

Know who you're up against: Counterpart identifiability enhances competitive behavior

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## ABSTRACT

Research on pro-social behavior reports greater generosity and helping behavior toward merely identifiable persons, whose identities have been determined but not revealed, than toward unspecified, “statistical” targets. This work investigates whether identifiability can have a similar effect on behavior in competitive contexts. Data from three experiments show that providing arbitrary, non-identifying information about one’s competition enhances one’s goal-driven behavior: in competitive tasks, participants competing vs. merely identifiable counterparts displayed greater perseverance and performed better than participants whose counterparts were undetermined; in a dyadic bid setting, participants offered more money to outbid an identifiable counterpart for an auctioned product than an unspecified counterpart. In addition, we found that the effects of identifiability on competitors’ behavior were associated more strongly with the motivation not to lose than with the desire to win.

Keywords: Competitiveness; Identifiability; Social Comparison; Motivation; Auctions

## Introduction

Research on pro-social behavior finds that individuals are selective in whom they choose to help, but that the degree to which they extend help can be easily manipulated. For example, people exhibit higher willingness to help a person in need when that person is identifiable—specified, albeit not necessarily identified. Although the study of this effect has so far been limited to pro-social contexts, we believe that identifiability can also influence behaviors related to social comparison, particularly in competitive situations.

### *Mere identifiability and its effects on behavior*

One widely documented factor influencing helping behavior is the identifiability of the help-seeking victim. Schelling (1968) distinguished between individual, identified lives and anonymous, “statistical” lives, suggesting that the acute emotional reaction to the death of a particular person “disappears when we deal with a statistical death”. Jenni and Loewenstein (1997) generalized this assertion to helping behavior, by arguing that the enhanced emotional response to identifiable victims is accompanied by greater willingness to help. Later studies (Kogut & Ritov, 2005a, 2005b; Small & Loewenstein, 2003; Small, Loewenstein, & Slovic, 2007) found increased generosity toward identified victims, but also toward *identifiable* victims, individuals whose identities have been determined but not revealed. Small and Loewenstein (2003) asked people to donate money to a Habitat for Humanity project which builds houses for needy families. Potential donors were either told that the family which will benefit from their donation has been selected, or that it will be selected from among the families on the organization’s waiting list. Respondents donated more money in the former case than in the latter. Small and Loewenstein also reported results of a dictator game experiment, whereby allocators voluntarily transferred more money to recipients specified by random, non-distinguishing ID numbers than to those whose numbers were as yet undetermined.

In addition to its effect on charitable giving, identifiability also affects other social decisions, such as altruistic punishment. Small and Loewenstein (2005) found that participants in a public goods game paid to punish identifiable non-cooperators more than unidentifiable ones. As in the generosity experiments, identifiability conveyed no distinguishing information about the target person but nevertheless increased the other-regarding behavior.

While the role of identifiability in pro-social choice has been linked to intensified emotional reactions, we believe it could also be related to increased social comparison, which predicts both greater generosity and harsher punishment in these settings. However, the link between identifiable targets and social comparison has not yet been explored. If identifiability generally augments social comparison concerns, then these effects should occur not only in situations that engender empathy or blame, but also in competitive situations.

*Determinants of competitive behavior*

Prior research suggests that the presence of a target for comparison affects one's behavior in competitive settings (Garcia, Tor, & Gonzalez, 2006). In his study of triathletes' race patterns, Locke (2007) found that athletes who compared themselves to someone in the race with whom they were personally acquainted performed better than those whose reference points were more abstract. Other research found that enhancing the salience of social comparison with one's counterpart increases competitive behavior. Toda, Shinotsuka, McClintock, and Stech (1978) had children play a Maximizing Difference Game in dyads. They found that children who received feedback about their counterparts' performance subsequently focused more on their relative outcomes than those who did not receive the feedback.

Intensified comparative processes between competitors can lead to a state of rivalry. Kilduff, Anger Elfenbein, & Staw (2010) define rivalry as "a subjective competitive relationship that an actor has with another actor that entails increased psychological involvement and perceived stakes of competition for the focal actor, independent of the objective characteristics of the situation" (p. 945). They suggest that rivalry emerges and intensifies to the extent that the rival counterparts a) are similar to each other; b) have engaged in prior competitive exchanges, and c) are evenly matched in their competitive relationship. Chen (1996) identified similar patterns of rivalry at the firm level.

