trash-talking is aggressive communication that involves ridicule or self-aggrandizement. Importantly, ridicule can be malicious or playful. In competitive interactions with rivals, trash-talking is often characterized by the intent to harm an opponent and involves taunts that criticize an opponent's identity, group membership, competence or performance. In competitive interactions with friends, trash-talking often has a benign intention characterized by teasing that combines ridicule or self-aggrandizement with humor.

Third, trash-talking can occur with or without the opponent present. In dyadic interactions when the target is present, trash-talking is broadcasted directly to the target to boost the self and/or diminish the target. Trash-talking, however, can also occur when the target is absent. Even when the target is absent, a trash-talker can make boastful comments about the self or derogatory remarks about the opponent. These comments may elevate the trash-talker's confidence, alter status perceptions of an audience, or influence the target's behavior when the message ultimately reaches the target.

Fourth, trash-talking varies in quality from crude insults to witty observations. Crude or blunt forms of trash-talking often rely on direct insults and overt aggression. For example, trash-talking may include racist or sexist comments about an opponent. More sophisticated forms of trash-talking exhibit inventiveness and may include sarcasm, hyperbole, and metaphors.

Taken together, trash-talking is likely to influence cognition and behavior in both the trash-talker and the target. That is, competitors use trash-talking to intimidate, distract, or humiliate a target, and boost morale of the trash-talker. Similarly, within groups, a leader who engages in trash-talking may motivate team members. In this paper, we identify trash-talking as a familiar organizational behavior, and we explore the relationship between trash-talking and the target's motivation. Though we expect trash-talking to influence both the trash-talker and the target of trash-talking, we begin our investigation of trash-talking by focusing on targets of trash-talking.

Trash-talking can include boastful comments, insulting comments, or both. For example, in the 1996 NHL conference semifinals, Patrick Roy, a goalie for the Colorado Avalanche, boasted, “I can't really hear what Jeremy [Roenicke] says because I've got my two Stanley Cup rings plugging my ears.” In a very different context, Donald Trump insulted his competitor for the 2016 Republican nomination, Carly Fiorina, by exclaiming, “Look at that face! Would anyone vote for that? Can you imagine that, the face of our next president?”

While familiar in sports and politics, trash-talking features prominently in organizational life. Not only is competition a central feature of organizational life (Anderson & Kilduff, 2009; Galinsky & Schweitzer, 2015; Kilduff et al., 2010), but so too is trash-talking. In an account of financial traders, Lewis (1989) recorded the routine use of demeaning comments directed at competing managers. For example, one manager referred to another manager with whom he was competing as “a boob, all artifice. The man never had an original thought in his life” (Lewis, 1989, p.176).

To assess the prevalence of trash-talking in organizations, we surveyed a panel of 143 full-time office workers from Fortune 500 companies ($M_{\text{age}} = 42$ years, $SD_{\text{age}} = 12.76$ years; 54% female; $M_{\text{work experience}} = 14$ years). We asked employees to recall a time when they heard or made an insulting or boastful comment at work when competing for recognition or resources. Employees recalled a variety of trash-talking incidences. For example, a Bath & Body Works sales agent commented about their competitor, Yankee Candle, “Their candles suck.” Another example involved an Associate in the U.S. Department of Defense who was vying for a promotion telling a coworker, “I will beat your butt so bad; you won’t be able to work ever again.”

Most full-time employees (61%) recalled incidences of trash-talking that occurred within the last three months of work, and 57% of the employees reported that trash-talking incidences occurred monthly or more often than monthly. We also find that 45% full-time employees reported it easy to recall an incident of trash-talking in the workplace. These findings provide evidence that trash-talking behavior naturally occurs in the workplace, and motivate our investigation of trash-talking in controlled, experimental studies. Though we did not observe systematic differences across industries, organizational norms are likely to govern the prevalence, content, and consequences of trash-talking.

1.2. Incivility

We conceptualize trash-talking as a form of incivility expressed between competitors. Incivility is rude behavior characterized by displays of disrespect and disregard for others (Andersson & Pearson, 1999; Brown & Levinson, 1987; Pearson & Porath, 2005; Porath & Erez, 2007; Porath & Erez, 2009). Incivility violates social norms for mutual respect and has been associated with a number of negative interpersonal consequences (see Martinko, Harvey, Brees, & Mackey, 2013; Tepper, 2007 for reviews) including retaliatory behaviors (Wang, Northcraft, & Van Kleef, 2012), counterproductive behaviors (Duffy, Ganster, & Pagon, 2002), escalation of conflict (Wubben, De Cremer, & Van Dijk, 2009), workplace deviance (Mitchell & Ambrose, 2007), psychological distress (Cortina, Magley, Williams, & Lanhout, 2001), and poor team functioning (Farh & Chen, 2014).

Incivility has also been directly linked with impaired target performance. Porath and Erez (2007) found that displays of rude behavior lowered the performance of targets; targets of incivility exhibited less creativity, less flexibility, and poorer memory. In related work, Porath and Erez (2009) found that incivility even impaired the performance of observers. Witnesses who merely observed incivility directed at others performed worse on complex and creative tasks. However, if witnesses of incivility competed against the targets of incivility, their performance declines were attenuated.

No prior work, however, has investigated the influence of incivility among competitors. That is, no prior studies have explored the consequences of incivility when competitors exhibit incivility towards each other. This is an important omission, because expressions of incivility are common among competitors and because incivility may have important consequences for competitors.

1.3. Rivalry

Many important workplace outcomes are determined by competitions (Beersma et al., 2003; Deutsch, 1949), and competitions can profoundly shape relationships (Kilduff et al., 2010). One special type of relationship forged by competition is rivalry. Kilduff (2014) conceptualizes rivalry as an intense competitive relationship that exists between two specific opponents with a history of prior interactions.

Rivalry intensifies the psychological stakes of competition and affords psychic benefits for winning that are separate from the economic stakes (Kilduff et al., 2016; Malhotra, 2010). Rivalries can have significant behavioral consequences for motivation and competitive performance. For instance, long-distance runners run faster when they compete against rivals than when they compete against other, less familiar competitors. And in some cases, the presence of rivals can prompt individuals to escalate their auction bids to beat competitors, well beyond the point at which they had anticipated to bid (Ku et al., 2005).

Existing research identifies three antecedents for rivalry: similarity, proximity, and history of competition (Kilduff, 2014; Kilduff et al., 2010). In the extant rivalry literature, a history of competition has been regarded as a past, repeated experience of competition. We challenge and expand the existing conceptualization of antecedents of rivalry to include trash-talking. Specifically, we postulate that trash-talking among competitors—even among competitors who lack the shared experience of prior, repeated competitions—can trigger rivalry. Kilduff et al. (2016) considered rivalry as a mindset, and we postulate that trash-talking heightens the psychological stakes in a competition to shift perceptions of opponents to view them as rivals. That is, we explore whether or not trash-talking can *instantly* trigger perceptions of rivalry.

1.4. Communication and competition

We build on prior work that has considered communication in competitive interactions. (Moore, Kurtzberg, Thompson, & Morris, 1999). For example, the absence of communication can promote competitive behavior (Balliet, 2009), whereas communication that is clear, responsive, and comforting can promote cooperation (Liu, Chua, & Stahl, 2010; Swaab, Galinsky, Medvec, & Diermeier, 2012). In fact, Liberman, Samuels, and Ross (2004) found that merely framing a social dilemma task in cooperative terms as the “Community Game” or in competitive terms as the “Wall Street Game” influences how people perceive and behave in interactions.

We extend the existing literature on communication by focusing on aggressive communication in a setting that lacks interdependence and coordination. Our approach affords a direct test of the interpersonal effects of aggressive communication. We expect that competition alters not only the content of aggressive communication, but also the consequences of aggressive communication.

1.5. The interpersonal consequences of trash-talking

In every trash-talking exchange, there is a *trash-talker* and a *target*. Often, there is an audience. In our investigation, we focus on the target who experiences trash-talking, and we examine consequences for the target. In particular, we explore how trash-talking influences the target’s perceptions and performance in competitive situations. Our findings build on the rivalry literature and directly contribute to the literature on performance.

In social interactions, people often signal their intention to either cooperate or compete (Galinsky & Schweitzer, 2015; Lount & Pettit, 2012). When individuals identify others as competitors, they shift their perception about the relationship and become more competitive themselves (Kelley & Stahelski, 1970; Pierce et al., 2013). Trash-talking signals an intention to compete fiercely and, as a result, can intensify a competitive relationship. Compared to targets of neutral messages, targets of trash-talking evaluate the competitive relationship differently; trash-talking raises the psychological stakes of competitive interactions.

Rivalry is a competitive relationship characterized by increased psychological stakes (Kilduff et al., 2010). Perceptions of rivalry are intrapsychic and subjective. Rivalry is an intense form of competition that can be triggered in the minds of competitors. Once acti-

vated, rivalry increases the subjective significance of competitive outcomes. Prior research has explored rivalries in competitive relationships that involve a shared history of repeated competition. We extend the investigation of rivalry to new relationships and suggest that trash-talking can trigger perceptions of rivalry.

We expect trash-talking to trigger perceptions of rivalry for two theoretical reasons. First, trash-talking enhances the psychological stakes of competition. For targets of incivility, beating a trash-talking opponent becomes more pleasurable, and losing to a trash-talking opponent becomes more aversive. Second, trash-talking increases the salience of social comparisons between targets and trash-talkers. Social comparisons reflect the propensity for individuals to compare their own achievements and performance to the achievements and performance of others (Festinger, 1954). These comparisons can foster competitive behavior (Garcia, Tor, & Schiff, 2013). Comparisons with outperforming peers are painful and activate a drive to achieve a superior relative position (Garcia, Tor, & Gonzalez, 2006). We postulate that the put-down nature of trash-talking generates a social comparison that intensifies feelings of rivalry.

Hypothesis 1. Compared to competitors who receive neutral messages, competitors who receive trash-talking messages are more likely to view their opponents as rivals.

Performance is a central topic in organizational behavior and social psychology. Performance generally refers to the extent to which people achieve their personal or organizational objectives (Campbell, 1990; Grant, 2008). Scholars conceptualize performance as a product of motivation and ability (Heider, 1958; Vroom, 1964). Motivation captures the psychological states that direct, energize, and prolong action (Grant et al., 2007; Mitchell & Daniels, 2003). The desire to exert greater effort can be triggered by a number of sources such as incentives, recognition, and enjoyment of the work (Amabile, 1993; Heath, 1999; Herzberg, 1966). In competitive situations, the desire to exert greater effort can be triggered by similar sources, such as the extrinsic rewards for winning, as well as by relational factors, such as the psychic rewards from defeating an opponent.

We expect trash-talking to increase effort-based performance because targets identify trash-talkers as rivals. Prior research has revealed that rivals exert greater effort (Kilduff, 2014). For example, Kilduff et al. (2010) found that rivalry predicted increased success in effort-based tasks such as defense in NCAA basketball. Similarly, Kilduff (2014) found that rivals reported higher levels of motivation, and rivals who were competing in a long-distance race were more likely to run faster than non-rivals. We expect perceptions of rivalry to mediate the relationship between trash-talking and performance.

