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## It hurts both ways: How social comparisons harm affective and cognitive trust

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### ABSTRACT

Organizations often expect employees to collaborate with and trust the same coworkers with whom they compete for promotions and raises. This paper explores how social comparisons in self-relevant achievement domains influence affective and cognitive trust. We find that both upward and downward social comparisons harm trust. Upward comparisons harm *affective* trust and downward comparisons harm *cognitive* trust. We find no benefits of upward comparisons on cognitive trust, and we find no benefits of downward comparisons on affective trust.

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### Introduction

"Rhonda, age thirty-four, is one of twenty-five female secretaries at a midsize legal firm. Her boss, impressed by Rhonda's computer skills, suggests she go for further training so she can help with the information technology needs of the firm. He offers to accommodate her time away for classes if she will agree to stay with the firm for a year after she finishes. When Rhonda tells her coworkers about the opportunity, they congratulate her, but in the weeks that follow, the emotional climate of the office grows noticeably cooler. Within a month of starting classes, Rhonda is no longer invited to lunch with the other women, and they frequently 'forget' to pass on important messages that arrive while she is in class." (Dellesega, 2005, p. 8).

Many organizations routinely compare employees with each other. For example, managers frequently rank employees or publicly recognize an employee for special achievement (e.g., an employee of the month award; Garcia & Tor, 2007). In a 2006 survey, Hewitt Associates found that over 60% of organizations used a competitive reward system, and Greenberg, Ashton-James, and Ashkanasy (2007) argue that the use "of comparative social information in the workplace is, in some ways, an institutionalized process" (p. 36). Given the frequency of such comparisons, individuals are likely to compare their accomplishments with those of their colleagues not only when their managers formally engage in comparison processes, but also on their own even without an institutionally driven comparison (Exline & Lobel, 1999; Festinger, 1954).

In the opening example, a manager's recognition of a high-potential employee harms relationships between that employee and her co-workers. Even though this manager may not have intended to make the comparison between Rhonda and her coworkers salient, Rhonda's co-workers made the social comparison and consequently withdrew from Rhonda and began to undermine her performance. Prior research has shown that social comparisons in the workplace have implications for interpersonal liking (Schaubroeck & Lam, 2004) and aggression (Cohen-Charash & Mueller, 2007). In this paper, we examine the implications of social comparisons on trust.

A substantial literature has documented the importance of trust (Hosmer, 1995; Lewicki, Tomlinson, & Gilgespie, 2007). Trust facilitates cooperation (Pillutla, Malhotra, & Murnighan, 2003), reduces transaction costs (Granovetter, 1985), and enables managers and organizations to operate effectively (Dirks & Ferrin, 2001; Jones & George, 1998; Kim, Dirks, Cooper, & Ferrin, 2006). Although trust is critical in many workplace relationships, common organizational practices trigger social comparisons that may unintentionally damage trust.

In this paper, we describe how social comparisons influence subsequent trust. Although prior work has found that individuals may harm competitors during a competitive interaction (Cohen-Charash & Mueller, 2007; Garcia, Tor, & Gonzalez, 2006; Schweitzer, DeChurch, & Gibson, 2005), no prior work has examined how competitive interactions influence trust in subsequent cooperative contexts. We show that comparisons with someone whose performance is superior to one's own (*upward comparisons*) and comparisons with someone whose performance is inferior to one's own (*downward comparisons*) harm trust. The type of trust

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that is harmed by upward and downward comparisons depends on the direction of the comparison. Downward comparisons harm cognitive trust, and upward comparisons harm affective trust.

### Interpersonal trust

In this paper, we refer to the person who trusts another person as the *trustee*, and the person who may or may not be trusted as the *trustee*. In our investigation, the trustee receives social comparison information and the trustee is the target of the comparison.

Integrating prior trust research, we define trust as a willingness to accept vulnerability based upon beliefs about the trustee's ability and character and the emotional bond between the trustor and the trustee (Lewis & Weigert, 1985; Mayer, Davis, & Schoorman, 1995; Rousseau, Sitkin, Burt, & Camerer, 1998; Williams, 2001). One model of trust introduced by McAllister (1995) identifies two distinct types of trust: affect-based trust and cognition-based trust. This distinction is similar to distinctions made by Johnson-George and Swap (1982) and Lewis and Weigert (1985) in earlier work. These distinctions disentangle the emotional/affective dimension of trust from the intellectual/cognitive dimension. In this paper, we use the terms affective and cognitive trust to label the two forms of trust.

Affective trust is a willingness to be vulnerable to the trustee that is based primarily on the emotional bond between the trustor and the trustee (Chua, Ingram, & Morris, 2008; McAllister, 1995; Rempel, Holmes, & Zanna, 1985). This bond is based on beliefs about the trustee's benevolence (Mayer et al., 1995) and an affective attachment between the trustor and trustee (Williams, 2007). Affective trust implies a feeling of emotional security and a belief that one's concern for another is reciprocated (Dirks & Ferrin, 2002; McAllister, 1995; Wilson, Straus, & McEvily, 2006). Trustors with high affective trust are willing to make themselves emotionally vulnerable to the trustee because they expect the trustee to respond in a supportive and considerate way.

Cognitive trust is a willingness to be vulnerable to the trustee that is based primarily on beliefs about the trustee's ability and integrity (Chua et al., 2008; Dirks & Ferrin, 2002; Mayer et al., 1995; McAllister, 1995; Wilson et al., 2006). Cognitive trust forms through direct interactions with the trustee as well as from learning about the trustee's reputation (Kollock, 1994; McKnight, Cummings, & Chervany, 1998). Trustors with high cognitive trust are willing to rely on the trustee because they have sufficient evidence that the trustee has the ability and character to represent their interests.

In a meta-analysis of trust in leaders, Dirks and Ferrin (2002) described three types of trust: affective, cognitive and overall trust. They conceptualized "overall trust" as a combination of affective and cognitive trust. In their review of prior work, Dirks and Ferrin (2002) focused on cognitive trust and overall trust, explaining that prior research has largely neglected the study of affective trust. As Dirks and Ferrin (2002) explain, "We focus on these two types [overall trust and cognitive trust] because we found that nearly all of the studies included in the meta-analysis used one of these two; there is presently insufficient data to directly examine affective trust" (p. 616).

Dirks and Ferrin (2002) found that cognitive trust and overall trust had different antecedents and outcomes. The authors speculate that the moderating effects of trust would be even stronger if affective trust was compared to cognitive trust and concluded that "more theory is needed to understand the antecedents and consequences of alternative dimensions of trust... future studies might include multiple dimensions (affective and cognitive) within a single study and attempt to distinguish between the processes involved" (p. 623). In this paper, we address this open question. We describe how social comparisons differentially influence affective and cognitive trust.

### Social comparisons and trust

Our work contributes to the social comparison literature by simultaneously exploring the affective and cognitive consequences of social comparisons. Buunk and Gibbons (2007) declare this area of study "a central issue that nevertheless has received relatively little attention" (p. 16). Prior work has suggested that people seek upward comparisons for cognitive reasons (e.g., information useful for self-evaluation or self-improvement) and seek downward comparisons for affective reasons (e.g., in order to feel better about oneself) (Gruder, 1971; Wheeler, 1966; Wills, 1981). Although people may be motivated to seek social comparisons for these reasons, we demonstrate that the affective and cognitive consequences of upward and downward social comparisons are quite different. The consequences of upward comparisons on trust are primarily affective. The consequences of downward comparisons on trust are primarily cognitive.

We build on Tesser's (1988) self-evaluation maintenance model (SEM) to develop two hypotheses linking social comparisons with trust. According to the SEM model, individuals have a strong motivation to maintain a positive self-image (Achee, Tesser, & Pilkington, 1994; Tesser, Pilkington, & McIntosh, 1989).

