

# Winning a competition predicts dishonest behavior

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**Winning a competition engenders subsequent unrelated unethical behavior. Five studies reveal that after a competition has taken place winners behave more dishonestly than competition losers. Studies 1 and 2 demonstrate that winning a competition increases the likelihood of winners to steal money from their counterparts in a subsequent unrelated task. Studies 3a and 3b demonstrate that the effect holds only when winning means performing better than others (i.e., determined in reference to others) but not when success is determined by chance or in reference to a personal goal. Finally, study 4 demonstrates that a possible mechanism underlying the effect is an enhanced sense of entitlement among competition winners.**

competition | behavioral ethics | behavioral economics | decision making | corruption

Life, both personal and professional, is beset with challenges and rivalries. Success is often determined by one's ability to outstrip the competition. Although competition motivates individuals to work harder to obtain better outcomes it may also lead to deleterious effects, such as increasing dishonesty in pursuit of competitive advantage and decreasing prosocial behavior. Indeed, the literature offers important insights regarding the propensity of contestants to behave in prosocial or asocial manners before and during competitions (1, 2). We know only little about contestants' behavior after the competition has ended. The current research aims at filling this gap. In particular, we ask: Who is more likely to subsequently engage in unrelated unethical behaviors—winners or losers?

Competition outcomes are by definition relative. The results are determined by the ranking of the competitor relative to other contestants. Because performance outcome is determined relative to others, competition evinces social comparisons (3, 4). Enhanced social comparison can in turn result in two contrasting effects. On one hand, because losers have access to fewer resources than winners, they may be more motivated to use asocial behaviors to enhance their resources. Indeed, several laboratory studies show that losing tends to provoke subsequent dishonest behavior (5–7), suggesting increased motivation to behave unethically when in a position of disadvantage (8). On the other hand, one may expect that the increased prominence of social comparison in competition will evince a sense of entitlement among winners (9, 10). The sense of entitlement, in turn, facilitates dishonest behavior among winners (6, 11). This reasoning points to the opposite prediction, namely that winners are more inclined to behave dishonestly than losers.

Psychological entitlement is the feeling that one is more deserving of preferential treatment than other people are (12). Some findings suggest that entitlement is also a psychological state; for example, people's sense of entitlement increases when being wronged (5, 6). Psychological theories explaining unethical behaviors typically focus on feelings and rationalizations as motivating factors of these behaviors. For example, people often behave dishonestly, but only to the extent that they can do so without violating their perception of themselves as honest (13, 14), or to the extent that they can justify their actions (15–21). In this context, a sense of entitlement may mediate the relationship between self-concept and dishonesty because it provides the necessary justification for moral disengagement. Individuals who feel entitled can convince

themselves that engaging in a behavior they would normally consider unacceptable is in fact acceptable for them. For instance, an entitled individual may recategorize theft as “merely claiming what s/he justly deserves,” thus paving the way for the commission of a dishonest act (22, 23).

Previous research in line with our conjecture shows that one's censured conduct increases with one's sense of entitlement. For example, entitlement increases dishonest behavior (6, 11, 24). Indirect real-world evidence in line with the conjecture that winners are more inclined to behave dishonestly than losers includes the effect of social status on unethical behavior. Social status is an individual's ranking within society in terms of wealth, occupational prestige, and education. Social status is defined in reference to others within the society and often triggers social comparisons (3, 25). Perhaps surprisingly, research on the effect of social status on behavior reveals that high social status decreases prosocial behaviors and promotes a sense of entitlement and consequent asocial behaviors (26–29). An important factor separating members of the upper classes from those of the lower classes is the extent to which individuals have won the competitions they have encountered in their lives (winning either by their own merit or due to their social class). We propose that the experience of winning a competition, in itself, yields a tendency toward dishonest behavior. We test this hypothesis in four studies that explore how winning a competition engenders unethical behavior in a subsequent unrelated task.