Our prediction that trash-talking motivates effort-based performance is different from prior incivility research. Prior work found that hostile, disrespectful, and impolite exchanges can be demotivating and emotionally exhausting (Porath & Erez, 2007; Porath & Erez, 2009). All of this work, however, studied cooperative settings. In contrast to these findings, we consider the influence of uncivil behavior within competitive relationships. We expect incivility within a context of competition to be a powerful motivating force.

When people express incivility, they violate social norms of mutual respect and fair treatment. When people are treated unfairly, they are more likely to retaliate (Pillutla & Murnighan, 1996). In competitive settings, individuals compete for scarce resources, and one competitor's gain comes at the other's expense (Deutsch, 1949). We postulate that incivility expressed in competitive situations motivates targets to retaliate by exerting greater effort to claim resources at the expense of their competitors. That

is, we expect targets of trash-talking to seize opportunities to retaliate against trash-talking opponents by competing harder.

Taken together, we propose that targets of trash-talking perform better on effort-based tasks than targets of neutral messages. We expect targets of trash-talking to perceive trash-talkers as their rivals, and we focus our attention on effort-based tasks that reflect motivation.

Hypothesis 2. Compared to competitors who receive neutral messages, competitors who receive trash-talking messages increase their effort-based performance.

Hypothesis 3. Perceptions of rivalry mediate the relationship between trash-talking and performance.

We theorize that trash-talking increases the target's motivation to win by activating a preference in the target to see their opponent lose. First, individuals often react to disrespectful and hostile behavior by experiencing negative affective reactions, such as anger. Angry individuals exhibit less concern for their opponents' interests (Allred et al., 1997) and are more likely to seek opportunities to retaliate (Berkowitz, 1988). Second, trash-talking is disrespectful and promotes social comparisons. Unfavorable social comparisons can trigger hostility (Salovey & Rodin, 1984) and retribution (Boles, Croson, & Murnighan, 2000; Wang et al., 2011). For both of these reasons, we propose that targets of trash-talking develop a stronger preference to see their opponent lose than targets of neutral communication.

In competitive situations such as auctions, people can experience competitive arousal and an elevated desire to win (Ku et al., 2005; Malhotra, 2010). In our work, we disentangle two related motivations: the motivation to maximize one's own gains, and the motivation to see the trash-talker lose. We suggest that targets of trash-talking derive psychic benefits from defeating trash-talking opponents, largely because they are keen to see the trash-talker lose. That is, competitors are motivated to see their trash-talking opponent lose, even at the expense of maximizing their own outcomes.

Hypothesis 4. Compared to competitors who receive neutral messages, targets of trash-talking exhibit a stronger preference to see their competitor lose.

We conceptualize trash-talking as a form of incivility that is expressed in competitive contexts. Incivility has previously been explored in cooperative settings or in mixed-motive interactions where there is an opportunity to collaborate. In cooperative settings, targets of incivility are more likely to perform worse on both routine and complex tasks (Pearson & Porath, 2005). The detrimental effect on performance can be triggered by incivility from a direct authority figure, incivility from a third party, or imagined incivility (Porath & Erez, 2007). When individuals are targeted with uncivil or aggressive communication, they often experience psychological distress (Tepper, 2000), feel negative emotions (Bowling & Beehr, 2006), and become cognitively depleted (Rafaeli et al., 2012).

The existing literature has considered a number of distinct forms of aggressive communication. These include incivility (Cortina et al., 2001; Pearson & Porath, 2005), workplace victimization (Aquino & Thau, 2009), abusive supervision (Tepper, 2000), and bullying (Einarsen & Skogstad, 1996). Like trash-talking, these aggressive forms of communication demean the target. Trash-talking, however, differs from these other forms of aggressive communication, because trash-talking occurs within a competitive relationship. We expect the consequences of trash-talking to be different from the consequences of other forms of aggressive communication, because of the competitive context within which trash-talking occurs. Aggressive communication is likely to trigger a desire to undermine the aggressor. In cooperative and

mixed-motive setting, this may cause the target of aggressive communication to engage in uncooperative behavior—defect, fail to share information, withdraw, or engage in deviant behaviors (Thau, Bennett, Mitchell, & Marrs, 2009). In competitive settings, however, the target of trash-talking may become motivated to outperform the aggressor. Whereas incivility may hinder effort-based performance in cooperative and mixed-motive settings, trash-talking may boost effort-based performance.

Hypothesis 5. In competitive situations, targets of trash-talking perform better on effort-based tasks than targets of neutral messages. In cooperative situations, targets of incivility perform worse on effort-based tasks than targets of neutral messages.

In addition to boosting the motivation to exert greater effort, we expect targets of trash-talking to become more likely to engage in unethical behavior. We build on work linking rivalry and unethical behavior (Kilduff et al., 2016). Kilduff et al. (2016) found that the experience of rivalry promotes unethical behavior in both laboratory and field settings, such as soccer games. Related work has also found that a competitive mindset promotes unethical behavior (Pierce et al., 2013; Schweitzer, DeChurch, & Gibson, 2005).

We expect trash-talking to shift the psychological cost-benefit calculus of engaging in unethical behavior. In general, the harmful consequences to others of acting unethically constrain unethical behavior (Gneezy, 2005; Wang, Zhong, & Murnighan, 2014; Yip, Lee, Chan, & Brooks, 2017; Yip & Schweitzer, 2016; Zhong, 2011). However, trash-talking is likely to decrease concern about harming an opponent and increase the perceived benefits of beating an opponent. As a result, we predict that trash-talking promotes unethical behavior.

Hypothesis 6. Compared to competitors who receive neutral messages, targets of trash-talking are more likely to engage in unethical behavior.

Although we expect trash-talking to increase effort, in some domains, such as tasks that require creativity, trash-talking may harm performance. In addition to effort, creativity requires insight. Creativity is the identification of novel and useful solutions to a problem that lacks a readily identifiable solution (Amabile, 1983). Identifying a creative solution requires extensive cognitive resources (Boden, 1994), as they retrieve information, generate ideas, modify and elaborate ideas (Leung, Maddux, Galinsky, & Chiu, 2008).

We expect trash-talking to harm creative performance. Compared to targets of neutral communication, targets of trash-talking are more likely to be distracted and devote cognitive resources to self-evaluation maintenance (Tesser, 1988). That is, targets of trash-talking may devote cognitive resources to repairing their self-image and denigrating the aggressor (Dunn, Ruedy, & Schweitzer, 2012; Porath & Erez, 2007). As a result, targets of trash-talking are likely to possess fewer cognitive resources and perform less well on creative tasks. This rationale is consistent with incivility findings in cooperative domains in which targets of incivility performed poorly on creative tasks (Porath & Erez, 2007; Porath & Erez, 2009).

Hypothesis 7. Compared to competitors who receive neutral messages, targets of trash-talking are more likely to perform worse on creative tasks.

1.6. Overview of studies

In our investigation, we report results from a pilot study and six laboratory experiments to describe the relationship between trash-talking and competitive behavior. In a pilot study, we find evidence for a failed mental model of trash-talking; trash-talkers fail to anticipate how trash-talking motivates targets.

In Study 1, we link trash-talking with performance on effort-based tasks. We also find that perceptions of rivalry mediate the relationship between trash-talking and performance. In Study 2, we contrast the effect of trash-talking with three neutral conditions: neutral messages, non-task communication, and no message. We find that trash-talking boosts effort-based performance, instead of neutral messages diminishing effort-based performance. In Study 3, we demonstrate that targets of trash-talking are willing to incur a cost to harm their opponent. In Study 4, we contrast the effects of incivility in a cooperative setting with the effects of trash-talking in a competitive setting. In Study 5, we link trash-talking with cheating, and in Study 6, we find that trash-talking harms creative performance. Across our studies, we find that trash-talking motivates competitors to engage in effortful, costly, and even unethical behavior, to defeat trash-talkers.

Although trash-talking is prevalent in competitive interactions, it is a novel construct in the organizational behavior literature. Our work makes an important contribution by introducing the construct of trash-talking and linking the literatures on competition, rivalry, and incivility. By exploring the role of trash-talking, we advance our understanding of how social exchanges between opponents can intensify competitive behaviors. We elucidate when trash-talking facilitates purposeful behaviors and when trash-talking promotes unethical behaviors.

Understanding incivility in a competitive context is particularly important for organizations. Within organizations, employees regularly vie for scarce resources and many interactions between competing individuals are discourteous (Aquino & Thau, 2009; Porath & Erez, 2007; Porath & Erez, 2009).

2. Pilot Study

In this study, we examine intuitions about trash-talking. We explore the perspective of trash-talkers to gain insight into the mental model of lay perceptions about how trash-talking might motivate targets.

We recruited 157 adult participants via Amazon Mechanical Turk ($M_{\text{age}} = 34$ years, $SD_{\text{age}} = 10.39$ years; 50% female). We asked participants to consider participating in a hypothetical competition with another participant. We informed participants that competition would involve a letter counting task, and that the winner would earn a bonus payment. Before starting the competition, we told participants that they could send a message to their opponent. We told half of the participants that they would send the following (Trash-talking) message: “Just to let you know, that prize is mine...I’m totally going to crush you in this task. I’m going to send you home crying to your mommy...sucker.” We told the other half of the participants that they would send the following (Neutral) message: “Whoever does the task better will get the prize. Let’s see what happens!” (In the actual materials that participants viewed, we did not present the messages with the labels, Trash-talking or Neutral.)

We then measured participants’ expectations about their opponents’ motivation and focus (see Appendix A). Participants who were asked to imagine sending trash-talking messages did not forecast that their opponents would be more motivated ($M = 6.07$, $SD = 1.16$) than did those who were asked to imagine sending neutral messages ($M = 5.95$, $SD = 0.99$), $t(155) = -0.69$, $p = 0.49$, $\eta^2 = 0.003$. We also found that participants who were asked to imagine sending the trash-talking messages forecasted that their opponent would be less likely to focus ($M = 5.19$, $SD = 1.23$) than did those who were asked to imagine sending neutral messages ($M = 5.65$, $SD = 0.92$), $t(155) = 2.62$, $p = 0.01$, $\eta^2 = 0.042$. Taken together, these results suggest that people expect trash-talking messages to distract, but not motivate a target.

3. Study 1

In Study 1, we test our hypothesis that trash-talking increases effort-based performance. We manipulate whether or not participants are exposed to trash-talking, and we measure performance on a persistence task.

We also investigate the psychological mechanism underlying the link between trash-talking and effort-based performance. We examine whether perceptions of rivalry mediate the relationship between trash-talking and performance. We postulate that when people compete with trash-talking opponents rather than neutral opponents, they become more likely to perceive their opponents as rivals, which intensifies competitive behavior.