An individual's ability to maintain their self-image depends on the type of comparisons they make with others. In the SEM model, Tesser (1988) focuses on three factors that influence the status of one's self-evaluation after a comparison: (1) the comparison direction (upward vs. downward), (2) the relevance of the comparison domain (highly self-relevant vs. not relevant to one's identity), and (3) the psychological closeness of the compared person (similar/friend vs. different/stranger). These three factors determine the amount of threat an individual feels to her self-image following a social comparison. When the domain is self-relevant (e.g., an engineer comparing her math ability with a peer), upward comparisons threaten the self-image, and the threat is stronger when the compared person is psychologically close than when the person is distant. In contrast, downward comparisons enhance one's self-image when the domain is self-relevant, especially when the compared person is close. When the domain is low in self-relevance (e.g., an engineer's ability to write poetry), upward comparisons with someone who is close can enhance one's self-image by affiliation (e.g., Cialdini et al., 1976). Downward comparisons that are low in self-relevance have little effect on one's self-image.

In our studies, we focus on social comparisons that are high in self-relevance. Our participants compare job prospects, scores on a graduate school entrance exam, or feedback from intelligence tests. Self-relevant comparisons are common in the workplace and we expect these comparisons to influence both affective and cognitive trust in important and predictable ways. We develop our hypotheses with respect to self-relevant comparisons.

Social comparisons provide information, trigger affective reactions, and motivate individuals to maintain their self-evaluation (e.g., Achee et al., 1994; Tesser et al., 1989; Tesser, 1995). Through these mechanisms, we expect social comparisons to differently influence affective and cognitive trust. Below, we consider how upward and downward comparisons influence trust relative to a similar comparison (i.e., a situation where the trustor and trustee have very similar performance outcomes).

#### *Social comparisons and affective trust*

##### *Upward comparisons*

Upward comparisons are generally aversive. Upward comparisons threaten an individual's self-image and evoke feelings of threat, envy and anger (Cohen-Charash & Mueller, 2007; Moran & Schweitzer, 2008; Tesser, Millar, & Moore, 1988). Threats trigger

coping strategies, such as denigrating the target of the comparison and creating distance between oneself and the outperformer (Tesser, 1988). For example, Salovey and Rodin (1984) found that participants regarded better performers, about whom they had little information other than performance, as less kind and caring than similar performers. Similarly, Schaubroeck and Lam (2004) found that co-workers rated recently promoted colleagues as less likeable than other colleagues.

Affective trust is predicated upon feelings of closeness, beliefs that the trustee will act benevolently towards the truster (Mayer et al., 1995), and beliefs that the truster's concern will be reciprocated (McAllister, 1995). We expect an upward comparison that threatens the truster's self-image to curtail positive feelings towards the trustee, motivate coping strategies that reduce beliefs in the trustee's benevolence and consequently lower affective trust.

Directing negative emotions towards the trustee will weaken the positive feelings of closeness and reciprocated care that underlie affective trust. In a laboratory study, Pleban and Tesser (1981) found that participants chose to sit farther away from a confederate who outperformed them than from a confederate who performed similarly to them. Tesser, Crepaz, Collins, Cornell, and Beach (2000) found that participants rated their friends as less psychologically close when their friend performed better than the participant had. Taken together, we expect underperforming trustees to develop negative feelings that harm affective trust in the outperforming trustee.

#### *Downward comparisons*

We next consider the relationship between downward comparisons and affective trust. Although downward comparisons often trigger positive affect (Tesser, 1995), downward comparisons are likely to trigger self-focused emotions, such as pride (Smith, 2000). Though positive in valence, self-focused emotions are not considered informative about the trustee's trustworthiness and are unlikely to influence interpersonal trust (Dunn & Schweitzer, 2005). As a result, we do not expect downward comparisons to significantly influence affective trust.

**Hypothesis 1.** Following an upward comparison, affective trust will be lower than it will be following a similar comparison or a downward comparison.

#### *Social comparisons and cognitive trust*

In addition to generating affect, social comparisons provide information (Festinger, 1954; Smith, 2008). When assessing another person's ability, people often use their own level of performance as a point of reference (Dunning & Hayes, 1996; Mussweiler, 2003). As a result, social comparison information is very likely to influence judgments of ability. Cognitive trust is significantly influenced by perceptions of ability, and both theoretical models (e.g., Mayer et al., 1995; McAllister, 1995; Rousseau et al., 1998) and empirical evidence (see Colquitt, Scott, & LePine, 2007) link perceptions of ability with trust.

#### *Upward comparisons*

Although beliefs about the trustee's ability generally influence cognitive trust, the relationships among social comparisons, ability beliefs, and cognitive trust are likely to be influenced by the motivation to maintain a positive self-evaluation (Tesser, 1986). Upward comparisons threaten an individual's self-evaluation and can prompt individuals to engage in self-evaluation maintenance strategies that discount the validity of the upward comparison (Tesser, 1988; Vecchio, 1995). For example, after receiving upward

comparison information (e.g., learning that a classmate scored higher on a test) the underperformer may denigrate the validity of the measure and consider the test a poor indicator of content knowledge. This denigration process enables individuals to maintain a positive self-image. At the same time, this process weakens the relationship between performance and an individual's beliefs about a peer's ability when the performance information reflects an upward social comparison.

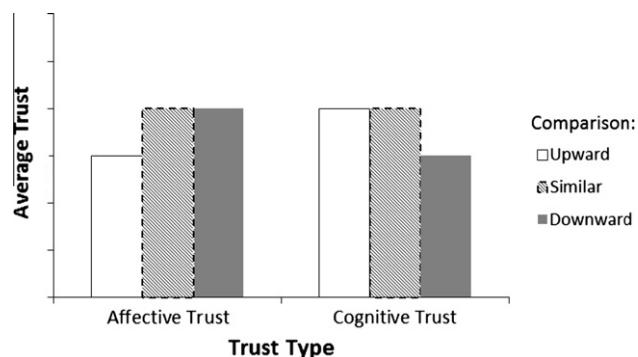
Downward social comparisons do not threaten positive self-evaluations and do not trigger coping mechanisms. Individuals confronted with downward comparison information can maintain a positive self-evaluation by considering the performance domain indicative of actual ability (e.g., by considering an exam a good measure of ability). In fact, individuals may even aggrandize their outperformance by exaggerating the importance of the performance domain (e.g., believing one's high SAT scores are a particularly good measure of IQ) and exaggerating the difference between their level of ability and the level of ability of those who underperform them (Dunning & Cohen, 1992).

The asymmetry with which people interpret upward and downward social comparison information suggests that upward and downward social comparisons will influence cognitive trust differently. Downward social comparison information is likely to be perceived as especially valid and indicative of ability. As a result, it will decrease cognitive trust in the trustee, relative to a similar comparison. Upward social comparison information is likely to be discounted by self-protective interpretations of the comparison and is not likely to increase cognitive trust in a trustee, compared to cognitive trust in a trustee who performs similarly.

**Hypothesis 2.** Following a downward comparison, cognitive trust will be lower than it will be following an upward or similar comparison.

In Fig. 1, we depict our hypotheses linking social comparisons and trust. Although there are many factors that can foster trust between colleagues, such as increased dependence on each other (Weber, Malhotra, & Murnighan, 2004), frequent communication (Becerra & Gupta, 2003), and reciprocal positive behaviors (Blau, 1964; Rempel et al., 1985), we postulate that social comparisons can have a particularly damaging effect on trust. Specifically, we expect upward social comparisons to harm affective trust, i.e., people will develop lower affective trust in peers who perform better than they do. We expect downward social comparisons to harm cognitive trust, i.e., people will develop lower cognitive trust in peers who perform worse than they do. We do not expect downward social comparisons to boost affective trust, and we do not expect upward social comparisons to boost cognitive trust.

We conducted three studies to examine the relationship between social comparisons and trust. In the first study, we measure



**Fig. 1.** Predicted relationships for social comparisons and trust.

affective and cognitive trust in a friend following either upward or downward comparisons about job prospects. In our second study, we measure law school applicants' affective and cognitive trust in classmates who had higher or lower LSAT scores. In our third study, we conducted a laboratory experiment to measure affective and cognitive trust in a stranger who either outperformed or underperformed our participants.