Taken together, these findings suggest that the presence and salience of an identified counterpart, to whom one compares oneself, can increase one's competitive behavior. If identified counterparts affect competitive behavior as they do pro-social behavior, will the same effect be observed for merely identifiable counterparts? In this paper, we investigate this question. We report three laboratory experiments that tested the effect of counterpart identifiability on individuals' behavior in competitive settings. We hypothesized that competitive behavior will be intensified by counterpart identifiability. We evaluated changes in competitive behavior by measuring either perseverance and performance on a task or the monetary amount bid in an auction, as well as attitudes toward the competition and its possible outcomes.

**Experiment 1**

This experiment tested whether counterpart identifiability affects behavior in a competitive setting. Participants performed a task while competing vs. either a merely identifiable (i.e., specified, but not identified) competitor or an unspecified competitor. We predicted that members of the former group would spend more time on the tasks, and consequently perform better than participants in the latter group.

### Method

Seventy-seven members of a paid research participant pool in the Northeastern United States (43 females,  $M_{age} = 26.37$ ) completed the experiment in the lab. They each received a \$3 show-up fee, plus a chance to win a monetary prize, depending on their performance relative to that of their respective experimental counterparts. Each participant received a randomly-determined four-digit ID number. We manipulated counterpart identifiability by telling participants in the *identifiable condition* the ID numbers of their counterparts and telling participants in the *unspecified condition* that their counterparts would be randomly chosen from among the other participants in the experiment. Since the identifiability manipulation was administered only in the initial instructions, it was important to filter out those participants who did not read these instructions carefully. Following the instructions, we administered an instruction reading test (Oppenheimer, Meyvis, & Davidenko, 2009). Participants read a long passage about the importance of carefully reading experiment instructions, which included an instruction to click the page title, rather than the Continue button, to advance. Twenty-two participants failed this test and were excluded from the dataset. The final sample consisted of 55 participants.<sup>1</sup>

Participants read six passages scanned from scientific articles and estimated the number of times the letter *a* appeared in each passage. We measured the time participants spent viewing each passage and the number of accurate estimates they made. Participants received feedback about their performance after each passage, but were not immediately told whether they won or lost the competition. After completing the tasks, participants predicted their counterparts' performance and rated, on a 9-point scale, the levels of effort they exerted, their motivation to succeed in the task, and their overall enjoyment of it. In each competing dyad, the participant who provided more accurate estimates was declared the winner of the competition and entered in a lottery for a \$25 prize. The losers entered in a lottery for a \$5 prize. In cases of ties, winners were determined by a random draw.

### Results and discussion

On average, participants spent 94.50 seconds on each task ( $SD = 25.44$ ) and made 1.69 accurate estimates ( $SD = 1.42$ ). These measures correlated significantly with each other ( $r = .399, p = .003$ ). As Table 1 shows, participants who competed with identifiable counterparts spent more time on the tasks ( $t[53] = 2.59, p = .01, d = 0.71$ ) and made more accurate estimates ( $t[53] = 2.81, p = .007, d = 0.77$ ) than those whose counterparts were unspecified.<sup>2</sup> These results demonstrate that the mere identifiability of one's counterpart significantly affects one's competitive behavior.

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<sup>1</sup> This failure rate is similar to those reported by Oppenheimer et al. (2009). This omission did not affect the results, see Footnote 2.

<sup>2</sup> Results including participants who failed the instruction reading test (minus one participant who had technical problems): time spent:  $t[74] = 2.72, p = .008, d = 0.63$ ; accurate estimates:  $t[74] = 2.55, p = .01, d = 0.60$ .

Table 1

*Performance and subjective rating measures by condition in Experiment 1. Standard deviations are in parentheses.*

	Identifiable counterpart	Unspecified counterpart	<i>t</i> value	<i>p</i> value
Average time, in seconds, spent per task	102.51 (25.67)	85.56 (22.41)	2.595	.01
Tasks solved correctly	2.17 (1.36)	1.15 (1.32)	2.809	.007
Counterpart's estimated successful tasks	3.24 (1.70)	2.73 (1.99)	1.025	.31
Reported level of effort exerted	5.45 (2.52)	5.42 (3.13)	0.033	.97
Reported level of motivation	7.03 (1.55)	7.23 (1.95)	0.416	.68
Reported level of enjoyment	5.38 (2.40)	5.04 (2.63)	0.503	.62

Participants' predictions of their counterparts' performances correlated significantly with their own actual performances ( $r = .352$ ,  $p = .008$ ), but were not significantly affected by counterpart identifiability ( $t[53] = 1.03$ ,  $p = .31$ ,  $d = 0.28$ ). Thus, identifiability does not seem to create a higher expected threshold for winning, and the difference in performance between conditions held when controlling for predictions of counterpart performance ( $t[52] = 2.57$ ,  $p = .01$ ,  $d = 0.71$ ). Interestingly, there were no significant differences in the subjective ratings of effort, motivation, or enjoyment, all  $ts < 1$  (see Table 1). This suggests that participants in the identifiable condition neither felt more compelled to try harder nor thought they tried harder, despite actually having done so.