3.1. Method

3.1.1. Participants

We put in a request for the behavioral lab to recruit as many participants as possible across four afternoons with the expectation that we would obtain data from at least 60 participants per condition. We recruited 178 students ($M_{\text{age}} = 24$ years, $SD_{\text{age}} = 9.40$ years; 60% female) to a behavioral laboratory from a North American university to participate in this study. We paid participants a \$10 show-up fee and provided the opportunity to earn \$1 based on their performance.

3.1.2. Procedure

First, we paired each participant with another participant in the same session and had them communicate with each other for two minutes via an online instant messaging platform at computer terminals. In this stage of the experiment, participants gained familiarity with the messaging platform and experienced an authentic interpersonal interaction with another participant. Participants engaged in chit-chat (see Appendix B for an example). We required an even number of participants in each session. If an odd number of participants showed up to a session, one participant did not participate in our study and was instructed to complete a separate task.

Second, after their initial interactions with another participant, we presented participants with instructions about a slider task. We explained that in this task, participants would compete against the participant with whom they had just interacted. We informed participants that if they outperformed their opponent, they would receive a \$1 bonus and their opponent would receive \$0. And similarly, we explained that if their opponent outperformed them, their opponent would receive a \$1 bonus and they would receive nothing.

Third, before starting the slider task, we had participants interact on the messaging platform for a second time. This time, however, participants interacted not with the participant opponent they had interacted with initially, but instead with a confederate who sent them three messages. The first message was the same across conditions. The second and third messages varied between the Trash-talking and the Neutral conditions.

In the Trash-Talking condition, participants received the following messages: (1) “hey - it looks like we’ll be competing against each other in the next task” (2) “just so you know, i’m taking that bonus money...you’re definitely going to lose” (3) “i’m smarter than you...i’m faster than you...i’m going to beat you so bad.” We include the complete set of messages that we used in Appendix C.

In the Neutral condition, participants received the following three messages: (1) “hey - it looks like we will be competing against each other in the next task” (2) “so whoever does the task better gets some bonus money” (3) “let’s see what happens.”

After receiving either trash-talking or neutral messages, participants completed a slider task. We adapted this task, a measure of effort-based performance, from Gill and Prowse (2012). In this

task, we presented participants with 50 sliders, each ranged from 0 to 1000 (See Appendix D for an example). Next to each slider, we indicated a target number (e.g., 751). For each slider, participants needed to move the slider from its default position of 0 to the target number indicated beside the slider. We used the number of correctly moved sliders as our measure of effort. We told participants that the maximum amount of time that they could spend on the slider task was two minutes, but that they could exit at any point in time. We displayed a timer on the screen.

Following the slider task, we had participants report the extent to which they perceived their opponent as a rival. Participants completed a manipulation check and answered debriefing questions. We concluded the study by compensating and debriefing participants.

3.1.3. Measures

3.1.3.1. Effort-based performance. We assessed persistence by recording the number of sliders moved to the correct position within the allotted two minutes ($M = 4.88$, $SD = 2.89$). Ten out of 178 participants completed zero of the sliders correctly.¹

3.1.3.2. Rivalry. In this study, we included an adapted three-item measure of perceived rivalry from Kilduff (2014). After the performance task, participants rated the extent to which they viewed the other participant as a rival on a scale ranging from 1 (*not at all*) to 7 (*very much*) ($M = 3.72$, $SD = 2.06$; $\alpha = 0.94$). For example, “I viewed the other participant as a rival of mine.” We include the complete scale that we used in Appendix E.

3.1.3.3. Trash-talking manipulation check. After measuring rivalry, participants rated the extent to which the other participant sent aggressive/boastful/obnoxious/rude messages from 1 (*not at all*) to 7 (*very much*) ($M = 3.49$, $SD = 2.18$; $\alpha = 0.95$).

3.2. Results and discussion

Participants in the Trash-Talking condition reported that their opponent expressed greater incivility ($M = 5.16$, $SD = 1.47$) than did those in the Neutral condition ($M = 1.74$, $SD = 1.24$), $t(176) = -16.76$, $p < 0.001$, $\eta^2 = 0.615$. We report incivility manipulation checks across all studies in Table 1.

Supporting Hypothesis 1, participants in the Trash-Talking condition reported much higher levels of perceived rivalry ($M = 4.43$, $SD = 2.13$) than did those in the Neutral condition ($M = 2.98$, $SD = 1.71$), $t(176) = -5.00$, $p < 0.001$, $\eta^2 = 0.124$.

Consistent with Hypothesis 2, even though participants were constrained by a two-minute limit, participants in the Trash-Talking condition exerted more effort than did those in the Neutral condition. As predicted, participants in the Trash-Talking condition moved more sliders to the correct position ($M = 5.57$, $SD = 3.49$) than did those in the Neutral condition ($M = 4.15$, $SD = 1.85$), $t(176) = -3.37$, $p = 0.001$, $\eta^2 = 0.061$ (see Fig. 1). Additional analyses revealed that the vast majority, 173 of 178 participants used the entire two minutes (120 s). We found no significant difference in the time spent between participants in the Trash-Talking condition ($M = 119.54$ s, $SD = 3.14$) and participants in the Neutral condition ($M = 116.83$ s, $SD = 17.25$), $t(176) = -1.47$, $p = 0.143$, $\eta^2 = 0.012$.

For Hypothesis 3, we examined whether perceived rivalry mediates the effect of trash-talking on effort-based performance by employing the indirect bootstrapping technique (Preacher & Hayes, 2008). As recommended by Zhao, Lynch, and Chen (2010),

¹ We include all participants in our analysis. However, if we exclude participants who completed zero sliders, the results are nearly identical, $t(166) = -2.74$, $p = 0.007$.

Table 1
Incivility ratings of different trash-talking manipulations.

Study	Trash-talk Manipulation	M	SD
1	Message 1: hey - it looks like we'll be competing against each other in the next task Message 2: just so you know, i'm taking that bonus money...you're definitely going to lose Message 3: i'm smarter than you...i'm faster than you...i'm going to beat you so bad	5.16	1.47
2	Message 1: hey - it looks like we'll be competing against each other in the next task Message 2: this is going to be so easy...i'm taking that bonus money...you're a total loser Message 3: i'm going to crush you - at the end of this, you're going to be begging me for that dollar	5.94	1.28
3	Message 1: it looks like we're going to be competing on the next task Message 2: i don't think you have a clue about what's about to happen...that bonus money is mine Message 3: hey dummy - you're going to lose, and you're going to lose bad...end of story!!!!!!	5.48	1.52
4	Message 1: it looks like we'll be competing against [cooperating with] each other in the next task Message 2: why did I get paired with you? honestly...i can already tell that you're a complete loser Message 3: what can I say...you're a total clown	5.38	1.35
5	Message 1: hey there - it looks like we'll be competing against each other in the next task Message 2: i want that dollar and i'm going to beat you...you're going down Message 3: i know a loser when i see one...i'm going to beat you like a rented mule	4.87	1.66
6	Message 1: hi - it seems like we're going to be competing against each other Message 2: i'm going to crush you...at the end of this, you're going to be begging me for that dollar Message 3: this is going to be so easy...i can already tell that you're dumb as a rock	5.80	1.30

Note. As a supplementary analysis, we examine whether the incivility ratings for participants in the trash-talking condition were significantly different from the mid-point of the response scale (the midpoint of the scale was 4). In each of our four studies, we conducted a one-sample *t*-test and found that incivility ratings reported by participants in the trash-talking condition were significantly higher than the mid-point of the scale (p 's < 0.001).

we performed 10,000 bootstrap resamples using Preacher and Hayes's (2008) SAS macro. Our analysis revealed that trash-talking had an indirect effect on competitive performance through rivalry ($b = 0.32$, 95% confidence interval [CI] = 0.02, 0.87). Because the bias-corrected 95% confidence interval did not include zero, we found that perceived rivalry mediates the relationship between trash-talking and effort-based performance.

In Study 1, we investigate performance on an effort-based task. We find that participants who were targets of trash-talking performed significantly better on this effort-based task than did participants who were not targets of trash-talking. We find this difference in effort in a time-constrained task that limited the ability of participants to exert greater effort.

We also find that targets of trash-talking are more likely to view their competitors as rivals, relative to targets of neutral messages. Furthermore, we find that rivalry mediates the effect of trash-talking on effort-based performance. Targets of trash-talking are more likely to view their competitor as a rival and, as a result, they perform better when they compete on an effort-based task.

4. Study 2

In Study 2, we extend our investigation by contrasting trash-talking with three neutral conditions: a neutral message, non-

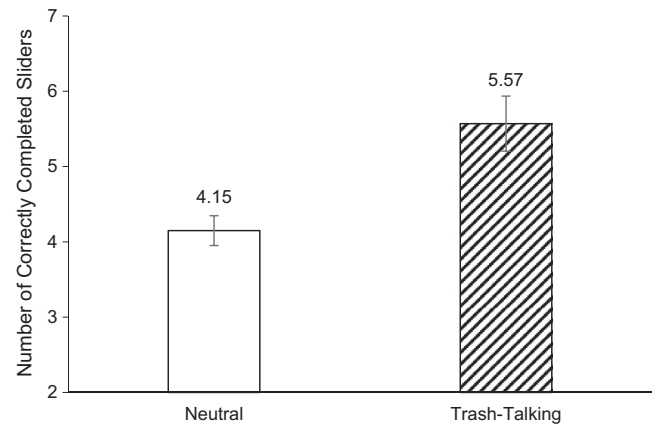


Fig. 1. Participants in the trash-talking condition moved more sliders to the correct position than did those in the neutral condition (Study 1). The error bars reflect standard errors of the means.

task communication, and no message. With this larger set of controls, we can rule out the possibility that in Study 1, rather than trash-talking boosting motivation, our neutral message signaled cooperation and decreased motivation.

4.1. Method

4.1.1. Participants

We recruited 369 participants ($M_{age} = 21$ years, $SD_{age} = 2.40$ - years; 65% female) to a behavioral laboratory from a North American university to participate in this study. We decided in advance that we would collect data from at least 360 participants (90 participants per condition \times 4 conditions). We paid participants a \$10 show-up fee and provided the opportunity to earn \$1 based on their performance.

4.1.2. Procedure

The procedure we employed for Study 2 was very similar to the one we used in Study 1. In this study, we included three additional control conditions to establish that the differences we observed in Study 1 reflect motivational benefits associated with trash-talking rather than motivational decrements associated with our neutral message.

We randomly assigned participants to one of four conditions: Trash-Talking, Neutral, Non-Task Communication, and No Message. We began the study by pairing each participant with another participant in the same session. In the Trash-Talking, Neutral, and Non-Task Communication conditions, participants communicated with each other for two minutes using the online instant messaging platform. During this exchange, participants engaged in non-task communication and discussed their day. In the No Message condition, participants did not communicate with each other. After this initial interaction, we informed participants that they would compete against the participant with whom they had interacted on a performance task, and that the winner would receive a \$1 bonus. Participants then returned to the online messaging platform, but unbeknownst to them, rather than chat with their original partner, they interacted with a confederate.