## Study 1

In this study, we examine the influence of social comparisons on trust within existing relationships. We recruited college seniors to think of a friend who was graduating from college that year. We induced social comparisons by asking participants to think of their own employment opportunities as well as the employment opportunities of their friend. We then measured affective and cognitive trust in the friend. Finally, participants rated the attractiveness of their own job opportunities and the attractiveness of their friend's job opportunities.

### Method

#### Participants

We recruited 172 college students from two universities to complete a survey in exchange for a candy bar. A total of 160 participants completed all questions in the study. The average age was 21 years old ( $SD = 1.13$ ) and 44% of participants were female.

#### Social comparison target

First, we asked participants to identify a friend and to write down their friend's initials. This procedure ensured that participants identified the comparison target before they considered their own relative employment opportunities. On the next page of the survey, we asked participants to describe their own employment opportunities and the employment opportunities of their friend.

#### Measures

**Trust.** After participants described their own and their friend's job prospects, they answered several questions about their trust in, and beliefs about, their friend. We measured participants' intentions to trust their friend using a 10-item scale including items we adapted from McAllister (1995) and Johnson-George and Swap (1982). Five questions captured affect-based trust (e.g., "I would admit my worst mistakes to this person") and five questions captured cognitive trust (e.g., "I would assume this person's work is done properly if I need to use it"). We adapted some of the items so that they were relevant to collaborative working relationships (e.g., class project groups or workplace colleagues) and consistently reflected intentions to engage in trusting behaviors. We asked participants to imagine that they and their counterpart were working on the same project team when responding. We measured each item on a 7-point Likert scale. Both scales were reliable (*Cronbach's alpha* = 0.86 for affective trust and *alpha* = 0.85 for cognitive trust). We list the items we used in the Appendix.

**Table 1**

Intercorrelations of dependent variables and controls (Study 1).

		Mean	SD	2	3	4	5	6	7
1	Affective trust	4.96	1.26	.40	.37	.14	.30	.45	.00
2	Cognitive trust	4.10	0.69		.00	.34	.18	.24	.09
3	Participant job attractiveness	4.47	1.53			.09	.34	.32	-.15
4	Trustee job attractiveness	5.24	1.53				.21	.36	-.03
5	Time known trustee (years)	2.97	1.97					.47	.05
6	Age	20.93	1.13						-.06
7	Same sex as trustee (1 = Y, 0 = N)	0.77							

Note:  $N = 160$ . Correlations with absolute values of 0.20 or greater are significant at  $p < .05$ .

**Job attractiveness.** At the end of the survey, we asked participants four questions to ascertain the direction of the social comparison. Two of the questions focused on the attractiveness of their friend's job prospects and two questions focused on the attractiveness of their own job prospects; specifically, we asked participants to rate the extent to which they agreed with the statements, "Most [College Name] students would find this person's job opportunity very attractive" and "People are impressed by this person's job opportunity" ( $\alpha = 0.94$ ). We replaced "this person's" with "my" to measure the attractiveness of the participant's job ( $\alpha = 0.92$ ). Each question used a 7-point scale (1 = strongly disagree, 7 = strongly agree), and we averaged responses to the two questions to measure job attractiveness for the participant and the friend.

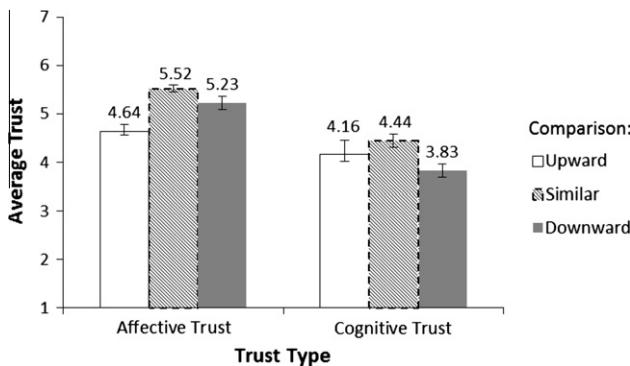
To determine comparison direction, we compared the attractiveness of the friend's job prospects to the attractiveness of the participant's job prospects. When the friend's prospects were rated as more attractive than the participant's prospects ( $N = 85$ ), we identified the comparison as an upward comparison. When the friend's prospects were rated as less attractive than the participant's prospects ( $N = 50$ ), we identified the comparison as a downward comparison. When the friend's prospects were rated as equally attractive as the participant's prospects (e.g., John's average rating of his own job prospects was the same as John's average rating of his friend's job prospects,  $N = 25$ ), we identified the comparison as a similar comparison.

#### Results and discussion

We report means, standard deviations and intercorrelations of our measures in Table 1. The majority of participants (77%) identified a friend who was the same sex as the participant. Whether the friend was the same sex or not had no influence on our dependent variables. We used analysis of variance to examine whether comparison direction (upward, similar or downward) had an effect on affective and cognitive trust. For affective trust, comparison direction had a significant effect ( $F(2, 158) = 6.14$ ,  $p < .01$ ). In planned paired comparisons, affective trust was significantly lower following upward comparisons ( $M = 4.64$ ,  $SD = 1.26$ ) than following downward comparisons ( $M = 5.23$ ,  $SD = 0.98$ ,  $t(133) = 2.83$ ,  $p < .05$ ) or similar comparisons ( $M = 5.52$ ,  $SD = 1.48$ ,  $t(107) = 2.70$ ,  $p < .05$ ). These results support Hypothesis 1. The difference between downward comparisons and similar comparisons was not significant ( $t(72) = 0.80$ , n.s.).

For cognitive trust, comparison direction also had a significant effect ( $F(2, 158) = 7.08$ ,  $p < .01$ ). In planned paired comparisons, cognitive trust was significantly lower following downward comparisons ( $M = 3.83$ ,  $SD = 0.61$ ) than following upward comparisons ( $M = 4.16$ ,  $SD = 0.68$ ,  $t(133) = 2.82$ ,  $p < .05$ ) or similar comparisons ( $M = 4.44$ ,  $SD = 1.48$ ,  $t(72) = 3.66$ ,  $p < .05$ ). These results support Hypothesis 2. The difference between upward comparisons and similar comparisons was not significant ( $t(107) = 1.56$ , n.s.). In Fig. 2, we plot means for affective and cognitive trust.

Upward comparisons harm affective trust, and downward comparisons harm cognitive trust. These comparisons influenced trust



**Fig. 2.** Effect of social comparison direction on affective and cognitive trust (Study 1).

in existing relationships among participants who had known the trustee for 3 years, on average.

We asked participants to identify a fellow graduate *before* they knew that we would ask them to compare their job prospects with this person. Still, individual differences may have determined whether the fellow graduate they chose would be an upward or downward comparison (e.g., a participant with low self-esteem may have been more likely to choose a fellow graduate who was higher performing in general, and had more attractive job prospects than the participant). In addition, the comparison metric is a subjective rating of job attractiveness. These subjective ratings may have been influenced by variables not captured in the study.

We address both the self-selection and the subjective rating limitations in our next study. We used an objective comparison measure (a test score), and we had each participant indicate their trust in two trustees – one who had scored higher than they (upward comparison) and one who had scored lower than they (downward comparison).

## Study 2

In this study, we used a within-subject design to compare each truster's affective and cognitive trust in trustees who had performed better or worse than the truster on a highly self-relevant exam. Specifically, we surveyed participants who were planning to apply to law school and who had taken the Law School Admissions Test that year. We asked them to identify, by initials, classmates whose LSAT scores they knew, and to report the scores of these classmates. We then measured participants' affective and cognitive trust in the person with the highest LSAT score and the person with the lowest LSAT score among those whose scores they knew.