## Experiment 2

This experiment tested the effect of mere identifiability in a different competitive setting: a first-price sealed-bid auction. Dyads comprising either identifiable or unspecified members submitted monetary bids for a product. We hypothesized these bids will be higher in dyads of identifiable participants than in dyads whose members were unspecified.

### *Method*

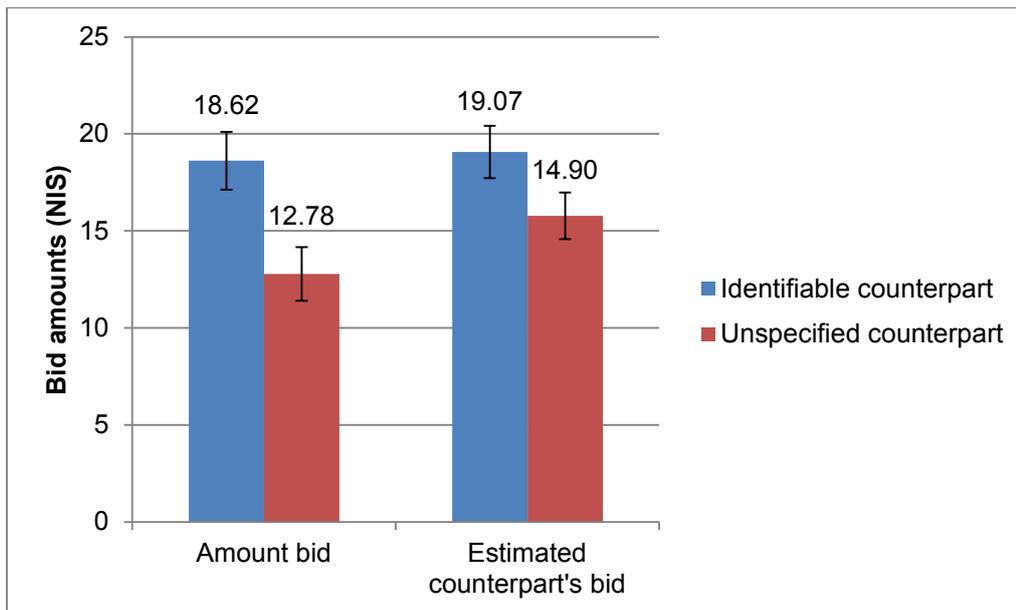
One-hundred six undergraduate students at an Israeli university (69 females,  $M_{age} = 24.21$ ) completed the experiment in the lab in exchange for 20 New Israeli Shekels (NIS, ~\$5US), which they received upon arrival. Participants were told they will participate in the auction of a 4GB SanDisk mobile storage device (retail price, unrevealed: 25 NIS). Each participant received an ID number and was randomly paired with another, unknown participant. We manipulated counterpart identifiability between sessions by telling participants in the *identifiable condition* their counterparts' ID numbers and by telling participants in the *unspecified condition* that their counterparts will be chosen randomly from among the session's other participants.

We auctioned one device per dyad. Participants submitted their bids by inserting money into envelopes and handing them to the experimenter. They were free to bid any amount (i.e., bids were not limited to the amount of participants' show-up fee). Before being told, privately, the outcomes of their bids, participants estimated, on a 7-point scale, how happy they will be in the event they won, and how sad they will be in the event they lost.<sup>3</sup> Finally, the member of each dyad who bid the higher amount was awarded the device while the other member of the pair was returned the money she bid.

### Results and discussion

Eight participants who submitted empty envelopes were excluded from the analyses.<sup>4</sup> Bid amounts ranged from 0.20 to 50 NIS (~\$12.50 US;  $M = 15.76$ ,  $SD = 10.43$ ). As predicted, participants whose counterparts were identifiable offered significantly larger amounts than those who competed vs. unspecified others, ( $t[96] = 2.88$ ,  $p = .005$ ,  $d = 0.59$ , see Figure 1).<sup>5</sup> Notably, more participants in the identifiability sessions (46%) than in the non-identifiability sessions (25%) submitted bids that exceeded their show-up fees,  $\chi^2 = 4.70$ ,  $p = .03$ .