## Results

**Baseline: Measuring Dishonesty in the Dice-Under-a-Cup Task.** First, we examined the amount of self-reported winnings participants claim in the dice-under-a-cup task. In this task, a participant receives two dice and a cup with a small hole in the bottom that allows peeking. The participant places the cup over the dice,

### Significance

**Competition is prevalent. People often resort to unethical means to win (e.g., the recent Volkswagen scandal). Not surprisingly, competition is central to the study of economics, psychology, sociology, political science, and more. Although we know much about contestants' behavior before and during competitions, we know little about contestants' behavior after the competition has ended. Connecting postcompetition behaviors with preceding competition experience, we find that after a competition is over winners behave more dishonestly than losers in an unrelated subsequent task. Furthermore, the subsequent unethical behavior effect seems to depend on winning, rather than on mere success. Providing insight into the issue is important in gaining understanding of how unethical behavior may cascade from exposure to competitive settings.**

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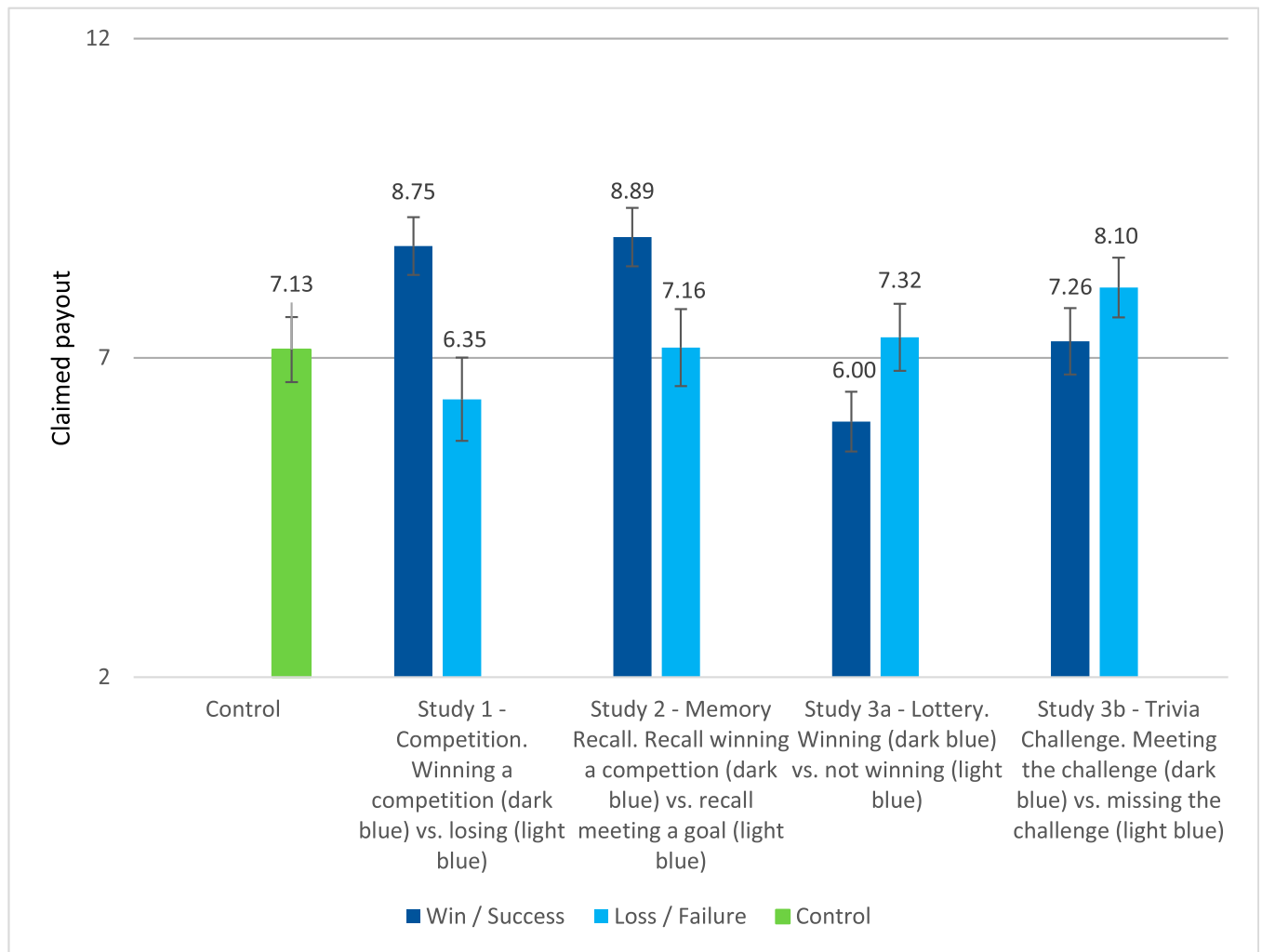
shakes it, and receives money according to his or her reporting of the outcome of the roll. Because only the participant can see the outcome, the task allows the experimenter to measure dishonest behavior at the aggregate level (i.e., compare the actual mean to the expected mean). In the present research, we used the paradigm in a game of pairs (a thrower and a receiver) with a fixed total amount of 12 Israeli shekels (NIS; at the time of the studies 1 NIS was worth approximately \$0.25), so that the thrower's claims are deducted from the fixed amount. That is, the more the thrower claims, the less the receiver gains. Notably, in contrast to most experiments on dishonest behavior, participants who cheated stole money from their counterparts rather than from the experimenter. The main advantage of this modification is that it intensifies the moral dilemma, because stealing from a fellow participant is a blatant asocial act. To measure dishonest behavior we compared participants' claimed payouts to the expected mean payout.