We chose the LSAT because it is a key factor in admissions to most law schools, and is required for admission into any ABA-approved law school. A school's median LSAT score accounts for 12.5% of the law school rankings formula in *US News and World Report* and is highly relevant for admissions (*Sloan, National Law Journal*, May 24, 2010). For students applying to law school, we expected (and confirmed in our study) that LSAT scores are highly self-relevant.

## Participants

Participants were 262 upperclassmen who had taken the LSAT in 2009. They were enrolled at 16 universities across the country. We recruited students through career service departments and pre-law student groups. Students who opted to include an email address were entered into a drawing for \$300. Of the 262 participants who completed the survey, 199 had indicated that they knew

the scores of at least one classmate with a higher LSAT score and one classmate with a lower LSAT score. We used this subset of participants in our analyses.

## Procedure

We used an online survey to collect responses. As a cover story, we told participants that we were studying information sharing among students. We asked participants to list the first initial plus a brief identifying phrase (e.g., "J from Soc101") of up to ten peers whose LSAT scores they knew. On the next two screens, we asked participants to list each individual's score next to their identifying phrase, and to indicate whether or not they had shared their own LSAT score with each individual.

We then asked participants questions about two of the people they had listed, including their trust in these individuals. The survey did not indicate how targets were selected, but we programmed the survey to select as targets the people with the highest and lowest LSAT scores in the set. We counterbalanced the order of presentation across participants (trustee with highest score presented first vs. trustee with lowest score presented first).

We measured trust using the same scales we used in Study 1. To check that students perceived a relationship between LSAT score and law school prospects, we asked participants how likely they thought it was for each target to be admitted to a Top 3, Top 10, and Top 30 law school on a 7-point scale from "very unlikely" to "very likely." We also asked how long they had known each of the targets.

Participants then reported their own LSAT scores. They also rated how likely they thought they were to get into a Top 3, Top 10, and Top 30 law school. These ratings for Top 3, Top 10 and Top 30 were averaged to form a scale ( $\alpha = 0.84$ , 0.85, and 0.88 for ratings of participant, low-scoring target and high-scoring target, respectively). Finally, participants provided basic demographic information, and briefly stated what they thought the survey was about.

## Manipulation check

We used LSAT scores to generate the social comparison. To confirm that our participants believed a higher LSAT score was beneficial to law school applications, we compared ratings of perceived likelihood of getting into top schools for the participant, the highest scoring person they knew, and the lowest-scoring person they knew. Average ratings were significantly different ( $F(1, 198) = 208$ ,  $p < .01$ ), with the highest-scoring trustee rated as most likely to be admitted to top schools ( $M = 5.23$ ,  $SD = 1.56$ ), followed by the participant ( $M = 3.83$ ,  $SD = 1.75$ ), followed by the lowest-scoring trustee ( $M = 3.28$ ,  $SD = 1.77$ ). We also examined the correlation between LSAT scores and perceived chances of being admitted to a good school. The correlation between LSAT score and perceived chances of admission to a Top 3, Top 10 or Top 30 school was high ( $r = .60$ ,  $p < .01$ ).

In this study, we focus on upward and downward comparisons. Participants in our sample knew only a few of their peers' scores and were unlikely to know a peer who had the same LSAT score that they had. Thus, we only compared trust in others who scored higher or lower than the participant in this study.

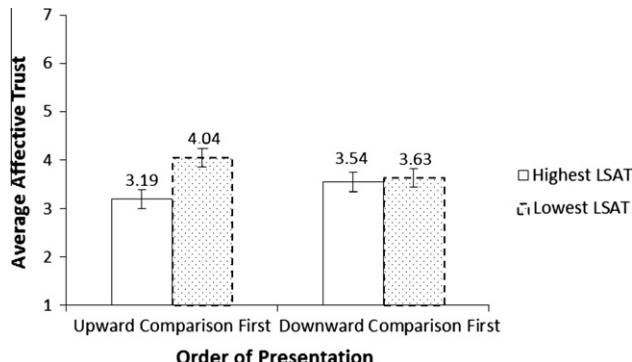
## Results

We report means, standard deviations and intercorrelations of our measures in Table 2. To test our hypotheses, we conducted two repeated-measures ANOVAs: One for affective trust and one for cognitive trust. We included the order of presentation (i.e.,

**Table 2**

Intercorrelations of dependent variables, LSAT scores and controls (Study 2).

		Mean	SD	2	3	4	5	6	7	8	9
1	Affect trust in high scorer	3.38	2.0	.51	.03	.03	-.04	-.06	-.11	.21	-.06
2	Cog trust in high scorer	5.12	1.3		.13	.02	.08	.11	-.04	.09	.04
3	Affect trust in low scorer	3.80	1.9			.62	-.05	.12	.10	.10	-.10
4	Cog trust in low scorer	4.86	1.4				-.01	.16	.16	.06	.09
5	Participant LSAT	162	8.8					.50	.35	-.06	-.09
6	Highest LSAT	167	7.5						.31	-.07	-.03
7	Lowest LSAT	154	14							-.07	-.03
8	Age	21.6	1.5								-.05
9	Gender (1 = M, 2 = F)	1.61									

Note: N = 199. Correlations with absolute values of .15 or greater are significant at  $p < .05$ .**Fig. 3.** Difference in affective trust by trustee and order of presentation (Study 2).

whether the participant rated the high-scoring or low-scoring trustee first) as a between-subjects variable.

For affective trust, the within-subject effect was significant ( $F(1, 195) = 4.85, p < .05$ ). Affective trust was significantly lower in the trustee with a higher LSAT score ( $M = 3.39, SD = 1.95$ ) than in the trustee with a lower LSAT score ( $M = 3.83, SD = 1.91$ ;  $d = (M(\text{affective trust in higher LSAT scorer}) - M(\text{affective trust in lower LSAT scorer})) = -0.44$ ). The order of presentation, however, moderated the within-subject effect ( $F(1, 195) = 4.43, p < .05$ ). When the high-scoring trustee was presented first, the difference in affective trust in the high-scoring trustee vs. low-scoring trustee was large ( $d = -0.82$ ), but when the low-scoring trustee was presented first, the difference was negligible ( $d = -0.02$ ). There was no main effect of presentation order on affective trust ( $F(1, 195) = 0.00, n.s.$ ). We depict these results in Fig. 3.

For cognitive trust, the within-subject effect was significant ( $F(1, 195) = 4.19, p < .05$ ). Cognitive trust was significantly higher in the trustee with a higher LSAT score ( $M = 5.13, SD = 1.30$ ) than in the trustee with a lower LSAT score ( $M = 4.87, SD = 1.38$ ;  $d = 0.26$ ). The order of presentation did not significantly moderate the within-subject effect ( $F(1, 195) = 2.50, p = .12$ ). There was no main effect of presentation order on cognitive trust ( $F(1, 195) = 0.32, n.s.$ ).

## Discussion

Results from this study further support our hypotheses that affective trust is harmed by upward comparisons and cognitive trust is harmed by downward comparisons. We found this to be true among individuals who engaged in both an upward and a downward comparison in the same self-relevant domain.

Although we did not anticipate that presentation order would have a significant effect, our results suggest that a threat to self-evaluation reduces affective trust. Upward comparisons only harmed affective trust when the upward comparison was the first

comparison that was made. In this condition, participants may have been more apt to feel that the upward comparison was threatening to their self-image because at the time of this evaluation, the upward comparison was the only comparison that had been made salient. In contrast, when the downward comparison was made first, participants had the opportunity to affirm or enhance their self-image with a salient comparison in which they were the better performer prior to evaluating the higher-scoring trustee.

The act of engaging in a favorable comparison may have inoculated participants to the threat of a subsequent upward comparison. Participants did not need to disparage or withdraw from the higher-scoring individual because they knew they had performed better than another peer; as a result, affective trust was maintained.