Figure 1. Amount of money bid in the auction and estimates of the counterpart's bid in Experiment 2. Error bars indicate +/- 1 SEM.



<sup>3</sup> Participants also completed the Consumer Competitive Arousal (CCAr) scale (Nichols, 2012) and the Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999). We found no significant differences in either measure ( $ts < 1$ ) and do not discuss them further.

<sup>4</sup> Withdrawal could be driven by different motives, such as reluctance to compete, lack of interest in the product, or believing that one will surely be outbid by one's counterpart. This omission did not affect the results, see Footnote 5.

<sup>5</sup> Results including participants who bid 0 NIS:  $t[104] = 2.66$ ,  $p = .009$ ,  $d = 0.52$ .

Participants' estimates of their counterparts' bids were highly correlated with the amounts they themselves bid in both the identifiable ( $r = .688, p < .001$ ) and unspecified ( $r = .621, p < .001$ ) conditions.<sup>6</sup> As Figure 1 shows, estimates of the amount bid by an identifiable counterpart were marginally-significantly higher than the estimated bids of the unspecified counterparts ( $t[89] = 1.82, p = .07, d = 0.39$ ), but the identifiability effect on participants' own bids held when controlling for these estimates, ( $F[1,88] = 3.96, p < .05, \eta^2 = .04$ ). This result is consistent with prior findings, such as those of Hsee and Weber (1997), who demonstrated that people underestimate the risk-taking levels of abstract others relative to more vividly conceived ones. Thus, participants may have estimated a greater risk of losing the auction to an identifiable counterpart than to an unspecified one, but showed greater willingness to ensure a win over an identifiable counterpart, beyond differences in perceived risk.

Neither participants' anticipated happiness with winning the auction nor their anticipated sadness of losing it differed significantly between conditions. However, while these two measures correlated moderately in the identifiable condition ( $r = .340, p = .02$ ), their relationship was not significant in the unspecified condition ( $r = .120, p = .42$ ). Moreover, their relation to participants' behavior was such that when the counterpart was identifiable, participants' bid amounts correlated more strongly with anticipated sadness of losing ( $r = .419, p = .002$ ) than with anticipated happiness of winning ( $r = .043, p = .77; Z = 2.39, p = .02$ ), whereas in the unspecified condition these relationships did not differ in strength (anticipated sadness of losing:  $r = .123, p = .41$ ; anticipated happiness of winning:  $r = .255, p = .08; Z < 1$ ). This result, though exploratory in nature, suggests that the desire not to lose to an identifiable competitor may determine one's behavior to a greater extent than does the desire to win.

### Experiment 3

This experiment investigated whether identifiability affects motives associated with the desire to win and with the desire to avoid losing and whether any of these relationships mediates the behavioral effects observed in previous studies. To this end, we elicited participants' attitudes toward winning the competition and toward losing it more extensively than in Experiment 2. Also, if the effect of counterpart identifiability on competitive behavior depends primarily on one's sensitivity to a potential loss, then one certain way to prevent the loss would be to avoid competing altogether. Cain, Moore, & Haran (2014) showed that biased perceptions of counterparts' performance determine competition entry decisions. If identifiability increases participants' concerns about losing, this may influence their willingness to compete. Therefore, in this experiment, we provided participants the opportunity to opt out of the competition and to attempt to match a pre-determined performance standard rather than compete against another participant. This step enabled us to distinguish entry to the competition from behavior in the competition itself, as well as to exclusively focus on the behavior of willing competitors.

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<sup>6</sup> Five participants did not provide estimates; we excluded two outliers.

*Method*

Ninety-two undergraduate students at an Israeli university (69 females,  $M_{age} = 24.6$ ) completed the experiment in the lab in exchange for course credit and a chance to win a prize. Similar to Experiment 1, participants received four-digit participant ID numbers and were assigned to dyads. Participants in the *identifiable condition* were told the ID numbers of their counterparts whereas those in the *unspecified condition* were informed that their counterparts will be randomly chosen from among the experiment's other participants. Next, participants chose either to compete against their counterparts and win a prize—a set of headphones—if they outscore them, or to opt out of the competition and win the prize if they outperform a specified score (the median score of a previous run of the experiment).