In the Trash-Talking condition, participants received the following three messages: (1) "hey - it looks like we'll be competing against each other in the next task" (2) "this is going to be so easy...i'm taking that bonus money...you're a total loser" (3) "i'm going to crush you - at the end of this, you're going to be begging me for that dollar." In this study, we manipulated trash-

talking with a different set of trash-talking messages than the messages we used in Study 1 to test the robustness of our findings.

In the Neutral condition, participants received the following three messages: (1) “hey – it looks like we’ll be competing against each other in the next task” (2) “so whoever does the task better gets some bonus money” (3) “let’s see what happens”.

In the Non-Task Communication condition, participants did not participate in a second chat. That is, they did not interact with a confederate or their original partner. Instead, they proceeded directly to the performance task.

In the No Message condition, participants proceeded directly to the performance task without ever interacting with another participant or a confederate.

As in Study 1, all participants completed the slider task, our measure of effort-based performance. Participants then reported perceptions of rivalry, completed a manipulation check, and answered demographic questions. We then debriefed and compensated participants at the end of the study.

4.1.3. Measures

4.1.3.1. Effort-based performance. As in Study 1, we assessed persistence by recording the number of sliders moved to the correct position within the allotted two minutes ($M = 5.49$, $SD = 2.35$).

4.1.3.2. Rivalry. As in Study 1, participants rated the extent to which they viewed the other participant as a rival on a scale ranging from 1 (*not at all*) to 7 (*very much*) ($M = 3.39$, $SD = 1.89$; $\alpha = 0.90$).

4.1.3.3. Trash-talking manipulation check. Participants rated the extent to which they perceived their opponent as aggressive/boastful/obnoxious/rude/engaging in trash-talk messages from 1 (*not at all*) to 7 (*very much*) ($M = 2.63$, $SD = 2.17$; $\alpha = 0.98$).

4.2. Results and discussion

Participants in the Trash-Talking condition reported that they perceived their opponent as being more uncivil ($M = 5.94$, $SD = 1.28$) than did those in the Neutral condition ($M = 1.53$, $SD = 0.95$), Non-Task Communication condition ($M = 1.16$, $SD = 0.52$), and No Message condition ($M = 1.94$, $SD = 1.21$), $F(3, 365) = 424.88$, $p < 0.001$, $\eta^2 = 0.777$. For each dependent variable, we contrast measures in the Trash-Talking condition to measures in each of the three control conditions. All pairwise comparisons between the Trash-Talking condition and the three control conditions were significantly different, p 's < 0.05 . We report planned contrasts of incivility, rivalry, and effort-based performance in [Table 2](#).

Supporting Hypothesis 1, participants in the Trash-Talking condition reported much higher levels of perceived rivalry ($M = 4.05$, $SD = 1.97$) than did those in the Neutral condition ($M = 3.30$, $SD = 1.63$), Non-Task Communication condition ($M = 2.76$, $SD = 1.78$), and No Message condition ($M = 3.45$, $SD = 1.96$), $F(3, 365) = 7.79$, $p < 0.001$, $\eta^2 = 0.061$.

Supporting Hypothesis 2, participants in the Trash-Talking condition outperformed those in the three control conditions, $F(3, 365) = 7.85$, $p < 0.001$, $\eta^2 = 0.061$ (see [Fig. 2](#)). As predicted, participants in the Trash-Talking condition moved more sliders to the correct position ($M = 6.30$, $SD = 2.25$) than did those in the Neutral condition ($M = 5.63$, $SD = 2.02$), $t(180) = 2.12$, $p = 0.036$, $\eta^2 = 0.024$. We also found that participants in the Trash-Talking condition moved more sliders to the correct position ($M = 6.30$, $SD = 2.25$) than did those in the Non-Task Communication condition ($M = 4.68$, $SD = 2.34$), $t(184) = 4.79$, $p < 0.01$, $\eta^2 = 0.111$. Finally,

participants in the Trash-Talking condition moved more sliders to the correct position ($M = 6.30$, $SD = 2.25$) than did those in the No Message condition ($M = 5.39$, $SD = 2.52$), $t(181) = 2.56$, $p = 0.011$, $\eta^2 = 0.035$.

We examined whether perceived rivalry mediates the effect of trash-talking on effort-based performance by employing the indirect bootstrapping technique. Supporting Hypothesis 3, our analysis revealed that trash-talking had an indirect effect on competitive performance through rivalry ($b = 0.31$, 95% confidence interval [CI] = 0.15, 0.54). Because the bias-corrected 95% confidence interval did not include zero, we find that perceived rivalry mediates the relationship between trash-talking and effort-based performance.

In this study, we find that targets of trash-talking outperformed participants in the three different control conditions. We contrast performance of participants who experienced trash-talking with the performance of those who received neutral messages, only engaged in non-task communication initially, or did not communicate at all. Our findings indicate that it is trash-talking that boosts effort-based performance, rather than neutral messages that depress it.

5. Study 3

In Study 3, we explore how trash-talking motivates targets. In this study, we disentangle the motivation to maximize one's own gains from the motivation to see the trash-talker lose.

5.1. Method

5.1.1. Participants

We recruited 142 participants ($M_{\text{age}} = 21$ years, $SD_{\text{age}} = 3.25$ - years; 67% female) to a behavioral laboratory from a North American university to participate in this study. We paid participants a \$10 show-up fee. Participants also had the opportunity to earn a bonus payment of up to \$0.75.

5.1.2. Procedure

This study included five stages. In the first stage, consistent with our previous studies, we randomly paired each participant with another participant in the same session, and had them communicate with each other for two minutes via an online instant messaging platform.

In the second stage, we explained to participants that they would compete against the participant with whom they just interacted on a performance task, and that the winner of that competition would decide how to allocate a bonus payment.

In the third stage of the experiment, we informed participants that they would have the opportunity to interact with the participant with whom they previously communicated over the instant messaging platform. In reality, we paired participants with a confederate who sent messages consistent with one of two conditions: Trash-talking or Neutral.

In the Trash-talking condition, participants received the following messages: (1) “it looks like we’re going to be competing on the next task” (2) “i don’t think you have a clue about what’s about to happen...that bonus money is mine” (3) “hey dummy – you’re going to lose and you’re going to lose bad...end of story!!!!!!” In the Neutral condition, participants received the following messages: (1) “it looks like we’re going to be competing on the next task” (2) “apparently there is some bonus money” (3) “let’s do this” (see [Appendix C](#) for a complete list of messages for each study).

In the fourth stage of the experiment, after receiving either trash-talking or neutral messages, participants completed the per-

Table 2
Pairwise comparisons between the Trash-talking condition and each of the control conditions (Study 2).

Dependent Variable	Trash-talk Message	Neutral Message	Non-Task Communication	No Message
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Incivility	5.94 (1.28)	1.53 (.95)**	1.16 (.52)**	1.94 (1.21)**
Rivalry	4.05 (1.97)	3.30 (1.63)**	2.76 (1.78)**	3.45 (1.96)*
Effort-Based Performance	6.30 (2.25)	5.63 (2.02)*	4.68 (2.34)**	5.39 (2.52)*

Note. The significance of pairwise comparisons between the Trash-talking condition and each of the control conditions is denoted by * $p < 0.05$ or ** $p < 0.01$. The treatment condition of interest is denoted by bold font.

formance task. In this study, we measured effort-based performance using a variant of the slider task that we employed in Studies 1 and 2. For each slider, participants needed to move the slider from its default position of 0 to the target number indicated beside the slider. Unlike Studies 1 and 2, the range of values for each slider was from 0 to 300, which made the sliders less sensitive and the task slightly easier. In the slider task, there are 50 sliders and we used the number of correctly moved sliders as our measure of effort.

In the fifth stage of the experiment, following the slider task, we provided participants with feedback. We informed all of the participants that they had outperformed their opponent. We then presented participants with two options for how to allocate bonus money for themselves and their opponent. Participants could choose Option A: The participant would earn \$0.75 and the opponent would earn \$0.60. Or participants could choose Option B: The participant would earn \$0.60 and the opponent would earn \$0. That is, participants made a decision between Option A (winning a better reward) or Option B (ensuring that their opponent earns \$0). Participants who choose Option A are demonstrating a preference to maximize their reward. By contrast, participants who choose Option B are incurring a cost to demonstrate a preference to make their opponent worse off (see Appendix F for the measure).

Finally, participants answered demographic questions. We then compensated and debriefed participants.

5.1.3. Measures

5.1.3.1. Effort-based performance. Similar to our previous studies, we assessed persistence by recording the number of sliders moved to the correct position within the allotted two minutes ($M = 16.59$, $SD = 4.84$). No participants completed zero of the sliders.

5.1.3.2. Motivation to see the opponent lose. After the performance task, we assessed whether participants chose to receive a lower payoff for themselves and nothing for their opponent (Option B was scored as 1) or a higher payoff for themselves and their opponent (Option A was scored as 0).

5.1.3.3. Trash-talking manipulation check. Participants rated the extent to which the other participant sent aggressive/boastful/obnoxious messages from 1 (not at all) to 7 (very much) ($M = 3.42$, $SD = 2.41$; $\alpha = 0.98$).

5.2. Results and discussion

Participants in the Trash-Talking condition reported that their opponent expressed greater incivility ($M = 5.48$, $SD = 1.52$) than

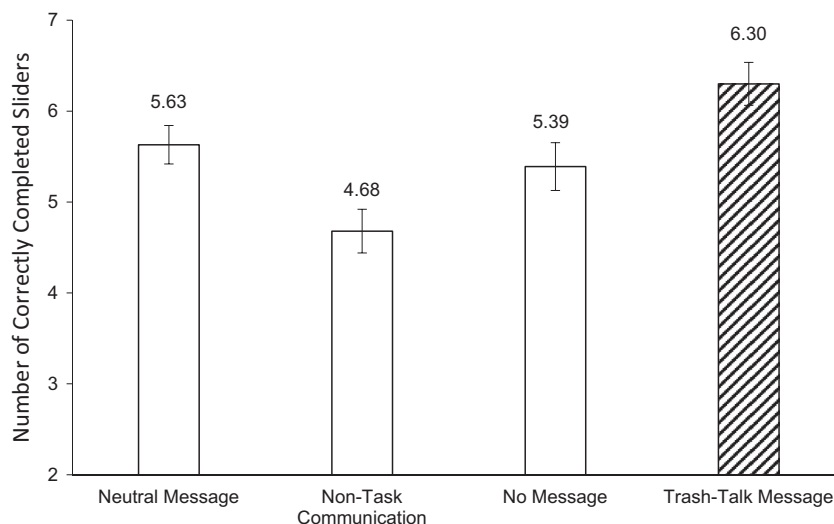


Fig. 2. Participants in the trash-talking condition moved more sliders to the correct position than did those in the neutral condition, no message condition, and non-task communication condition (Study 2). The error bars reflect standard errors of the means.