The left column in Fig. 1 summarizes the main findings. On average participants claimed [mean (M) = 7.13, SD = 2.46]. Overall, participants' claims did not significantly differ from the expected 7 NIS [ $t(22) = 0.26, P = 0.80$ ].

Next, we tested our main hypothesis, namely that the experience of winning a competition promotes subsequent dishonest behavior. Because we do not have a measure of individual dishonesty, to measure aggregate dishonest behavior we compared participants' claimed payouts to two standards. First, we compared participants' payouts to the expected mean payout. In addition, we compared participants' claims to those of the baseline condition in which participants completed the dice-under-a-cup task without any preceding experimental activity. These baselines provided the standard of comparison for the following studies.

**Study 1: The Effect of Winning a Competition on Dishonest Behavior.**

In the first study, we assessed the effect of participating in a real competition on dishonest behavior. We invited participants to two ostensibly unrelated experiments. In the first experiment, we randomly assigned participants to dyads and let them compete against each other, using the same series of estimation tasks developed by Haran et al. (30). At the end of the competition, winners were rewarded with a pair of earbuds. Importantly, because the estimation task was unfamiliar and completed in private,



**Fig. 1.** Participants' demands in the dice-under-a-cup task in the control condition and following a competition (study 1), following a memory recall task (study 2), after a lottery has taken place (study 3a), and after a trivia task (study 3b). Error bars are  $\pm 1$  SE; 7 NIS is the mean expected chance level payout. As can be seen, participants in the control group refrained from stealing money from their counterparts. In contrast, recalling winning a competition or honestly winning one yielded subsequent dishonesty in an unrelated task, whereas winning a lottery or achieving a goal did not yield such behavior. In studies 1–3 new random matching of participants to dyads took place for this task. Throwers did not know whether their fellow receivers won or lost earlier in the experimental session.

winners and losers were, in effect, determined by chance. Next, as a purportedly unrelated task, participants carried out the same dice-under-a-cup task we used in the baseline condition, allowing us to examine for dishonest behavior.

Importantly, a new random matching of participants to dyads took place for this task, and throwers did not know whether their fellow receivers won or lost the competition that took place earlier in the session.

Participants' actual performance in the competition task was unrelated to their claim in the dice-under-a-cup task ( $r = 0.13$ ); however, their status as winners and losers had a clear effect on their claiming. The second and third columns on the left side of Fig. 1 summarize the main findings. As shown, there was a significant difference between the claims of participants who won the competition and participants who lost [ $t(41) = 2.939, P < 0.01$ ]. Overall, winners claimed ( $M = 8.75, SD = 2.023$ ) significantly more than the expected 7 NIS [ $t(19) = 3.869, P < 0.01$ ]. In contrast, losers' claims ( $M = 6.35, SD = 3.128$ ) did not significantly differ from the expected 7 NIS [ $t(22) = -1.00, P = 0.328$ ]. Further analysis showed that winners claimed significantly more than the control group [ $t(41) = 2.34, P < 0.05$ ], whereas losers did not significantly differ from the control group [ $t(44) = 0.94, P = 0.35$ ].\*