All participants completed a series of estimation tasks developed by Haran, Ritov, and Mellers (2013). In each task, participants were shown a number of objects of different types displayed at random places on the computer screen for 2500 ms each time. They could click a button to view the objects as many times as they wanted before choosing the object type that appeared most frequently and estimating the total number of objects that appeared on the screen. We assessed perseverance by counting the number of times participants viewed the objects before entering their estimates. We evaluated performance by summing the number of times the most frequent object type was correctly chosen and by calculating the average absolute error in estimates of the total number of objects.

After completing the tasks, participants rated, on a 9-point scale, their attitudes toward winning the competition (how much they wanted to win, their anticipated happiness in the event that they won, how important it was for them to win), their attitudes toward losing the competition (how afraid they were to lose, their anticipated sadness in the event that they lost, how important it was for them not to lose), and the degree to which they regretted having chosen (not) to compete. Competitors also rated their attitudes toward their counterparts, both positive (the affection they felt toward the counterpart and their willingness to become, or stay friends with him or her) and negative (their desire to hurt the counterpart and their desire that the counterpart fail).

Next, to ensure that all participants had sufficient time to complete the tasks and to leave time for the results to be calculated, participants completed a filler task. After all participants had completed this task, they received feedback about their own and their counterparts' outcomes. Finally, they rated their current level of regret for having chosen (not) to compete, whether they should have invested more or less effort in the tasks, how happy (sad) they were that they won (lost), how happy (sad) they were that they did not lose (win), how frustrated they were with the results and whether they thought the competition was fair.

## Results

### Competition participation

Of the 92 participants, only 22 (23.9%) opted out of the competition. Opt-out rates did not differ significantly between conditions (identifiable: 18.4%; unspecified: 31.2%;  $\chi^2 = 1.77, p = .18$ ). Opting out resulted in more regret ( $M = 2.41, SD = 1.65$ ) than opting in ( $M = 1.53, SD = 1.05, t[90] = 2.97, p = .004, d = 0.64$ ), whereas among competitors, counterpart identifiability did not affect regret,  $t < 1$ . Table 2 shows that competitors also performed better than non-competitors, both in choosing the most frequent object type ( $t[90] = 2.80, p = .006, d = 0.73$ ) and in estimating the total number of objects ( $t[90] = 4.07, p < .001, d = 0.79$ ). No difference in perseverance was observed ( $t < 1$ ).

Table 2

*Performance and subjective rating measures by condition in Experiment 3. Standard deviations are in parentheses.*

	Identifiable counterpart	Unspecified counterpart	Opted-out
No. times stimuli viewed	8.96 (5.08)	6.48 (4.21)	7.75 (5.06)
Correct estimates of most frequent object type	2.03 (1.00)	1.63 (0.89)	1.23 (0.75)
Mean absolute error in estimates of overall number of objects	6.67 (3.10)	8.78 (4.43)	13.04 (8.97)

### Identifiability effects on competitors

As Table 2 shows, participants with identifiable counterparts viewed the objects more times before estimating than those who competed against unspecified counterparts ( $t[68] = 2.18, p = .03, d = 0.53$ ).

They also performed better (choosing most frequent object type:  $t[68] = 1.70, p = .09, d = 0.42$ ; estimating overall objects:  $t[68] = 2.34, p = .02, d = 0.55$ ).

Competitors' attitudes toward winning displayed high inter-item reliability ( $\alpha = .80$ ). Their desire that their counterparts fail correlated highly with attitudes toward losing ( $\alpha$  of these four items:  $.67$ ) but not with the desire to hurt their counterparts ( $r = .147, p = .23$ ), and was included in the former category. Positive attitudes toward the counterpart also displayed moderate inter-item reliability ( $\alpha = .63$ ) and were grouped together. A multivariate analysis of variance (MANOVA) on attitudes towards the competition's outcomes revealed that counterpart identifiability amplified both attitudes toward winning ( $F[1,68] = 4.02, p = .049, \eta^2 = 0.06$ ) and attitudes toward losing ( $F[1,68] = 6.11, p = .02, \eta^2 = 0.08$ , see Figure 2). We tested the indirect effect of identifiability on perseverance and task performance via participants' attitudes toward the competition. Only attitudes toward losing had significant relationships with any of the measures of behavior in the competition. We used procedures recommended by Preacher and Hayes (2008) to calculate 95% bias-corrected confidence intervals, using 5000 bootstrap resamples. We found a significant indirect effect of identifiability, mediated by attitudes toward losing, on perseverance ( $CI_{95} = 0.09, 1.90, p = .01$ ) and on correct choices of the most frequent object type