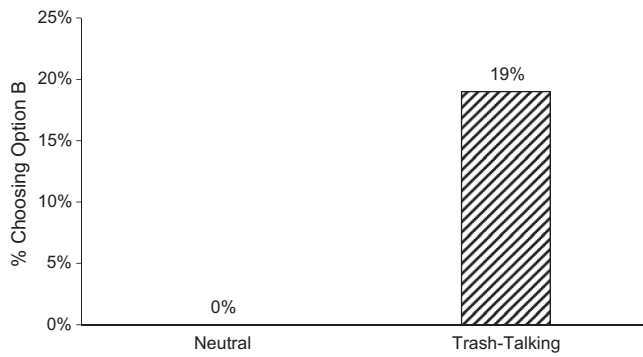


Fig. 3. More participants in the trash-talking condition chose the option that harmed their opponent than did participants in the neutral condition (Study 3).

did those in the Neutral condition ($M = 1.30$, $SD = 0.69$), $t(140) = -20.99$, $p < 0.001$, $\eta^2 = 0.759$.

Consistent with our findings in Studies 1 and 2, participants in the Trash-Talking condition moved more sliders to the correct position ($M = 17.56$, $SD = 4.55$) than did those in the Neutral condition ($M = 15.60$, $SD = 4.97$), $t(140) = -2.45$, $p = 0.016$, $\eta^2 = 0.041$. Supplementary analyses revealed that the majority of participants (139 of 142) used the entire two minutes (120 s). We found no significant difference in the time spent between participants in the Trash-talking condition ($M = 119.95$ s, $SD = 0.32$) and participants in the Neutral condition ($M = 118.28$ s, $SD = 10.37$), $t(140) = -1.37$, $p = 0.174$, $\eta^2 = 0.013$.

Further, supporting **Hypothesis 4**, we found that participants in the Trash-talking condition were more likely to choose a harmful outcome for their opponent (19%) than were those in the Neutral condition (0%), $\chi^2(1, N = 142) = 15.10$, $p < 0.01$, $\Phi = 0.326$ (see **Fig. 3**).

In Study 3, compared to competing with neutral opponents, we find that individuals who compete with trash-talkers are willing to pay a cost to ensure that their opponent earns the smallest possible bonus. This finding suggests that trash-talking changes competitors' preferences for their opponents' outcomes. Targets of trash-talking become motivated not only to do well for themselves, but also to ensure that their opponent does poorly.

6. Study 4

In Study 4, we contrast the influence of trash-talking in competitive settings with the influence of incivility in cooperative settings. In Studies 1, 2, and 3, we find that trash-talking boosts effort-based performance. In this study, we reconcile our findings with **Porath and Erez's (2007)** finding that incivility harms performance. Importantly, **Porath and Erez (2007)** studied behavior in cooperative settings, and our Studies 1, 2, and 3 investigate behavior in competitive settings. In this study, we directly test the moderating role of competition vs. cooperation on the relationship between incivility and effort-based performance. We predict that targets of incivility will perform poorly on effort-based tasks in cooperative interactions, but that targets of trash-talking will perform well in competitive interactions.

6.1. Method

6.1.1. Participants

We decided in advance to collect data from at least 240 participants (60 participants per condition \times 4 conditions). We recruited 256 participants ($M_{\text{age}} = 25$ years, $SD_{\text{age}} = 9.69$ years; 58% female) to

a behavioral laboratory from a North American university to participate in this study. We paid participants a \$10 show-up fee and participants had the opportunity to earn \$1 based on their performance.

6.1.2. Procedure

We used a procedure similar to the one we used in Study 1. One key difference is that we assigned participants to one of four conditions in a 2 (Communication: Incivility vs. Neutral) \times 2 (Setting: Competition vs. Cooperation) experimental design. Our procedure involved four stages.

As in our previous studies, in the first stage, we paired each participant with another participant in the same session, and we had them interact for two minutes via an instant messaging platform at computer terminals. During this stage of the experiment, participants engaged in non-task communication.

In the second stage, we informed participants that they would be either competing or cooperating with the participant with whom they had just interacted with on the computer. In the Competition condition, we instructed participants that they would be competing with another participant and that their performance would be compared with their opponent's performance. We informed participants that the person with the higher score would earn a \$1 bonus, and the person with the lower score would earn \$0.

In the Cooperation condition, we informed participants that they would be cooperating with another participant and that their collective performance would be compared with another team's performance. If participants and their teammate outperformed the other team, the participants and their teammate would each receive a \$1 bonus. If the other team outperformed the participants and their teammate, the participants and their teammate would receive nothing.

In the third stage, we told participants that they would have the opportunity to chat with their counterpart one more time. Instead of interacting with their counterpart, however, we paired each participant with a confederate who sent messages according to one of two conditions: Incivility or Neutral.

In the Incivility condition, participants received the following three messages: (1) "it looks like we'll be competing against [cooperating with] each other in the next task" (2) "why did I get paired with you? honestly...i can already tell that you're a complete loser" (3) "what can I say...you're a total clown"

In the Neutral condition, participants received the following three messages: (1) "it looks like we'll be competing against [cooperating with] each other in the next task" (2) "this should be interesting" (3) "let's do this"

In the fourth stage, all participants completed the slider task, which we used to measure effort-based performance. Participants completed the manipulation check and answered demographic questions. We then compensated and debriefed participants.

6.1.3. Measures

6.1.3.1. Effort-based performance. We assessed persistence by recording the number of sliders moved to the correct position within the allotted two minutes ($M = 5.57$, $SD = 2.49$).

6.1.3.2. Trash-talking manipulation check. Participants rated the extent to which the other participant sent aggressive/boastful/obnoxious/rude messages from 1 (not at all) to 7 (very much) ($M = 3.28$, $SD = 2.32$; $\alpha = 0.95$).

6.2. Results and discussion

Participants in the Incivility condition reported that their opponent expressed greater incivility ($M = 5.38$, $SD = 1.35$) than did

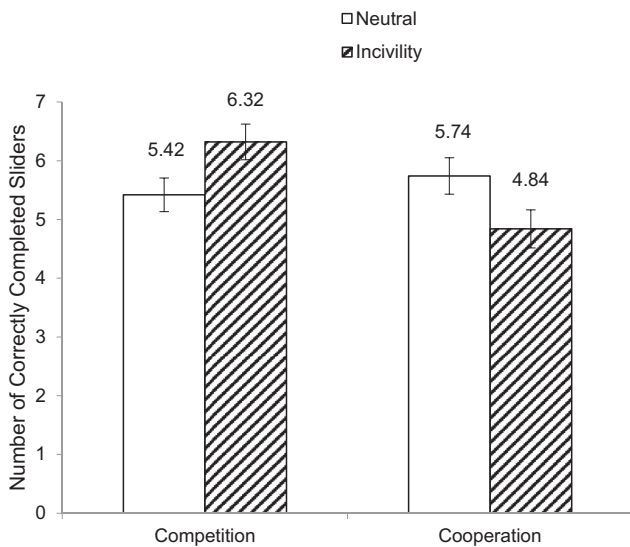


Fig. 4. When participants competed with an opponent, those in the trash-talking condition moved more sliders to the correct position than did those in the neutral condition. However, when participants collaborated with a teammate, those in the incivility condition moved fewer sliders to the correct position than did those in the neutral condition (Study 4). The error bars reflect standard errors of the means.

those in the Neutral condition ($M = 1.30$, $SD = 0.79$), $t(254) = -29.75$, $p < 0.001$, $\eta^2 = 0.777$.

We examine whether the setting, cooperative versus competitive, moderates the effect of incivility on effort-based performance. Supporting [Hypothesis 5](#), we find that the cooperative/competitive context moderates the relationship between incivility and effort-based performance, $F(1, 252) = 8.52$, $p = 0.004$, $\eta^2 = 0.033$ (see [Fig. 4](#)). We conducted t -tests for participants within the competition setting and for participants within the cooperation setting. We predicted a reversing interaction between incivility and setting instead of an attenuating interaction ([Simonsohn, Nelson, & Simmons, 2014](#)). When participants competed with an opponent, participants in the Incivility (Trash-Talking) condition outperformed ($M = 6.32$, $SD = 2.35$) those in the Neutral condition ($M = 5.42$, $SD = 2.33$), $t(124) = -2.14$, $p = 0.035$, $\eta^2 = 0.035$. However, when participants cooperated with a teammate, participants in the Incivility condition perform worse on an effort-based task ($M = 4.84$, $SD = 2.59$) than did those in the Neutral condition ($M = 5.74$, $SD = 2.52$), $t(128) = 2.01$, $p = 0.047$, $\eta^2 = 0.030$.

Consistent with our earlier findings, participants in a competitive context who were targets of trash-talking exerted greater effort than did participants who were targets of neutral messages. Yet, in a cooperative context, participants who were targets of incivility exerted less effort than did participants who were targets of neutral messages. These findings suggest that the motivational consequences of incivility rely on the competitiveness of the relationship context.

7. Study 5

In Study 5, we advance our investigation by examining the influence of trash-talking on unethical behavior. Not only may targets of trash-talking be motivated to exert greater constructive effort to beat a trash-talker, but they may also be motivated to cheat. In this study, we explore whether or not competitors who are targets of trash-talking become more likely to exploit opportunities to cheat than competitors who receive neutral messages.

7.1. Method

7.1.1. Participants

Our sample consisted of 136 students ($M_{\text{age}} = 20$ years, $SD_{\text{age}} = 2.37$ years; 63% female) from a North American university to participate in this study. We decided in advance to collect data from at least 60 participants per condition.

7.1.2. Procedure

We used methods similar to those we used in Study 1, but our performance task was very different. In this performance task, participants had the opportunity to cheat. Our procedure involved four stages.

In the first stage, we paired each participant with another participant in the same session, and we had them interact for two minutes via an instant messaging platform. Participants engaged in chit-chat.

In the second stage, we described the performance task. We explained to participants that they would compete against the person with whom they had just chatted and that the winner would earn a \$1 bonus.

In the third stage, we told participants that they would have a second opportunity to chat with their counterpart. However, instead of chatting with their counterpart from the first stage of the study, we paired each participant with a confederate who sent messages according to one of two conditions: Trash-talking or Neutral.

In the Trash-Talking condition, participants received the following three messages: (1) “hey there - it looks like we will be competing against each other in the next task” (2) “i want that dollar and i’m going to beat you. . .you’re going down” (3) “i know a loser when i see one.i’m going to beat you like a rented mule.”

In the Neutral condition, participants received the following three messages: (1) “hey there - it looks like we will be competing against each other in the next task” (2) “so whoever does the task better gets a dollar” (3) “let’s see what happens.”

In the fourth stage of the experiment, participants completed the carbon anagram task ([Ruedy & Schweitzer, 2010](#)). In this stage of the experiment, we distributed sealed manila folders containing a packet of materials. Unbeknownst to participants, the folders contained carbon paper that was stapled to the inside of the folders. Inside the manila folder, each packet included sheets of paper in the following order: an anagram sheet (stapled once at the top to the rest of the pages in the folder), miscellaneous instructions sheet (stapled at the four corners of the page to the rest of the pages in the folder), carbon paper, and a blank sheet of paper. That is, all sheets of paper were stapled to the folder so that participants could only view the top sheet and the front of the second sheet. The miscellaneous instruction sheet concealed the carbon paper. Whatever participants wrote on the anagram sheet was copied onto the blank sheet of paper. We depict an example of the carbon copy in [Fig. 5](#), Panel B.