**Study 2: The Effect of Recall on Dishonest Behavior.** We designed study 2 to replicate the findings regarding the winners in study 1 and to contrast the experience of winning a competition with that of achieving a goal. The difference between the two experiences is that winning a competition is determined in reference to the other contestants, whereas achieving a goal is determined in absolute terms without direct reference to others. We asked participants to recall either a situation in which they had won a competition against someone or a situation in which they had achieved a goal. After completing the recall task, respondents engaged in the two-dice-under-a-cup task used in study 1. The fourth and fifth left columns in Fig. 1 summarize the main findings of study 2: The figure shows a significant difference between the claims of participants who recalled an experience of winning a competition and those who recalled an experience of achieving a goal [ $t(36) = 2.292, P < 0.05$ ]. Overall, winners of a competition claimed ( $M = 8.89, SD = 1.99$ ) significantly more than the expected 7 NIS [ $t(18) = 4.136, P < 0.01$ ]. In contrast, the claims of participants who recalled an experience of achieving a goal ( $M = 7.16, SD = 2.63$ ) were not significantly different from the expected 7 NIS [ $t(18) = 0.262, P = 0.797$ ]. Further analysis (leftmost column in Fig. 1) revealed that winners claimed significantly more than control group participants [ $t(40) = 2.52, P < 0.05$ ],<sup>†</sup> whereas achievers did not [ $t(40) = 0.35, P = 0.97$ ].

The last two studies examine the extent to which mere success, rather than winning, drives the effect.

**Study 3a: The Effect of Winning a Lottery.** Does winning a lottery have an effect similar to that of winning a competition? If the unethical behavior observed in the earlier studies is related simply to the experience of winning, winning a lottery may have the same effect as winning a competition. If, however, beating a rival is at the core of the effect, lottery winners would not be

expected to cheat. To test this possibility, the setting of study 3a was identical to that of study 1, with the exception that instead of participating in a competition participants took part in a lottery in which every other participant won a pair of earbuds (i.e., 50% chance of winning). As in study 1, a new random matching of participants into dyads took place for this task, and throwers did not know whether their fellow receivers won the lottery. The sixth and seventh columns of Fig. 1 summarize the main findings. As can be seen, participants who won the lottery on average claimed a lower amount ( $M = 6.00, SD = 2.52$ ) than those who lost the lottery claimed ( $M = 7.32, SD = 2.45$ ). The difference approached significance [ $t(49) = 1.87, P = 0.07$ ]. Importantly, comparing winners' claims to the expected chance level revealed that winners claimed less than the expected 7 NIS [ $t(28) = -2.136, P < 0.05$ ]. The same comparison for losers revealed that they did not claim more than the expected 7 NIS [ $t(21) = 0.61, P = 0.55$ ]. Neither lottery winners' nor lottery losers' claims were significantly different from those of the control group [for winners  $t(50) = 1.624, P = 0.11$ ; for losers  $t(43) = 0.26, P = 0.799$ ].

Although winning a lottery does not seem to engender subsequent unethical behavior, more meaningful, self-relevant success may effect cheating, even in the absence of direct competition. Our final study examines this possibility.

**Study 3b: The Effect of Achieving a Goal.** We designed this study to control for the possibility that the experience of excelling rather than that of defeating an opponent in a competition drove the effect. To test this possibility, in study 3b, instead of taking part in a competition, participants faced a trivia challenge. We first asked participants to answer 20 trivia questions. Those who managed to correctly answer more than 10 questions won a pair of earbuds. To avoid selection bias we used extremely difficult questions and randomly informed half of the participants that they had achieved the threshold and rewarded them with a pair of earbuds, whereas the others were informed they had not achieved it. As in previous studies, a new random matching of participants into dyads took place for this task, and throwers did not know whether their fellow receivers had achieved the required threshold of answering 10 trivia questions correctly or not.

Participants' actual performance in the trivia task was unrelated to their claim in the dice-under-a-cup task ( $r = -0.003$ ). More importantly, their status as achievers or nonachievers did not significantly affect their claims either. The two rightmost columns of Fig. 1 summarize the main findings. As can be seen, participants who met the threshold of answering 10 trivia questions correctly claimed on average  $M = 7.26, SD = 2.49$ , whereas those who did not meet the threshold claimed on average  $M = 8.10, SD = 2.14$ . The difference between achievers and nonachievers was not significant [ $t(42) = 1.19, P = 0.24$ ]. Importantly, comparing achievers' claims to the expected chance level revealed that achievers did not claim more than the expected chance level [ $t(22) = 0.50, P = 0.62$ ], whereas nonachievers claimed significantly more than the expected chance level [ $t(20) = 2.34, P < 0.05$ ]. Neither achievers' nor nonachievers' claims were significantly different from those of the control group.  $t(42) = 1.38, P = 0.17$ ;  $t(44) = 0.18, P = 0.86$ , for nonachievers and achievers, respectively.