## Study 3

In Studies 1 and 2, we examined the effect of social comparisons on trust in familiar counterparts. Familiarity could mitigate or possibly exacerbate negative interpersonal reactions triggered by social comparisons. Prior trust research suggests that once a strong level of trust has developed between parties, the relationship can withstand aversive events (Lewicki & Wiethoff, 2000). Self-evaluation maintenance (SEM) theory, however, suggests that people react more negatively to upward comparisons of close others than they do towards upward comparisons of distant others (Tesser, 1988). In our next study, we extend our investigation to test whether, in new relationships, upward comparisons harm affective trust, and downward comparisons harm cognitive trust.

Our first two studies also rely on self-identification of trustees and self-reports of their performance. In the next study, we use an experiment to control the social comparison. We conduct a performance test in the laboratory and provide feedback about the trustor's and trustee's performance. The laboratory setting enables us to provide fixed levels of upward, downward, and similar comparison information. In addition, we measure emotions and ability perceptions to examine whether these variables mediate the effects of upward and downward comparisons on affective and cognitive trust.

In this study, we manipulate social comparison information and examine how social comparisons influence affective and cognitive trust in strangers. We use a controlled experiment to investigate potential mediators of the effect of social comparisons on trust. Specifically, we measure emotions, ability beliefs, and perceived validity of the comparison and we test whether or not these constructs mediate the relationship between social comparisons and trust.

The self-evaluation maintenance model identifies both affective and cognitive reactions to self-relevant social comparisons (Tesser, 1988). Upward social comparisons can generate negative

interpersonal emotions, such as threat, envy and anger (Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Moran & Schweitzer, 2008; Parrott & Smith, 1993). Given that closeness can magnify the emotional impact of social comparisons (Tesser, 1988), trusters may try to mitigate these negative emotions by distancing themselves from the better-performing trustee and lowering affective trust. Thus, we expect negative emotions to mediate the negative effect of upward comparisons on affective trust.

Although we expect emotion to mediate the relationship between upward comparisons and affective trust, we expect beliefs about ability to mediate the relationship between downward comparisons and cognitive trust. Downward comparisons are self-enhancing, and trusters are likely to perceive downward comparison domains as valid indicators of ability that guide trust assessments in cognitive domains.

## Method

### Participants

We recruited 341 undergraduate students from a large Northeastern university to complete the study in exchange for \$10. Participants completed the study in a laboratory via computer in isolated cubicles. During the session, no participant's screen was visible to any other participant. We ran 34 sessions with an average session size of 10 participants.

### Experiment overview

We informed participants that they would be paired (via computer) with another participant, and that they would complete three independent tasks and one joint task. The independent tasks were used for social comparisons. We told participants that the partner who earned a higher score in at least two of the three tasks would receive an additional \$10 bonus. The joint task was cooperative and we told participants at the start that they would later have an opportunity to cooperate with their counterpart. In each session, all participants started the experiment at the same time.

First, we collected background information about participants, including their age, gender, GPA, major, and SAT score. We informed participants that we would use the information they had just provided to match them with a participant in the lab who was as similar as possible to them. Next, participants completed three timed tasks. The first was an anagram task, the second involved addition problems, and the third contained logic problems, similar to those found on standard IQ tests.

After completing these tasks, participants received feedback regarding their actual performance as well as manipulated feedback regarding the performance of their confederate counterpart. Participants were then asked to imagine working with their counterpart on a project, and to complete affective and cognitive trust measures, record their beliefs about their counterpart's ability, and to report their emotional state. Finally, participants worked on a task in which they had the ability to communicate electronically with their (confederate) counterpart.

### Manipulation

We manipulated the feedback we provided to each participant regarding how well their counterpart had performed on the three timed tasks. We did this to create three levels of comparison: upward, downward, and similar. Participants assigned to the upward comparison condition learned that their counterparts had earned higher scores on all three of the tasks. Participants assigned to the downward comparison condition learned that they had performed better than their counterpart on all three of the tasks. Participants assigned to the similar comparison condition learned that they had outperformed their counterpart on the first task, underperformed their counterpart on the second task, and tied their

counterpart on the third task. In the similar condition, both the participant and counterpart were given the bonus.

### Dependent measures

**Trust.** We measured participants' intentions to trust their counterpart using a 12-item scale including adapted items from McAllister (1995) and Johnson-George and Swap (1982). We used the same scale items we used in Studies 1 and 2, as well as three additional items (we note these items in the Appendix).

### Mediating variables

**Ability beliefs, comparison validity and emotion.** We asked participants to assess their counterpart's ability across several domains: verbal ability, quantitative ability, analytic ability, work ethic, focus on tasks, and desire to achieve ( $\alpha = 0.92$ ). We measured each item on a 7-point Likert scale. Next, we asked participants to rate how well they thought the three tests measured the abilities they were purported to measure. We used six questions, two for each test of the three tests (verbal, quantitative, and analytical), and took the average rating ( $\alpha = 0.80$ ). We list these items in the Appendix.

Next, we measured several negative emotions that have been associated with social comparisons. We measured envy using four items adapted from Schaubroeck and Lam (2004) and Smith, Parrott, Diener, Hoyle, and Kim (1999). We also measured anger, contempt and threat. We list these items in the Appendix. We measured emotion items on a 7-point Likert scale with the initial question, "To what extent do you feel the following emotions towards your counterpart?" We averaged ratings across all scale items ( $\alpha = 0.95$ ).

**Suspecting fictitious counterpart.** Finally, we asked participants to describe the purpose of the study in their own words. We examined these responses for indications that participants suspected that their counterpart was not real.

## Results and discussion

A total of 341 participants completed the study. One participant did not follow instructions, and in response to the debriefing questions five participants (1.5%) mentioned the possibility that they were paired with a fictitious counterpart. We report analysis for the remaining 335 participants, 183 of whom were female.

We conducted confirmatory factor analysis on the measures of affective trust, cognitive trust, ability, comparison validity and emotion to ensure that our participants viewed the two types of trust as distinct, and that the mediating variables were also distinct from the dependent measures (e.g., ability, comparison validity and cognitive trust were different factors, and emotion and affective trust were different factors). We report results from this analysis in Table 3. We found that the model representing the five factors as distinct ( $\chi^2(517) = 2051$ ,  $p < .01$ ;  $f = 0.91$ ,  $RMSEA = 0.09$ ) had an acceptable level of fit (Steiger, 1990) and fit the data better than the alternative 4-factor models. We report overall means, standard deviations, and intercorrelations in Table 4, and we report means and standard deviations by experimental condition in Table 5.

### Affective and cognitive trust

To examine the effect of upward and downward comparisons on affective trust, we used planned comparison tests. For affective trust, we found that affective trust was significantly lower in the upward comparison condition, compared to both the downward comparison condition (3.51 vs. 4.00,  $d = -0.49$ ;  $t(219) = 3.65$ ,  $p < .001$ ; 95% confidence interval for  $d$  [-0.77, -0.23]) and the similar comparison condition (3.51 vs. 4.14,  $d = -0.63$ ;  $t(223) = 4.75$ ,  $p < .001$ ; 95% CI

**Table 3**

Confirmatory factor analysis of affective trust, cognitive trust, negative emotion and ability beliefs (Study 3).

	$\chi^2$	df	CFI	RMSEA
5-Factor model: affective trust, cognitive trust, emotion, ability and validity	2051	517	.91	.09
4-Factor model: trust, emotion, ability, and validity	2721	521	.89	.11
4-Factor model: cognitive trust (with ability items), affective trust, emotion, validity	3084	521	.88	.12
4-Factor model: affective trust (with emotion items), cognitive trust, ability, validity	2940	521	.88	.12
4-Factor model: cognitive trust, ability (with validity items), affective trust, emotion items	2865	521	.88	.12

Note: CFI = comparative fit index; RMSEA = root-mean-square-error of approximation.

**Table 4**

Intercorrelations of dependent variables, mediators and controls (Study 3).