We informed participants that they would have three minutes to unscramble as many of the 15 anagrams as they could. If participants correctly unscrambled more words than their opponent did, they would receive a \$1 bonus. If participants unscrambled fewer words than their opponents did, they would receive nothing.

We then instructed participants to start the competition at exactly the same time by breaking the seal of their manila folder. After three minutes, we told participants to stop their work and put down their pens.

We then asked participants to detach the anagram sheet from the rest of the folder. We told participants that there was not sufficient time for the second task, which was contained in the folder. We collected the folders that contained the carbon copies, and we distributed the answer keys for the anagram task. We gave partic-

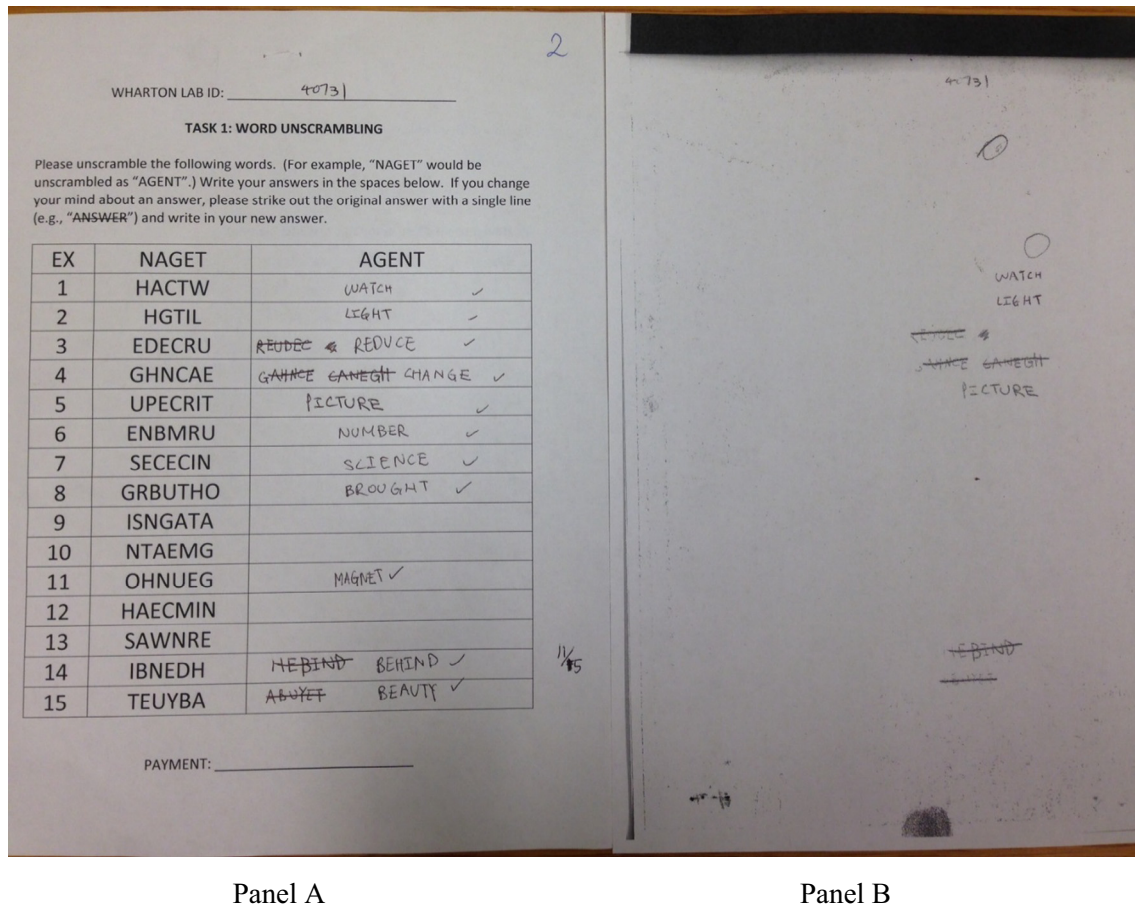


Fig. 5. In Study 5, we assessed cheating by measuring whether or not participants chose to report more correct answers on the anagram task sheet than they had actually completed within the allotted time. Panel A is an example of the anagram task sheet that we collected after a participant self-scored the anagrams. Panel B is an example of the carbon copy answers that were recorded on a blank sheet of paper in the allotted time.

Participants were given two minutes to compare their work with the answer key, and score their own performance on the anagram task. We did not inform participants that they would be grading their own anagrams until after they completed the anagram task. The experimenter did not walk around the room during the two-minute self-scoring period. During this self-scoring period, participants could either accurately score their work and report the number of anagrams that they actually completed or they could misreport and inflate the number of anagrams they had correctly completed. By reporting a high number of completed anagrams, they could increase the likelihood that they would outperform their opponent. Notably, in this stage of the experiment, participants had the opportunity to write additional unscrambled words on their anagram sheet when viewing the answer key. We depict an example of the self-scored anagrams in Fig. 5, Panel A.

After the two-minute period to self-score their answers concluded, the experimenter collected the anagram task sheets and the answer keys. Participants returned to their computers to assess the extent to which they viewed their counterpart as a rival and complete a manipulation check. We then compensated, debriefed, and dismissed them.

We assessed cheating by comparing the actual number of correct answers participants had written during the three-minute time period (which was recorded on the carbon paper) to the reported number of correct answers participants submitted after self-scoring their own performance. We are particularly interested in discrepancies between what participants had completed at the

end of three-minute work period and what they reported at the end of the experiment. We depict an example of a discrepancy in Fig. 5, Panel A and Panel B.

7.1.3. Measures

7.1.3.1. Cheating. We assessed cheating by measuring whether or not participants chose to report more correct answers on the anagram task sheet than they had actually completed within the allotted time (as indicated by what they had written on the carbon paper); across conditions, 29% of participants inflated their performance. We also assessed the amount of cheating by measuring the number of anagrams that participants misreported completing correctly.

7.1.3.2. Rivalry. Participants rated the extent to which they viewed the other participant as a rival along the three items that we used in our previous studies ($M = 3.40$, $SD = 1.82$; $\alpha = 0.85$).

7.1.3.3. Trash-talking manipulation check. After the rivalry measure, participants rated the extent to which the other participant sent aggressive/boastful/obnoxious messages from 1 (*not at all*) to 7 (*very much*) ($M = 3.20$, $SD = 2.17$; $\alpha = 0.93$).

7.2. Results and discussion

As expected, participants in the Trash-Talking condition reported greater incivility ($M = 4.87$, $SD = 1.66$) than did partici-

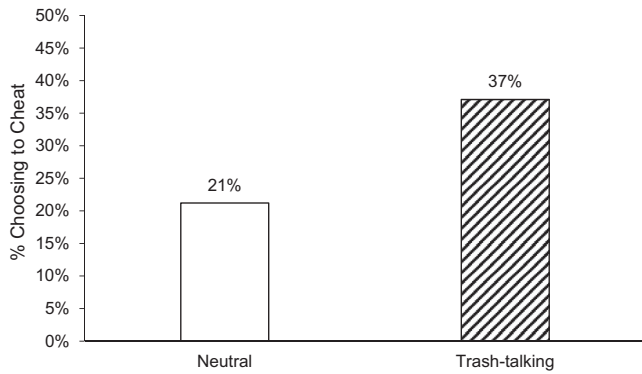


Fig. 6. Participants in the trash-talking condition were more likely to cheat than were participants in the neutral condition (Study 5).

pants in the Neutral condition ($M = 1.42$, $SD = 0.81$), $t(134) = -15.24$, $p < 0.001$, $\eta^2 = 0.634$.

Supporting **Hypothesis 6**, targets of trash-talking were more likely to cheat than were those who were not targets of trash-talking. Participants overstated their performance to a greater extent in the Trash-Talking condition ($M = 0.96$, $SD = 1.77$) than they did in the Neutral condition ($M = 0.35$, $SD = 0.83$), $t(134) = -2.54$, $p = 0.012$, $\eta^2 = 0.046$. To better understand the link between trash-talking and cheating, we examine whether trash-talking influences the likelihood of cheating, the amount of cheating, or both. We found that participants in the Trash-Talking condition were more likely to misstate their performance (37%) than were those in the Neutral condition (21%), $\chi^2(1, N = 136) = 4.15$, $p = 0.042$, $\Phi = 0.17$ (see Fig. 6). Of participants who cheated, we did not find a significant difference in the number of added words between participants who cheated in the Trash-Talking condition ($M = 2.58$, $SD = 2.08$) and participants who cheated in the Neutral condition, ($M = 1.64$, $SD = 1.08$), $t(38) = -1.56$, $p = 0.126$, $\eta^2 = 0.060$.

Using the indirect bootstrapping technique (Preacher & Hayes, 2008), we tested whether rivalry mediates the effect of trash-talking on the likelihood of cheating. The results revealed that trash-talking had an indirect effect on competitive performance through rivalry ($b = 0.44$, 95% confidence interval [CI] = 0.02, 0.97).

In this study, we found no significant difference in correctly completed anagram performance between participants in the Trash-Talking condition ($M = 3.94$, $SD = 2.37$) and the Neutral condition ($M = 3.88$, $SD = 2.18$), $t(134) = -0.16$, $p = 0.870$, $\eta^2 = 0.000$. The carbon anagram task was an ideal tool to measure cheating, but less so for measuring effort. The nature of this task was very different from our prior tasks. This task was time constrained, more intrinsically interesting than our prior tasks, and in addition to effort, it requires ability. As a result, the nature of this task and the three-minute limit on this task constrained the extent to which we can gauge effort.

In this study, we find that when people interact with trash-talking opponents, they are more likely to capitalize on an opportunity to cheat. This finding suggests that in addition to motivating constructive effort as we find in Studies 1, 2, 3, and 4, trash-talking also motivates cheating.

8. Study 6

In Study 6, we consider a domain in which the harmful effects of trash-talking outweigh the beneficial motivational effects of trash-talking. In this study, we identify a performance domain in which trash-talking harms performance: creativity. Creativity requires

insight and cognitive resources to reach a solution in addition to effort (Boden, 1994; Leung et al., 2008).

We predict that targets of trash-talking will exhibit less creativity than targets of neutral messages. Similar to other forms of incivility (Porath & Erez, 2007), trash-talking can distract targets as they engage in self-evaluation maintenance (Tesser, 1988). The interference of devoting cognitive resources to repair their self-image may lead targets of trash-talking to have fewer cognitive resources available to perform a creative task effectively.

When distracted, individuals often perform poorly, relative to their normal ability (Beilock & Carr, 2001). For example, Beilock, Kulp, Holt, and Carr (2004) found that the pressure to perform harmed performance with unpracticed mathematical problems because of higher cognitive demands. We expect trash-talking to distract targets and harm their ability to solve problems involving creativity.