**Study 4: The Effect of Competition on Sense of Entitlement.** Although there are many plausible mechanisms accounting for dishonest behavior, in the last study we investigated entitlement as one plausible mediator for the effects we have observed. Namely, we contrasted the experience of winning a competition with that of achieving a goal and examined the extent to which each of these two types of experiences promotes a sense of entitlement. In a survey, we asked respondents to recall either a situation in which they won a competition against someone or a situation in which

\*We obtained similar pattern of results using ANOVA with all three groups. There was a significant difference between all three experimental conditions [ $F(2,63) = 4.69, P < 0.05$ ]. Planned contrasts revealed a nonsignificant difference between the control and the losers groups [ $t(63) = 1.02, P = 0.31$ ] and significant difference between the control and the winners groups [ $t(63) = -2.04, P < 0.05$ ] and between the losers and the winners groups [ $t(63) = -3.00, P < 0.01$ ].

<sup>†</sup>ANOVA across all experimental conditions yielded the same pattern of results: a significant difference between groups [ $F(2,58) = 3.54, P < 0.05$ ]. Planned contrasts revealed a significant difference between the control group and winners [ $t(58) = -2.25, P < 0.05$ ] and between the achievers group and the winners [ $t(58) = 2.39, P < 0.05$ ] and a nonsignificant difference between the control group and the achievers group [ $t(58) = 0.037, P = \text{not significant}$ ].



they achieved a personal goal. All respondents then filled out a psychological entitlement scale (PES) questionnaire (21).

Respondents who recalled a situation of winning a competition scored 3.71 on the PES; respondents who recalled a situation of achieving a goal scored 3.21. The difference was significant [ $t(98) = 2.02, P < 0.05$ ]. This finding lends support to the hypothesis that winning a competition enhances one's sense of entitlement.

## Discussion

Honesty and dishonesty can affect the chances of winning a competition, but is an opposite causal relationship also possible? Namely, does beating a rival generate subsequent (dis)honest behavior? The results of our studies provide a clue, shedding light on the consequences of competing on dishonest behavior. In studies 1 and 2, participants who won a competition or even just recalled winning one overclaimed money from their counterparts in a subsequent experiment, indicating a higher likelihood of cheating relative to nonwinners. This tendency diminished when winning did not entail defeating an opponent, as in studies 3a and 3b. When winning was determined by chance (study 3a), lottery winners claimed less—rather than more—money from their counterpart, relative to expectation, suggesting an egalitarian disposition toward their counterparts. When meeting a set goal rather than beating a counterpart determined success (study 3b), again we found no evidence for overclaiming by winners. Finally, in study 4, we sought evidence of an underlying process. Building on previous findings showing that entitlement drives dishonesty (6, 11, 24), we examined the effect of winning on perceived entitlement. We found that participants who had recalled winning a match felt more entitled than participants who had recalled achieving a personal goal. On a more general level, our findings indicate that success is multifaceted. When success is measured by social comparison, as is the case when winning a competition, dishonesty increases. When success does not involve social comparison, as is the case of meeting a set goal, dishonesty decreases. We further suggest that entitlement may mediate this effect. We conclude that defeating one's counterpart in a competitive setting provokes dishonest behavior in unrelated situations.

Why are competition winners in contrast to achievers and lottery winners more prone to unethical behavior? Previous research on dishonest behavior points to three mechanisms that give rise to dishonest behavior and determine its extent. First, when deciding to behave dishonestly people balance between the motivation for personal gain and the desire to maintain a positive self-concept, consequently cheating only to the extent that they can do so without violating their perception of themselves as honest (13). Additionally, people often experience ethical blindness and fail to notice the unethical implications of a particular decision (31). Finally, maintaining a positive self-image requires being able to justify to oneself one's unethical behavior. Indeed, the extent to which people can justify their actions is an important determinant of unethical behavior (15–21). In line with these findings, the feeling of entitlement may facilitate self-justification for overclaiming resources. As we have shown, winning a competition enhances the sense of entitlement, presumably providing the necessary justification to engage in a behavior one would normally consider unacceptable.