(CI<sub>95</sub> = 0.04, 0.42,  $p = .01$ ). Inclusion of this mediator reduced the uncorrected effects of identifiability to non-significance (see Figure 3). Performance of estimates of the total number of objects had no significant relationship with either attitude measure. Attitudes toward the counterpart did not differ between conditions, and no significant differences in participants' post-feedback reactions were observed,  $F_s \leq 1.60$ ,  $p_s \geq .21$ .

Figure 2. Attitudes toward winning and losing the competition by counterpart type in Experiment 3. Error bars indicate +/- 1 SEM.

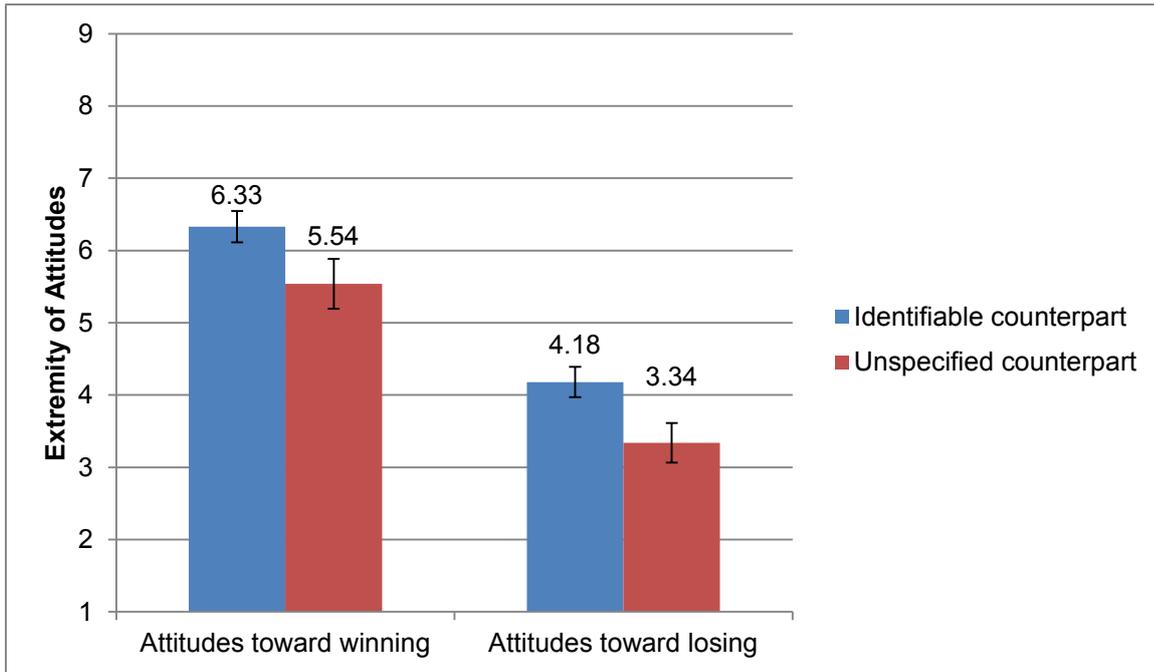
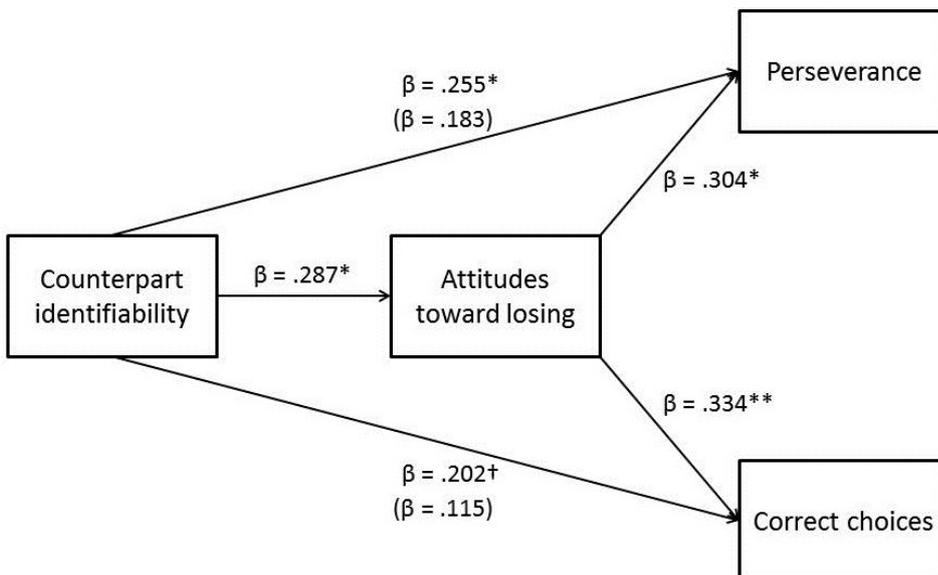