8.1. Method

8.1.1. Participants

We decided in advance to collect data from at least 200 participants (100 participants per condition \times 2 conditions), and we recruited 205 participants ($M_{\text{age}} = 29$ years, $SD_{\text{age}} = 11.61$ years; 58% female) to a behavioral laboratory from a North American university. We paid participants a \$10 show-up fee and participants had the opportunity to earn a \$1 bonus based on their performance.

8.1.2. Procedure

We used a procedure similar to the one we used in our previous studies, except that we employed a different performance task. In this performance task, we had participants solve a problem that required creative insight. Our procedure involved four stages.

In the first stage, we paired each participant with another participant in the same session, and we had them interact for two minutes via an instant messaging platform when seated at computer terminals. Participants engaged in chit-chat.

In the second stage, we instructed the participants that they would be competing with the participant with whom they had interacted on the chat platform. We informed participants that the winning participant would receive \$1 and that the other participant would receive nothing.

In the third stage, we told participants that they would have the opportunity to chat a second time with their counterpart. This time, however, rather than chatting with their counterpart from the first stage of the study, we paired each participant with a confederate who sent messages according to one of two conditions: Trash-Talking or Neutral.

In the Trash-Talking condition, participants received the following three messages: (1) "hi - it seems like we're going to be competing against each other" (2) "i'm going to crush you. . .at the end of this, you're going to be begging me for that dollar" (3) "this is going to be so easy. . .i can already tell that you're dumb as a rock."

In the Neutral condition, participants received the following three messages: (1) "hi - it seems like we're going to be competing against each other" (2) "so whoever does the task better gets some bonus money" (3) "let's do this."

In the fourth stage of the experiment, participants completed a creativity task, the Duncker candle problem (Duncker, 1945). The Duncker candle problem is an established and widely used measure of creative insight (Gino & Wiltermuth, 2014; Maddux & Galinsky, 2009). In this problem, we presented participants with a picture containing a few objects on a table: a candle, a pack of matches, and a box of tacks, all of which are next to a wall (see



Fig. 7. Duncker candle problem in Study 6.

Fig. 7). We told participants that they needed to figure out, using only the objects on the table, how to attach the candle to the wall so that the candle burns properly and does not drip wax on the table or the floor. We explicitly instructed participants that only the objects on the table could be used to solve the problem. We informed participants that they would have up to three minutes to complete this task and that they could exit at any time. We reminded participants that their performance would be evaluated against another participant with whom they had interacted in the previous chat session.

The correct solution involves the creative insight that the box of tacks can be emptied, tacked against the wall, and used to hold the candle. To solve this problem, participants need to exhibit divergent thinking and recognize that the function of a box is not limited to holding tacks; it can also be used as a stand (Duncker, 1945; Gino & Wiltermuth, 2014; Maddux & Galinsky, 2009).

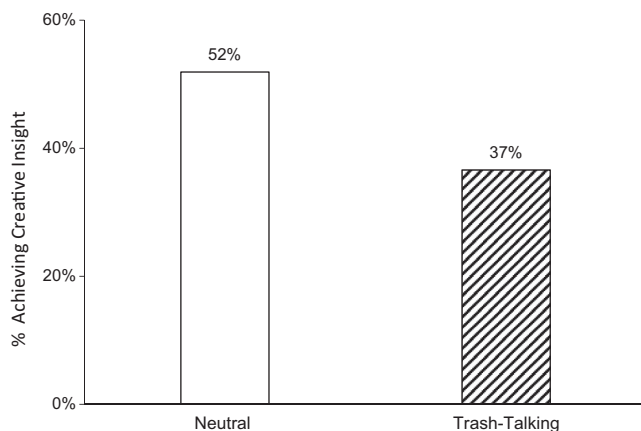


Fig. 8. Participants in the trash-talking condition were less likely to think creatively than were participants in the neutral condition (Study 6).

Finally, participants answered manipulation check and demographic questions. We then compensated and debriefed the participants.

8.1.3. Measures

8.1.3.1. Creativity. We had two raters assess creativity by recording whether participants provided the correct solution (coded as 1) or an incorrect solution (coded as 0) to the Duncker candle problem. Agreement was very high ($r = 0.95$, $p < 0.001$), and differences were resolved through discussion. Across both conditions, 44% of participants solved the problem correctly.

8.1.3.2. Trash-talking manipulation check. After completing the creativity task, participants rated the extent to which the other participant sent aggressive/boastful/obnoxious/rude messages from 1 (not at all) to 7 (very much) ($M = 3.55$, $SD = 2.46$; $\alpha = 0.98$).

8.2. Results and discussion

As predicted, participants in the trash-talking condition reported greater incivility ($M = 5.80$, $SD = 1.30$) than did participants in the neutral condition ($M = 1.37$, $SD = 0.75$), $t(203) = -30.12$, $p < 0.001$, $\eta^2 = 0.025$.

Supporting Hypothesis 7, targets of trash-talking were less likely to solve the creative insight problem than were targets of neutral communication. We found that participants in the Trash-Talking condition were less likely to provide the correct solution (37%) than were those in the Neutral condition (52%), $\chi^2(1, N = 205) = 4.85$, $p = 0.028$, $\Phi = -0.15$ (see Fig. 8).

We find that when interacting with trash-talking opponents, people are less likely to be able to think creatively than when interacting with neutral opponents. Our findings identify an important domain of performance in which trash-talking harms performance. Unlike effort-based tasks, trash-talking impedes creative performance.

9. General discussion

Trash-talking changes competitive behavior. Across a pilot study and six experiments, we demonstrate that trash-talking motivates targets in ways that people fail to forecast. In effort-based tasks, competitors who received trash-talking messages outperformed those who received neutral messages. We find that trash-talking triggers perceptions of rivalry, and that perceptions of rivalry mediate the relationship between trash-talking and effort-based performance. We also find that targets of trash-talking derive psychic benefits from defeating trash-talking opponents, independent of the economic outcomes. Competitors are keen to see their trash-talking opponent lose, even at the expense of maximizing their own outcomes. We integrate our findings with prior incivility research and find that trash-talking promotes effort-based performance in competitive settings, but incivility harms effort-based performance in cooperative settings. The motivational effects of trash-talking, however, extend to cheating. Targets of trash-talking were more likely to cheat in a competition than were participants who received neutral messages. That is, not only are targets of trash-talking motivated to exert greater constructive effort, but they are also more likely to exploit opportunities to engage in unethical behavior. Finally, we identify a domain of performance that suffers when individuals are targets of trash-talking: creativity. We demonstrate that trash-talking harms creative performance.

Across our studies, we provide an initial conceptualization and empirical test of the effects of trash-talking. We focus on the

experience of the target, and we examine consequences of trash-talking. Across different trash-talking manipulations and different behavioral outcomes, we identify a consistent pattern of results linking trash-talking with performance. Collectively, our work shows that trash-talking is a common workplace behavior that can foster rivalry and motivate both constructive and destructive behavior.

9.1. Theoretical contributions

Our work makes several theoretical contributions. First, we introduce trash-talking as a form of competitive communication. We define trash-talking as boastful comments about the self or insulting comments about an opponent that are delivered by a competitor typically before or during competition. Recent research has highlighted the significance of the relationships between competitors (Kilduff, 2014; Kilduff et al., 2010; Larkin et al., 2012), but surprisingly little attention has been devoted to understanding how competitors relate to each other before and during competition. We show that trash-talking is a common and important factor that influences competitive relationships.

Second, we conceptualize trash-talking as a form of competitive incivility. Prior research has revealed that incivility harms motivation and performance (Porath & Erez, 2007; Porath & Erez, 2009). However, existing work has focused on incivility and aggression in cooperative or mixed-motive interactions. Our findings explore incivility in a competitive context and demonstrate that incivility can boost motivation, and even promote unethical behavior. Taken together, our findings extend the literature on incivility.

Third, our research adds to the growing rivalry literature. Rivalry amplifies the psychological stakes of competition, and provides psychic benefits for winning that are independent of the economic outcomes (Converse & Reinhard, 2016; Kilduff, 2014; Kilduff et al., 2010). Kilduff et al. (2010) identified a history of repeated competition as an important antecedent for triggering rivalry. We expand the existing conceptualization of antecedents to include trash-talking. We find evidence that trash-talking shifts targets' perceptions of opponents to view them as rivals. We find that perceptions of rivalry mediate the relationship between trash-talking and performance.

Fourth, our work bridges the literatures of incivility and rivalry to contribute to the understanding of the psychology of motivation. We disentangle a preference to maximize one's own gains in a competition from the preference to see an opponent lose in a competition. Our findings reveal that incivility boosts motivation and triggers a preference to see a trash-talking opponent lose. We extend the existing literature on aggression and retaliation by examining aggression in competitive interactions. Previous research has shown that angry expressions in mixed-motive interactions can trigger retaliation (Wang et al., 2012; Yip & Schweinsberg, 2017). In prior studies, retaliation has often conflated the motive to harm with the motive to pursue self-interest. In our investigation, we find that targets of trash-talking are willing to incur an economic cost to see their opponent suffer.

Fifth, although trash-talking can motivate constructive effort, it can also promote destructive behaviors by the target. We find that targets of trash-talking are particularly likely to cheat in order to defeat their opponents. Recent studies have shown that a number of interpersonal factors influence unethical behavior (Gino & Bazerman, 2009; Koning, Steinel, Beest, & Dijk, 2011; Yip & Schweitzer, 2015). We identify an important interpersonal antecedent to cheating. In competition, aggression is often communicated and deception is commonly observed. Our work reveals how trash-talking can promote unethical behavior.

Sixth, we find evidence that trash-talking can distract targets, so that they are unable to perform creative tasks effectively. Prior work has revealed that creativity requires extensive cognitive resources (Gino & Wiltermuth, 2014; Porath & Erez, 2009). Our finding expands our understanding about the association between aggressive communication and cognitive interference, and how competitive performance involving creativity can be diminished. Collectively, we shed insight into how trash-talking hampers performance, despite the boost in motivation.

9.2. Practical implications

Our findings inform a number of practical implications. First, we provide prescriptive advice for potential and habitual trash-talkers. Individuals who tend to express incivility towards others in competitive situations may fail to anticipate the motivational effects of trash-talking on targets. Trash-talkers need to recognize that they are unintentionally boosting their targets' motivation and performance. We advise trash-talkers to engage in deeper perspective-taking to gauge the interpersonal consequences of their rude behavior.

Second, our findings suggest that managers, coaches, and executives should think carefully about exposure to trash-talking messages. Just as organizational norms of conflict can vary (Gelfand, Leslie, & Keller, 2008), organizational norms regarding trash-talking are likely to vary widely, and we urge managers to think deliberately and strategically about the use of trash-talking within their organization and between organizations. For example, managers should think carefully about the types of tasks that employees perform, and how trash-talking may boost performance on effort-based tasks, but harm performance on cognitively demanding or creative tasks.