	2	3	4	5	6	7	8	9
1 Affective trust	.42	.05	-.23	.13	.01	-.04	.07	-.04
2 Cognitive trust		.51	-.02	.20	-.11	.00	.01	.00
3 Ability			.24	.05	-.08	.06	.10	.08
4 Negative emotion				-.04	.00	.00	.01	.01
5 Validity					.05	.06	-.02	.03
6 Age						-.06	.11	-.07
7 Gender (1 = M, 2 = F)						.04	.06	
8 GPA								.12
9 SAT								

Note: Correlations with absolute values of .10 or greater are significant at  $p < .05$ .**Table 5**

Emotions and beliefs by social comparison condition (Study 3).

	Upward comparison M (SD)	Similar comparison M (SD)	Downward comparison M (SD)
<i>Trust</i>			
Affective trust	3.51 (1.13) <sub>a</sub>	4.14 (0.87) <sub>b</sub>	4.00 (0.87) <sub>b</sub>
Cognitive trust	4.32 (1.16) <sub>a</sub>	4.64 (0.83) <sub>a</sub>	3.67 (0.96) <sub>b</sub>
<i>Mediators</i>			
Negative emotion	3.25 (1.56) <sub>a</sub>	1.81 (0.83) <sub>b</sub>	1.86 (0.82) <sub>b</sub>
Ability beliefs	5.26 (0.87) <sub>a</sub>	4.94 (0.72) <sub>b</sub>	3.64 (0.80) <sub>c</sub>
Comparison Validity	4.21 (1.06) <sub>a</sub>	4.59 (1.06) <sub>b</sub>	4.62 (1.08) <sub>b</sub>

Note: The subscripts denote comparisons across rows. Within each row, significantly different means are noted by different subscripts ( $p < .05$ ), corrected for multiple comparisons.

[−0.91, −0.37]). Affective trust was not significantly different for similar comparison and downward comparison conditions (4.14 vs. 4.00,  $d = 0.14$ ;  $t(222) = 1.22$ , n.s.; 95% CI [−0.09, 0.37]).

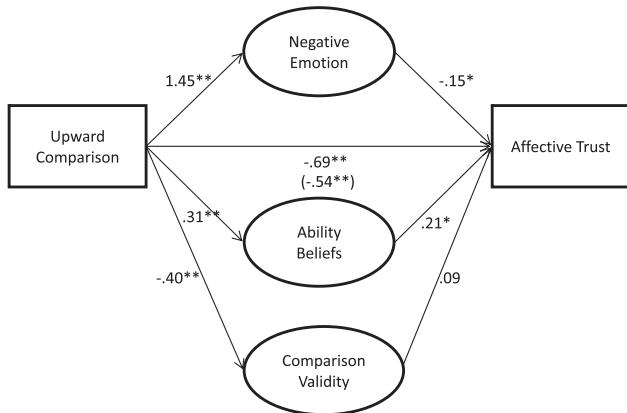
For cognitive trust, we found that cognitive trust was lower following the downward comparison, compared to the upward comparison (3.67 vs. 4.32,  $d = -0.65$ ;  $t(219) = 4.55$ ,  $p < .001$ ; 95% CI [−0.93, −0.37]) and similar comparison (3.67 vs. 4.64,  $d = -0.97$ ;  $t(222) = 8.10$ ,  $p < .001$ ; 95% CI [−1.20, −0.73]). Surprisingly, cognitive trust following the similar comparison was slightly higher than cognitive trust following the upward comparison (4.64 vs. 4.32,  $d = 0.32$ ;  $t(223) = 1.72$ ,  $p < .10$ ; 95% CI [0.06, 0.60]). Following upward social comparisons, participants had moderate levels of cognitive trust, and low levels of affective trust. Following downward comparisons, participants had low levels of cognitive trust, and moderate levels of affective trust. Consistent with our earlier results, social comparisons differentially influence the two dimensions of trust, but both upward and downward comparisons are detrimental to trust relative to similar comparisons.

#### Mediation analysis

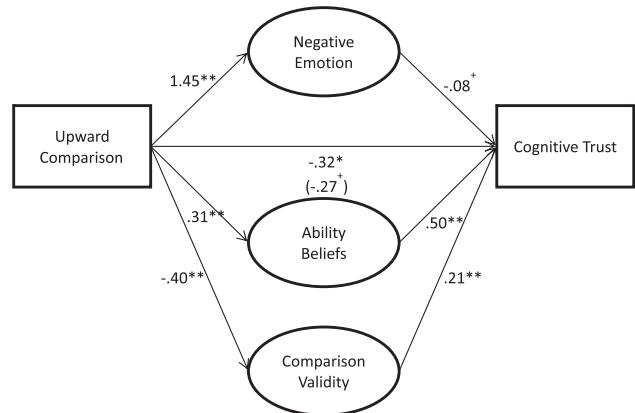
To determine whether ability beliefs, comparison validity and negative emotion mediated the relationship between social comparisons and trust, we used a bootstrap method for testing multiple mediation effects (Preacher & Hayes, 2008). Preacher and Hayes (2008) recommend bootstrapping methods to test mediation be-

cause of the limitations of other popular methods. They argue that the Sobel test (Sobel, 1982) is a suboptimal strategy because it assumes a normal distribution, and the causal steps approach (Baron & Kenny, 1986) does not explicitly test an indirect effect.

First, we tested for mediation of the effect of upward comparison on affective trust. We depict the mediation results in Fig. 4. For the independent variable, we dummy-coded the condition as upward comparison or similar comparisons (upward = 1 or 0). Upward comparison had a negative direct effect on affective trust ( $b = -0.69$ ,  $SE = 0.13$ ,  $p < .01$ ). With respect to the potential mediators of this effect, upward comparison had a significant positive effect on ability beliefs ( $b = 0.31$ ,  $SE = 0.11$ ,  $p < .01$ ) and negative emotion ( $b = 1.45$ ,  $SE = 0.16$ ,  $p < .01$ ), and a significant negative effect on comparison validity ( $b = -0.40$ ,  $SE = 0.14$ ,  $p < .01$ ). Participants in the upward comparison condition perceived the trustee to have higher ability and felt stronger negative emotion toward the trustee, than did participants in the similar condition. Participants in the upward comparison condition also viewed the performance results as less valid measures of ability than did participants in the similar condition. When we included the three potential mediators along with upward comparison as predictors of affective trust, negative emotion had a significant, negative indirect effect on affective trust ( $b = -0.18$ , 95% CI [−0.38, −0.01]) and the negative direct effect of upward comparison was diminished but still significant ( $b = -0.54$ ,  $SE = 0.16$ ,  $p < .01$ ).



**Fig. 4.** Mediation results for effect of upward comparison on affective trust. Unstandardized regression coefficients for indirect effects analyses in Study 3 ( $N = 218$ ). The value in parentheses represents the direct effect of upward comparison on affective trust, controlling for indirect effects. \*\* $p < 0.001$ ; \* $p < 0.10$ .



**Fig. 5.** Mediation results for effect of upward comparison on cognitive trust. Unstandardized regression coefficients for indirect effects analyses in Study 3 ( $N = 218$ ). The value in parentheses represents the direct effect of upward comparison on cognitive trust, controlling for indirect effects. \*\* $p < 0.001$ ; \* $p < 0.10$ .

**Table 6**  
Indirect effects of social comparison on trust in Study 3.

Point estimate of indirect effect	Standard error	95% Confidence interval	
		Lower	Upper
<i>Upward comparison and affective trust</i>			
Ability beliefs	0.0690	0.0437	0.0057 0.1770
Negative emotion	-0.1830	0.0942	-0.3805 -0.0111
Validity	-0.0371	0.0352	-0.1188 0.0218
<i>Upward comparison and cognitive trust</i>			
Ability beliefs	0.1558	0.0637	0.0446 0.2948
Negative emotion	-0.1174	0.1007	-0.3301 0.0646
Validity	-0.0822	0.0446	-0.1845 -0.0131
<i>Downward comparison and cognitive trust</i>			
Ability beliefs	-0.6776	0.1058	-0.8913 -0.4738
Negative emotion	-0.0041	0.0116	-0.0314 0.0156
Validity	0.0009	0.0150	-0.0311 0.0325

Note: The indirect effect is the product of the coefficients of two paths (1) from comparison direction to mediator and (2) from mediator to trust. 5000 bootstrap samples. Confidence intervals containing zero are interpreted as not significant.