Figure 3. Results of mediation analyses for attitudes toward losing in the relationship between counterpart identifiability and perseverance (times viewed the stimuli) and performance (correct choices of the most frequent object type) in Experiment 3. The coefficients of the direct paths between the independent variable and the dependent variables are in parentheses. Standardized coefficients are presented. †  $p < .1$ ; \*  $p < .05$ ; \*\*  $p < .01$ .



*Discussion*

If the desire not to lose exerts greater influence on behavior than does the ambition to win, one would expect more people would protect themselves from losing by opting out of the competition. Nevertheless, most participants in both conditions preferred to compete vs. another participant rather than to surpass a predetermined standard. However, although the choice to compete was not affected, and counterpart identifiability increased both competitors' desire to win and their motivation not to lose, only the motives impelling them to avoid losing predicted actual behavior. The fact that avoiding a loss became a motivating factor only after joining the competition is consistent with Prospect Theory (Kahneman & Tversky, 1979) and its assertion that losses loom larger than gains. Whereas before making the decision to compete, nothing is at stake for potential competitors, entrance into the competitive setting cultivates a salient possibility of losing. If identifiability increases both the desirability of winning and the undesirability of losing, then loss aversion, similarly, would be expected to be greater in the identifiable counterpart condition.

**General Discussion**

Prior research on counterpart identifiability has found that identifiability increases one's generosity and willingness to help the other. This work demonstrates that in a competitive setting, counterpart identifiability also increases the effort to beat one's counterpart and win the competition. While research on competition has found that characteristics such as similarity of the competitors and their past interactions with each other influence competition intensity, our findings suggest that at least part of this effect occurs when counterparts are merely identifiable. Our results were obtained in two types of competitive settings. In tournaments, participants who competed against merely identifiable counterparts displayed greater perseverance and were more likely to solve a problem correctly than those who competed against unspecified counterparts. When their outcomes depended on the amount of money they offered for a product, participants bid higher amounts when their counterparts were identifiable. Our findings have important implications for two seemingly unrelated topics: the influence of identifiability on behavior and the determinants of competition.

*Identifiability*

Our experiments revealed that identifiability effects extend beyond the domain of pro-social decisions. While the identifiability of a person in need increased generosity and helping behavior, in our experiments, identifiability increased behaviors not geared toward helping that person. This raises the question of when identifiability increases cooperation and help and when it turns people's efforts against one another. Similar to the findings of Pierce, Kilduff, Galinsky, and Sivanathan (2013), that perspective taking enhances pro-social behavior in pro-social settings and competitive behavior in competitive settings, our results show that identifiability, as an effect previously thought to only increase positive

other-regarding behavior, can, in certain contexts, lead to the opposite outcome. Future research may clarify the conditions which determine the direction of this effect.

The literature generally attributes the effect of identifiability on altruism to the heightened emotional reaction evoked by the individuated victim in need (Dickert, Sagara, & Slovic, 2011; Dickert & Slovic, 2009; Kogut & Ritov, 2005a, 2005b; Slovic, 2007; Small & Verrochi, 2009). However, these emotional responses cannot explain the increased competitive behaviors we observed. Our findings suggest that the effects of identifiability are much broader, and may also apply to social comparative processes. While social comparison makes one's relative standing vis-à-vis one's counterpart more salient, it also highlights the unfairness of a victim's relative social standing (unless the victim herself is blamed for her misfortune; Kogut, 2011) and shifts the focus to the unjust benefits enjoyed by a non-contributor in an interdependent game. Perceiving the target person's (i.e., the victim, perpetrator or competitor) relative standing as unsatisfactory predicts, respectively, a greater willingness to behave altruistically, harsher punishment, and increased competitive behavior.