The present research focuses on processes that occur after a specific competition has ended. Notably, these processes are different from the processes that occur during the competition and, hence, are not necessarily a direct continuation of the processes that come into play while competing. Specifically, previous research findings show that during—as opposed to after—social interactions people cheat more when presented with social comparisons to those they consider to be in a better position than themselves (5, 7, 32, 33), indicating a tendency to behave unethically when in a position of disadvantage (8). These findings

suggest that the association between winning and subsequent dishonest behavior is not simply a reflection of carryover processes. However, what is common to both during- and after-competition processes is the focus on social comparison. The essence of competing is the importance of relative ranking. As our findings indicate, the greater salience of relative ranking induces feelings of entitlement among winners, consequently leading to subsequent dishonest behavior. We do not claim that a sense of entitlement is the only factor that accounts for dishonest behavior following a competition. Given the complexity of the situation under study and the variety of mechanisms that drive dishonest behavior, it is likely that other mechanisms also come into play.

Some constraints regarding the present research need to be addressed. The interpretation of the competition outcome is a critical factor in our theory. The interpretation must surely be affected by perceptions of relative ranking before the competition. For example, when an adult competes against a 6-y-old child and wins, winning will probably not engender feelings of entitlement. Subsequent behavior is unlikely to be affected by the competition outcome. If anything, the loser rather than the winner may feel entitled to “level the field” by unethically obtaining a larger gain in the subsequent occasion. However, when two adults of similar background and abilities compete against each other, as in our present research, contestants have equal chances to win, and winning is expected to enhance feelings of entitlement. In that case, winning is expected to drive censurable conduct. It should be noted that even in similar situations motivations may differ. For example, it could be that a sprinter's goal is not only to win the race but also to set a new record or to improve his or her personal best. In that case, the goal may affect conduct more than beating the opponent in the competition, decreasing subsequent misconduct.

It is difficult to overstate the importance of competition in advancing economic growth, technological progress, wealth creation, social mobility, and greater equality. At the same time, however, it is vital to recognize the role of competition in eliciting censurable conduct (34, 35). A greater tendency toward unethicality on the part of winners, as our findings indicate, is likely to impede social mobility and equality, exacerbating disparities in society rather than alleviating them. Finding ways to predict and overcome these tendencies may be a fruitful topic for the future study of competition.

## Methods

**Ethics Statement.** All studies were approved by the Institutional Review Board at Ben-Gurion University of the Negev. All participants read and signed an informed consent before the studies.

### Control Group.

**Participants.** Forty-six university students provided informed consent and completed the study (26 female; age 21–44 y,  $M = 28.16$ ,  $SD = 5.54$ ; two participants did not disclose their age and gender). The analyses pertain only to the 23 participants in the role of throwers in the dice-under-a-cup task. The other half of participants acted as passive recipients.

**Procedure.** Participants entered the laboratory in large groups of ~20 students. We randomly assigned participants either the role of thrower or passive recipient. The experimenter distributed written instructions to throwers describing the dice-under-a-cup task and handed them two dice, a cup with a peeking hole in the bottom, and an envelope containing 12 1-shekel coins. The experimenter read aloud the following instructions: “You have received a cup with a small hole in the bottom, two dice, and an envelope containing 12 NIS in coins of 1 NIS each. Please turn the cup over the dice and shake it vigorously. The outcome of the shake (the numbers that came out) belongs to you. The rest of the money will go to one of the participants sitting in the lab who did not play the two-dice-under-a-cup game.” The experimenter then demonstrated the procedure and encouraged the throwers to practice the complete procedure once. Following the practice trial, the throwers engaged in the task.

**Study 1.**

**Participants.** Eighty-six students (52 female; age 21–31 y,  $M = 24.51$ ,  $SD = 1.69$ ) provided informed consent and completed the study in exchange for course credit and incentive-compatible payoff. The analyses pertain only to those 43 participants who acted as throwers in the dice-under-a-cup task.

**Procedure.** Participants entered the laboratory in large groups of ~20 students. We told participants that in the next 30 min they would participate in a battery of experiments. Study 1 comprised the first two experiments. In the first experiment, we randomly and anonymously assigned participants to dyads and had them compete against each other. For this experiment, we used the series of estimation tasks developed by Haran et al. (30). In each task, participants see a number of objects of different types displayed on a computer screen for 2,500 ms each. Participants could click a button to view the objects as many times as they wished before choosing the object type that appeared most frequently and estimating the total number of objects that appeared on the screen. After completing the tasks, winners were rewarded with a pair of JVC earbuds. Importantly, because the estimation task is done in private, winners and losers were determined by chance to avoid selection bias. Next, in the second part of the study (experiment 2), we used the modified dice-under-a-cup paradigm described above. We randomly assigned participants to the role of either throwers or passive recipients. Throwers rolled the dice and took the money according to their (mis)reporting.