We report indirect effects from the bootstrapping analyses in Table 6. Negative emotion partially mediated the influence of upward comparison on affective trust; upward comparisons generated more negative emotion, which reduced affective trust. Our analyses also revealed a suppressor effect of ability beliefs; ability beliefs had a positive indirect effect on affective trust. Thus, although upward comparisons positively influenced ability beliefs and ability beliefs increased affective trust, the overall effect of upward comparisons was negative, and was more strongly negative when we controlled for ability beliefs. That is, participants had lower affective trust in their counterparts when the counterpart outperformed them. The reduction in affective trust was partly due to negative emotional reactions, and the reduction was larger when we controlled for ability beliefs.

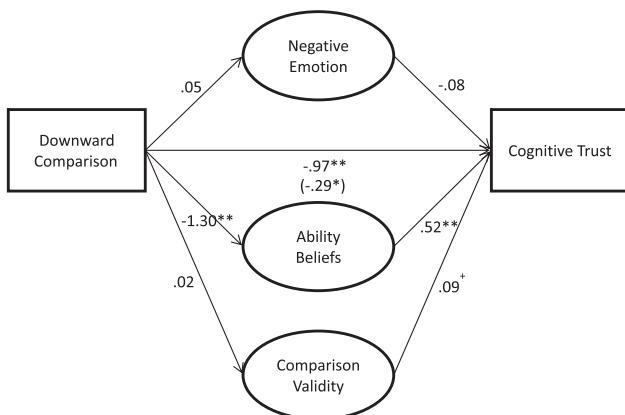
We did not expect upward comparisons to reduce cognitive trust more than similar comparisons, but we found a significant negative effect of upward comparisons on cognitive trust ( $b = -0.32$ ,  $SE = 0.13$ ,  $p < .05$ ). To investigate the mechanism underlying this effect, we conducted a second set of bootstrapping analyses using cognitive trust as the dependent variable instead of

affective trust. We depict these mediation results in Fig. 5. When we included the mediator variables in the analysis with the upward comparison variable, we found that comparison validity had a positive direct effect on cognitive trust ( $b = 0.21$ ,  $SE = 0.06$ ,  $p < .01$ ), and that the indirect effect of upward comparison on cognitive trust through comparison validity was significant ( $b = -0.08$ , 95% CI  $[-0.17, -0.01]$ ). That is, participants thought that the comparison was less valid following an upward comparison than a similar comparison, and perceptions of low validity harmed cognitive trust in high performers. As before, we found ability to have a suppressor effect; higher perceived ability was positively related to higher cognitive trust ( $b = 0.50$ ,  $SE = 0.08$ ,  $p < .01$ ). However, the direct effect of upward comparison remained significantly negative after we included the full set of mediators in the analysis ( $b = -0.27$ ,  $SE = 0.14$ ,  $p < .05$ ). Overall, upward comparisons harmed cognitive trust, in part, because individuals who were outperformed believed that the test was not a valid measure of ability.

Next, we tested for mediation of the effect of downward comparison on cognitive trust. For the independent variable, we dummy-coded the condition as downward comparison or similar comparison (downward = 1 or 0). Downward comparisons had a significant negative effect on ability beliefs ( $b = -1.30$ ,  $SE = 0.10$ ,  $p < .01$ ) and a direct effect on cognitive trust ( $b = -0.97$ ,  $SE = 0.11$ ,  $p < .01$ ). Downward comparison had no effect on negative emotion ( $b = 0.05$ , n.s.) or comparison validity ( $b = 0.02$ , n.s.). Participants in the downward comparison condition perceived the trustee to have lower ability than did participants in the similar condition, but participants in the downward condition and similar condition did not differ with respect to negative emotion or their perception of how diagnostic performance results were of actual ability. When we included the variables together, ability beliefs had a significant direct effect on cognitive trust ( $b = 0.52$ ,  $SE = 0.07$ ,  $p < .01$ ) and the direct effect of downward comparison was reduced ( $b = -0.29$ ,  $SE = 0.14$ ,  $p < .10$ ). We find the same results if we include only ability beliefs as a mediator. The indirect effect of downward comparisons on cognitive trust through ability beliefs was significant and negative; we depict this result in Fig. 6. Downward comparisons lowered perceptions of the trustee's ability and this harmed cognitive trust. Downward comparisons did not influence affective trust differently than similar comparisons, and we found no significant mediating effects for that relationship.

## Discussion

Results from this study demonstrate that upward and downward social comparisons affect trust in strangers. We compared affective and cognitive trust across three comparison conditions:



**Fig. 6.** Mediation results for effect of downward comparison on cognitive trust. Unstandardized regression coefficients for indirect effects analyses in Study 3 ( $N = 226$ ). The value in parentheses represents the direct effect of downward comparison on cognitive trust, controlling for indirect effects. \*\* $p < 0.01$ ; \* $p < 0.10$ .

upward, downward and similar comparisons. We found that affective trust levels were equivalent in the downward and similar comparison conditions. This suggests that people affectively trust outperformers less as a reaction to *having been outperformed*, as opposed to affectively trusting underperformers more as a result of *having outperformed* them. Our mediation analyses support this conclusion. Negative emotions, most strongly felt toward outperformers, partially mediated the relationship between upward comparisons and affective trust.

Similarly, the difference in cognitive trust following upward, downward and similar comparisons was largely a downward comparison effect. Participants placed significantly lower cognitive trust in downward comparison trustees. We found that the effect of downward comparisons on cognitive trust was mediated by beliefs about ability. Individuals who experienced either downward comparisons or similar comparisons thought the tests were more indicative of ability than did individuals who experienced upward comparisons. Compared to individuals who experienced a similar comparison, individuals who experienced an upward comparison judged the target as higher in ability; this relationship, however, was muted by perceptions about the validity of the comparison.

## General discussion

Relationships among peers are particularly difficult to navigate. Peers often engage in social comparisons, and as we demonstrate in this paper, social comparisons can systematically harm trust.

Our findings challenge the assumption that higher levels of ability increase trust. Instead, we find that indicators of a trustee's high ability that represent an upward social comparison can threaten a truster's self-image, trigger negative affect, and motivate trustors to discount the validity of the performance measure. As a result, high performance among peers can harm affective trust without benefiting cognitive trust. Conversely, underperforming peers instill low cognitive trust, but fail to boost affective trust.

We document this pattern of results for self-relevant comparisons with both friends and strangers. Taken together, our findings document the fragility of trust among peers.

## Research implications

Our findings have important implications for how trust is defined and modeled. Most prior work has conceptualized trust as a cognitive construct and the existing trust literature has yet to converge on a definition of trust (Ferrin, Bligh, & Kohles, 2008).

Our findings highlight the importance of recognizing and incorporating the distinction between affective and cognitive trust. We demonstrate that a single stimulus (such as an upward social comparison) can influence affective trust and cognitive trust very differently.

Our findings also highlight the important interaction between characteristics of the trustee and characteristics of the truster. Although prior models have suggested that a truster's general propensity to trust others may matter (Mayer et al., 1995; Rotter, 1971), prior research has ignored how attributes of the truster interact with attributes of the trustee to influence trust. As we demonstrate, this interaction can be quite important.

Results from our work also deepen our understanding of social comparisons. We not only link social comparisons with trust, but we also demonstrate that social comparisons evoke both cognitive and emotional reactions.

## Practical implications

Employees within workgroups are likely to engage in social comparisons. These social comparisons may harm trust, and managers should both recognize and manage the influence of social comparisons on trust within their workgroups.

In many cases, managerial actions can directly influence the social comparisons employees make. For example, managers who rank their employees or recognize an individual employee's performance within a workgroup may promote social comparisons. Of course, rankings and recognition programs can achieve important objectives, such as motivating performance and communicating valued behaviors. Our findings suggest that managers should weigh these benefits against the potential interpersonal costs of triggering social comparisons and consequently harming trust.