### *Competition*

Previous research on competition focused on structural factors, such as the size of the competitive field (Garcia & Tor, 2009; Zell & Alicke, 2010) or specific competitor attributes, as determinants of behavior (Kilduff et al., 2010), and on the interaction between competitive motives and comparing oneself with a single individual or one's group as a whole (Klein, 2003). We, however, find that competitive behavior can intensify when comparing oneself to *any* counterpart, regardless of any particular attribute, by merely making the counterpart identifiable. Although our participants did not receive sufficient information to form personalized comparisons with their counterparts, and the conditions of the competition failed to meet the prerequisites needed to form rivalries, they still displayed higher levels of competitive, goal-oriented behavior. This result suggests that the effects of social comparison and rivalry can emerge in the absence of these features.

Our findings do not suggest that attributes such as closeness and similarity between competitors do not matter. Our studies did not compare the influence of merely identifiable counterparts with that of real rivals. It may very well be that the level of competitiveness counterparts exhibit is based on a continuum of attributes they possess, from complete anonymity on one end to close, long-standing, bitter rivalry on the other. While previous research (e.g., Kilduff et al., 2010) demonstrated that rivals increase competitive behavior relative to non-rival (but still identified) counterparts, we find that even very low levels of specification generate higher levels of competitiveness than do anonymous competitors. This conceptualization is also supported by research on competitive behavior in auctions: Ku, Malhotra, and Murnighan (2005) found that as the number of active bidders in an auction decreased, the likelihood of bidders to bid above their predetermined limits increased. This may be another example of competitive sentiment being fueled by the increased specificity of one's counterparts.

Experiment 3 showed that the identifiability effect on competitive behavior was mediated by participants' attitudes toward a possible loss. This result resonates with Regulatory Focus Theory's distinction between promotion focus and prevention focus as motivating forces of goal-oriented behavior (Higgins, 1998). From this perspective, participants in a prevention focus increase effort to avoid losing, and making one's counterpart identifiable may have made this prospect more salient. This suggestion is consistent with prior research on regulatory focus in interdependent contexts, which demonstrates that prevention focus is related to avoidance of others, contrary to promotion focus, which is related to approaching close others (Shah, Brazy, & Higgins, 2004).

#### *Practical implications*

Our results show that making one's competitor identifiable can enhance one's goal-directed behavior without the long rivalry-building process previously deemed necessary for healthy competition, but also without the possibility of hurting one's counterpart at the expense of improving one's own performance. The ability to generate rivalry-like effects without a real rival may be valuable to managers and leaders. Attempts to boost team effort are often accompanied by a search for, or the creation of rivalries with other individuals or groups. While these actions may be effective in increasing motivation, effort and performance, they can also have polarizing effects on groups and their members and adverse effects on the relationships between the rivals. These perils become evident when competitors look to undermine each other's efforts (Carpenter, Matthews, & Schirm, 2010; Lazear, 1989). Our studies suggest that simply directing attention to any specific competitor can positively influence effort and performance. Going back to Locke's (2007) triathlon study, a competitor who has no close acquaintances in the race may arbitrarily choose another racer as a comparison target. Our findings suggest that this may improve her performance.

#### *Limitations and future directions*

As previously discussed, we believe that identifiability effects may be driven by social comparison. However, our experiments did not directly measure the degree to which participants compared themselves to their counterparts. Isolating this process and measuring it precisely will help clarify the relationship between mere identifiability, social comparison, and competitive behavior. Another open question refers to the point at which an unidentifiable counterpart becomes identifiable. Most of our social exchanges, whether competitive, comparative or cooperative, involve identified or identifiable others. It may well be that unidentifiable counterparts became specified enough to generate identifiability effects as soon as participants received their relative performance results. The lack of between-group differences in post-outcome-feedback reactions in Experiment 3 supports this proposition, but a test of repeated competition situations could provide more definitive answers.

*Conclusion*

Research in Social Psychology offers numerous interventions that shape other-regarding behavior. Making an anonymous target merely identifiable is among the more subtle and easily applied techniques, but to date, research on its effects has been limited mostly to pro-social behavior. This work demonstrates that identifiability can also shape behavior in competitive contexts. Our findings provide a first step toward a better understanding of the influence of mere identifiability on competition. We hope these results will encourage the study of identifiability, social comparison, and competitive dynamics, and advance the understanding of how competitive motivations can be maintained, or even enhanced, independent of conflict.

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