**Study 2.**

**Participants.** Seventy-six students (36 females; age 19–36 y,  $M = 24.46$ ,  $SD = 2.47$ ; three participants did not disclose their age and gender) provided informed consent and completed the study in exchange for 10 NIS and incentive compatible payoff. The analyses pertain only to those 38 participants who acted as throwers in the dice-under-a-cup task. The rest of the participants played the role of passive recipients.

**Procedure.** Participants entered the laboratory in large groups of ~20 students. We told participants that in the next 30 min they would participate in a battery of experiments. Study 2 comprised the first two experiments. In the first part of the study (experiment 1) we asked participants to recall a competition-winning experience or a goal-achieving experience. Next, in the second part of the study (experiment 2), we used the modified dice-under-a-cup paradigm described above. We randomly assigned participants to the role of either throwers or passive recipients. Throwers rolled the dice and took the money according to their (mis)reporting.

**Study 3a.**

**Participants.** One hundred and two students (50 female; age 21–56 y,  $M = 24.5$ ,  $SD = 4.25$ ) provided informed consent and completed the study in exchange for course credit and a chance to win a pair of JVC earbuds. The analyses pertain only to those 51 participants who acted as throwers in the dice-under-a-cup task.

**Procedure.** Participants entered the laboratory in large groups of ~20 students. We told participants that in the next 30 min they would participate in a battery of experiments. Study 3a comprised the first two experiments. The procedure was identical to study 1 with the exception that in the first part of the study (experiment 1) participants filled out a 10-min-long questionnaire. Upon completion, all participants engaged in a JVC earbud lottery in which half the participants won a set of earbuds. Next, in the second part of the study (experiment 2), participants performed the dice-under-a-cup task.

**Study 3b.**

**Participants.** Eighty-eight students (50 female; age 19–43 y,  $M = 24.31$ ,  $SD = 3.13$ ; 10 participants did not disclose age or gender) provided informed consent and completed the study in exchange for 10 NIS and a chance to win a pair of JVC earbuds. The analyses pertain only to those 44 participants who acted as throwers in the dice-under-a-cup task.

**Procedure.** Participants entered the laboratory in large groups of ~20 students. We told participants that in the next 20 min they would participate in two experiments. The procedure was identical to study 1 with the exception that in the first part of the study (experiment 1) participants answered 20 trivia questions. We told participants that those who answered more than 10 questions correctly would receive a pair of earbuds. To avoid selection bias we randomly assigned participants as achievers or nonachievers. The questions were difficult, and it was not possible for the respondents to track the number of questions they answered correctly. In the second part of the study (experiment 2) participants performed the dice-under-a-cup task.

**Study 4.**

**Participants.** One hundred students (55 female; aged 19–61 y,  $M = 26.26$ ,  $SD = 5.61$ ) signed up in the decision-making laboratory participant pool, provided informed consent, and completed an online survey in exchange for six 50-NIS cash prizes.

**Procedure.** Participants accessed the study via a link sent by email inviting them to fill out a “short and interesting” questionnaire. As they logged on, they were randomly assigned to one of two conditions: competition-recall or goal-achievement-recall. We asked participants to write about a past experience in which they had won a competition or in which they had set themselves a goal they then achieved. Specifically, participants in the competition-recall condition read the following instructions: “Every now and then, each and every one of us competes against someone and wins. For example, competing in a sports match, in a race for a particular job, or in the race for admission to a specific university, or winning a prestigious scholarship. Please tell us about one such winning experience you have had in as much detail as possible. Please also tell us about the thoughts and feelings this victory stimulates right now.”

Participants in the goal-achievement condition read the following instructions: “Every now and then, each and every one of us sets her/himself goals and meets those goals. For example, meeting a specific fitness goal, obtaining a particular job, being admitted into a specific university, or receiving a special scholarship. Please tell us about such goal achievement experience you have had in as much detail as possible. Please also tell us about the thoughts and feelings this achievement stimulates right now.”

All participants then filled out the entitlement questionnaire (21). Mean responses to each item are shown in Table S1. We have also examined competence as an alternative mechanism. A description of the studies appears in [Supporting Information](#).

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