Managers may also take other steps that mitigate the harmful effects of social comparisons. For example, the thoughtful delivery of rewards and the design of teams may diminish the salience of performance comparisons. For example, rather than rewarding the top salesperson for "outselling 30 peers" the top salesperson might be rewarded for "outstanding sales and customer service."

In some cases, managers can offer team awards rather than individual awards. Team awards may promote assimilative comparisons (Collins, 2000) that cause individuals to view themselves more positively as their colleagues perform better (Dunn & Schweitzer, 2006). This process may mitigate the harmful effects of social comparisons on both affective and cognitive trust.

In addition to managerially triggered comparisons, many employees engage in social comparisons on their own. In fact, employees often compare themselves along dimensions that have little relevance to work-place performance, such as physical appearance and their social lives (Miceli & Castelfranchi, 2007). Managers should consider ways to protect or build trust among peers knowing that some social comparisons will be unavoidable.

In our study of law school applicants, we found that the decline in affective trust in peers with higher LSAT scores only occurred when the upward comparison preceded the downward comparison. When the upward comparison followed the downward comparison, affective trust in the high performer was not diminished. Quite possibly, those with an enhanced self-evaluation may feel less threatened by another's outperformance. Prescriptively, managers and peers who boost the self-evaluations of others before revealing outperformance information may suffer fewer harmful consequences.

Managers concerned about the harmful effects of social comparisons on trust can also take actions to build trust within groups. For example, managers can create opportunities for employees to demonstrate trust (e.g., through bonding activities) and draw peers' attention to evidence of their team members' trustworthiness. This

may be particularly important if trust is low, because individuals tend to seek and pay attention to information that confirms, rather than disconfirms, their beliefs.

Social comparisons are most intense among individuals who are psychologically close (Tesser, 1988). In the workplace, individuals with similar roles in the organization (e.g., lawyers) may be more apt to compare themselves with each other than with employees in diverse roles (e.g., market researcher vs. copy-editor). Managers may mitigate the harmful effects of social comparisons by highlighting the diversity in employee roles, assignments, and backgrounds.

### *Limitations and directions for future research*

In our studies, we documented declines in trust among peers. Though we did not explore this issue directly, it is possible that upward comparisons harm trust more broadly. In our studies, participants who experienced upward comparisons denigrated the validity of the performance measure. Quite possibly, employees who fail to receive rewards and recognition may develop self-preserving beliefs that similarly denigrate the validity of the reward systems or the managers who administer them. This may pose a particularly important problem for employees who chronically fail to win awards and recognition.

Our findings may also have broader impact than we observe in our studies, because trust is highly reciprocal (Ferrin et al., 2008). Individuals who trust others instill trust; individuals who distrust others instill distrust. Though we only measured the short-term effects of social comparisons on trust, it is possible that the effects we observe are magnified by the reciprocal nature of trust. For example, an underperforming employee who develops low affective trust in an outperformer may express this decreased trust in a way that motivates the high performer to similarly develop low(er) trust in the underperformer. In a longitudinal study, future work should explore the potential trust “spiral” that social comparisons might trigger.

In our studies, we document a significant reduction in trust following a social comparison. Future work, however, should explore the breadth of these effects. In some cases, trust is domain-specific (e.g., Mayer et al., 1995); for example, an individual might trust her mechanic to repair her car, but not to recommend a stock. Similarly, the reaction to an unfavorable comparison may be restricted to the comparison domain. If a colleague wins an award for creativity, our affective trust in that colleague may only be reduced during interactions focused on idea generation, and not interactions focused on execution. Similarly, trust may be less affected if the individual's high performance benefitted the group (e.g., the winner of the Most Valuable Player award of a winning team may not suffer from lower trust in spite of having earned additional, individual recognition). Future work should investigate the boundary conditions of our effects.

Future work should also investigate the relationships among social comparisons, trust, and self-promotion. Self-promotion strategies can boost perceptions of ability, but by boosting perceptions of ability self-promoters may reduce affective trust. Future work should explore how relative performance moderates the consequences of self-promotion.

Similarly, future work should extend our investigation to explore the influence of social comparisons on self-perceptions. Drawing from Tesser's self-evaluation maintenance theory (Tesser, 1988), we expected individuals to maintain their self-evaluations by changing their perceptions of the trustee. It is also possible, however, that changes in self-perception influence trust. For example, a downward comparison may boost an individual's sense of their own ability, and as a result, make them less willing to rely on any other person.

Our measures of trust capture the psychological intention to engage in trusting behaviors. Although psychological intentions to trust others have been closely linked with trust behavior (e.g., Schweitzer, Hershey, & Bradlow, 2006), future work should explore both affective and cognitive trust behavior following social comparisons. Trust is positively related to outcomes such as task performance and citizenship behavior (Colquitt et al., 2007; McAllister, 1995). Trust can also serve a moderating role for group performance. For example, Dirks (1999) found that motivation improved performance for high trust groups, but not for low trust groups. Recognizing a single group member may motivate other members, but may also lead to lower trust and, taken together, poorer group performance. Future work should examine whether the declines in trust from social comparisons ultimately harm individual and team performance.

### **Conclusion**

Our work describes the influence of social comparison information on two distinct components of trust: affective trust and cognitive trust. We demonstrate that upward social comparisons harm affective trust and that downward social comparisons harm cognitive trust.

In addition to extending our understanding of how ability information influences trust, our findings have important implications for models of trust. Our findings highlight the distinct nature of affective trust and cognitive trust, and argue for the inclusion of both types of trust in future models.

The harmful effects of social comparisons may be particularly important in the workplace, because they are difficult to recognize. Employees may be reluctant to acknowledge feelings of envy or threat, and as a result, outperforming targets may fail to recognize the effects their own outperformance has on others. Given the importance of teamwork and cooperation in organizations, however, managerial success may rest on a manager's ability to guide the social comparisons others make and to manage the consequences of both upward and downward social comparisons.

### **Acknowledgement**

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### **Appendix A. Scale items**

#### *Affective trust*

1. I would share my most outlandish ideas and hopes with this person.
2. I would talk with this person about difficulties I am having at school.
3. I am willing to admit my worst mistakes to this person.
4. I would rely on this person for support when I need it.
5. I would reveal information to this person that I don't want others to know about. (Studies 1 and 2 only).
6. I would avoid revealing any personal information to this person (reverse-scored, Study 3 only).
7. I would tell this person something I did not want others to know about (Study 3 only).

#### *Cognitive trust*

1. I would take this person's advice about school and work.

2. I would rely on this person to follow through on commitments.
3. I would assume this person's work is done properly if I need to use it.
4. I would be comfortable having this person in a critical role on my team.
5. I would feel uneasy if I needed to depend on this person's abilities.
6. I would assume this person has a good reason if s/he shows up late to a meeting (Study 3 only).

#### Negative emotion

1. It somehow doesn't seem fair that s/he seems to have all the talent.
2. I feel contempt towards him/her.
3. The bitter truth is that I generally feel inferior to him/her.
4. S/he makes me feel tense.
5. I am feeling relatively inadequate.
6. I feel pity towards him/her.
7. I feel disgusted by him/her.
8. I feel stress thinking about him/her.
9. I feel close to him/her without knowing him/her.
10. Frankly, his/her success makes me resent him/her.
11. I feel repulsed by him/her.
12. I feel apprehensive towards him/her.

#### Ability beliefs

How does your counterpart compare to the average student at Penn on each of the following:

1. Verbal ability.
2. Quantitative ability.
3. Analytic ability.
4. Work ethic.
5. Focus on tasks.
6. Desire to achieve.

#### Comparison validity

How well do you think each task measured one's ability?

1. Verbal Word Scramble.
2. Quantitative Math Problems.
3. Analytical Logic Problems.

How well do you think each task measured one's effort?

4. Verbal Word Scramble.
5. Quantitative Math Problems.
6. Analytical Logic Problems.

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