Third, managers should devote particular attention to monitoring their employees' behavior after they have been exposed to trash-talking. Our work reveals that targets of competitive incivility are more likely to cheat in order to outperform their uncivil opponents. This reaction to incivility can have severe detrimental consequences for individuals and their organizations.

9.3. Limitations and future directions

Our research is subject to several limitations that provide opportunities for future work. We focused our investigation on the interpersonal consequences of trash-talking by examining the effects of trash-talking on the target. However, future research should explore the psychic benefits and costs of engaging in trash-talking from the vantage of the trash-talker. It is possible that trash-talking can elevate the motivation for the trash-talker.

Second, future work should extend our investigation of the failed mental model. We find that participants failed to anticipate how trash-talking boosts effort-based performance, but future work should explore the mental model people hold for how targets, trash-talkers themselves, teams, neutral observers, and organizations react to trash-talking. Quite possibly, people may fail to appreciate the full range of effects that trash-talking has on others. Future research could also examine predicted reactions to trash-talking in various domains such as unethical behavior.

Third, our work makes a theoretical contribution by showing how trash-talking is capable of triggering a rivalry in the absence of historical relationships. We did not focus our investigation on trash-talking between existing rivals, friends, or colleagues. We call for future research to explore the interplay between trash-talking and relationship history. Although trash-talking can ignite a rivalry between strangers, existing rivals may be more likely to engage in

trash-talking. We conjecture that trash-talking and rivalry can fuel each other into an incivility spiral (Andersson & Pearson, 1999). We also call for future research to explore trash-talking in field settings and to investigate the moderating role of factors such as emotion (Dunn & Schweitzer, 2005; Moran & Schweitzer, 2008), emotional intelligence (Yip & Côté, 2013; Yip & Martin, 2006), construal level (Lee & Zhao, 2014), and even factors such as temperature (Larrick, Timmerman, Carton, & Abrevaya, 2011) and alcohol consumption (Schweitzer & Gomberg, 2001; Schweitzer & Kerr, 2000). This work will deepen our understanding of the antecedents and consequences of trash-talking.

Fourth, we conducted our studies in a context where the trash-talker and the target had equal status. In competitions, individuals often hold different levels of status either based on their position in a company or based on a ranking in a league or tournament. Future research could explore whether the relationship between trash-talking and performance varies according to status. Trash-talking triggers salient social comparisons and it may influence performance differently when trash-talkers are higher status than their targets.

Fifth, we examined trash-talking between individuals prior to and during competition. However, future research could investigate trash-talking in groups. It would be valuable to explore trash-talking between groups, and to explore the effects of trash-talking on observers who are not targets. This future work could expand our understanding of when trash-talkers help or hurt group cohesion and functioning. There may be both positive and negative group dynamics that result from group members who engage in trash-talking. In addition, future work could examine how targets of trash-talking behave in competitions involving additional competitors. For example, motivated to see the trash-talker lose, a target of trash-talking may become more likely to help another competitor.

Sixth, the content of the trash-talking messages we studied consisted of boastful and insulting comments related to the competitive task. However, there may be variations of trash-talking and future studies are needed to provide a more comprehensive and nuanced understanding of the content of trash-talking messages and behaviors. For example, future work could explore identity based insults about gender, ethnicity or team membership, as well as other boastful and demeaning behaviors. Some forms of trash-talking are likely to be more appropriate than other forms, and appropriateness may moderate the effects of trash-talking. Furthermore, it would be interesting to contrast malicious forms of trash-talking with benign forms of trash-talking that involve an element of humor.

10. Conclusion

Trash-talking influences competitive behavior. Trash-talking is a common form of competitive incivility in the workplace. When individuals are targets of trash-talking, they become more motivated and perform better on effort-based tasks. We find that perceptions of rivalry explain the link between trash-talking and performance, and show that targets of trash-talking develop a stronger preference to see their opponent lose. We show that whereas trash-talking in competitive settings boosts effort-based performance, incivility in cooperative settings harms effort-based performance. We also find that trash-talking can motivate unethical behavior and hinder creative performance. Our work reveals that incivility can have unintended consequences that powerfully motivate competitors. Individuals who hold their competitors in low regard may be best served by keeping their views to themselves.

Disclosure

The data from each study are available as Online Supplementary Materials at <https://osf.io/duphw/>.

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Appendix A. Pilot study survey

Imagine you are about to compete with another person on a performance task.

Here is what you know about the competition:

1. The winner will receive a prize.
2. The performance task involves counting the number of “a”s in a letter string. You must complete each letter string consecutively. There are 100 letter strings. A screenshot of the task is presented below.
3. The maximum amount of time that can be spent doing this task is 10 min. You and your opponent can exit the task at any time.
4. Your performance is evaluated based on the number of letter strings correctly completed.

[Trash-talking condition]

Please answer the following questions based on sending the following message to your opponent before starting the performance task: “Just to let you know, that prize is mine. . . i’m totally going to crush you in this task. I’m going to send you home crying to your mommy. . . sucker”

[Neutral condition]

Please answer the following questions based on sending the following message to your opponent before starting the performance task: “Whoever does the task better will get the prize. Let’s see what happens!”

How motivated would your opponent be to compete on the performance task?

(1 = not at all; 7 = very much)

How much effort would your opponent exert to complete this performance task?

(1 = not at all; 7 = very much)

How persistent would your opponent be when doing this task?

(1 = not at all; 7 = very much)

How accurate would your opponent be when performing the task?

(1 = not at all; 7 = very much)

To what extent would your opponent be able to concentrate when performing the task?

(1 = not at all; 7 = very much)

How mentally focused would your opponent be when performing this task?

(1 = not at all; 7 = very much)

Appendix B. Participant-to-participant chat example

Participant 1: Hello
 Participant 2: Hi!
 Participant 1: How are you?
 Participant 2: I'm good.
 Participant 1: Same here. I wish the weather was nicer, though.
 Participant 2: Same, it's so gross outside. I hope you have a nice day though!
 Participant 1: Yeah, I did! Just can't wait to fling.
 Participant 2: Sameeee!

Appendix C. Messages sent by confederate**Study 1****Trash-talking condition messages:**

Message 1: hey - it looks like we'll be competing against each other in the next task
 Message 2: just so you know, i'm taking that bonus money... you're definitely going to lose
 Message 3: i'm smarter than you...i'm faster than you...i'm going to beat you so bad

Control condition messages:

Message 1: hey - it looks like we'll be competing against each other in the next task
 Message 2: so whoever does the task better gets some bonus money
 Message 3: let's see what happens

Study 2**Trash-talking condition messages:**

Message 1: hey - it looks like we'll be competing against each other in the next task
 Message 2: this is going to be so easy...i'm taking that bonus money...you're a total loser
 Message 3: i'm going to crush you - at the end of this, you're going to be begging me for that dollar

Control condition messages:

Message 1: hey - it looks like we'll be competing against each other in the next task
 Message 2: so whoever does the task better gets some bonus money
 Message 3: let's see what happens

Study 3**Trash-talking condition messages:**

Message 1: it looks like we're going to be competing on the next task
 Message 2: i don't think you have a clue about what's about to happen...that bonus money is mine
 Message 3: hey dummy - you're going to lose, and you're going to lose bad...end of story!!!!!!

Control condition messages:

Message 1: it looks like we're going to be competing on the next task
 Message 2: apparently there is some bonus money
 Message 3: let's do this

Study 4**Trash-talking condition messages:**

Message 1: it looks like we'll be competing against [cooperating with] each other in the next task
 Message 2: why did I get paired with you? honestly...i can already tell that you're a complete loser
 Message 3: what can I say...you're a total clown

Control condition messages:

Message 1: it looks like we'll be competing against [cooperating with] each other in the next task
 Message 2: this should be interesting
 Message 3: let's do this

Study 5**Trash-talking condition messages:**

Message 1: hey there - it looks like we will be competing against each other in the next task
 Message 2: i want that dollar and i'm going to beat you...you're going down
 Message 3: i know a loser when i see one...i'm going to beat you like a rented mule.

Control condition messages:

Message 1: hey there - it looks like we will be competing against each other in the next task
 Message 2: so whoever does the task better gets a dollar
 Message 3: let's see what happens

Study 6**Trash-talking condition messages:**

Message 1: hi - it seems like we're going to be competing against each other
 Message 2: i'm going to crush you...at the end of this, you're going to be begging me for that dollar
 Message 3: this is going to be so easy...i can already tell that you're dumb as a rock

Control condition messages:

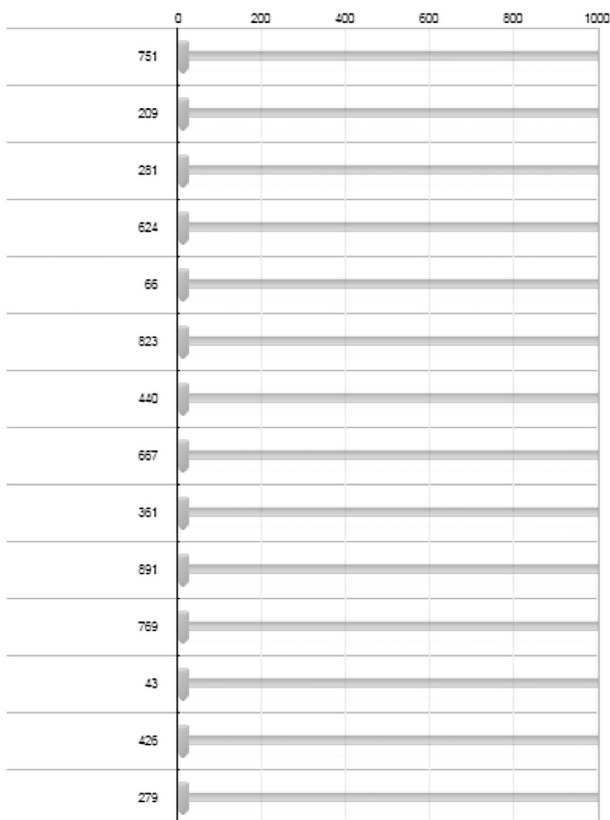
Message 1: hi - it seems like we're going to be competing against each other
 Message 2: so whoever does the task better gets some bonus money
 Message 3: let's do this

Appendix D. Slider task

Performance Task Instructions

- In this task, you will compete against another participant with whom you interacted in a chat session.
- You will have 2 min to complete this task. A timer is displayed. You may exit at any time.
- Slide the marker to the number indicated in the left column. Try to complete as many items as you can. You will receive a point for each slider that you complete correctly.
- Complete the items consecutively in the order that they are presented (don't skip items).

Use the slider for each number. Complete them in consecutive order.



Appendix E. Rivalry measure

Please answer the following questions based on how you felt when you received messages from another participant before you started the performance task. 1 = “Not at all”; 7 = “Very much”

1. “I viewed the other participant as a rival of mine.”
2. “I felt rivalry towards the other participant.”
3. “Competition against this person was important to me because of our interaction.”

Appendix F. Preference for seeing an opponent lose measure

	Your payoff	Your opponent's payoff
Option A	\$0.75	\$0.60
Option B	\$0.60	\$0

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