In press, *Journal of Experimental Psychology: General*

A paradox of pride:

Hubristic pride predicts strategic dishonesty in response to status threats

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Author Note:

Some of the ideas and data appearing in this manuscript were previously presented at the 2020 Meeting of the Society for Personality and Social Psychology in New Orleans, LA, and in the first author's Master's thesis, which is available on the UBC library website (https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0380503). The datasets, analysis scripts, and stimulus materials for each study are available here: https://osf.io/rzxfc/

Abstract

Numerous studies have shown that pride is comprised of two distinct facets: authentic pride, which is associated with achievement, high self-esteem, and pro-social personality traits; and hubristic pride, associated with arrogance, low self-esteem, and anti-social personality traits. Functionalist accounts suggest that both pride facets facilitate the attainment of social rank, raising the question of how the more anti-social and dysfunctional hubristic facet could increase one's social status. We propose that hubristically proud individuals use the anti-social behavior of dishonesty in a strategic and ultimately adaptive way, to gain status in response to experienced status threats. We tested this account in eight studies (seven of which were pre-registered) by placing participants in a situation in which they encountered an opportunity to lie as a means of obtaining various social rewards (e.g., status, power). Findings show that hubristically proud participants engaged in dishonest behavior when faced with a status threat, but not when faced with the threat of a loss of power or generalized inferiority; these individuals also did not behave dishonestly in a non-social situation. We further found that the observed effects of hubristic pride on dishonesty were largely independent of shared variance with narcissism, psychopathy, and Machiavellianism. These findings suggest that hubristic pride may engender a willingness to lie to get ahead, but only in situations where one's status has been threatened.

Keywords: Hubristic Pride; Dishonesty; Social Rank; Power; Status

"I had a helluva season last year, and nobody gave a crap. Nobody. As much as I've complained about McGwire and Canseco and all of the bull with steroids, I'm tired of fighting it. …I'm just gonna start using some hard-core stuff, and hopefully it won't hurt my body. Then I'll get out of the game and be done with it." – Attributed to Barry Bonds in *Love Me, Hate Me: Barry Bonds and the Making of an Antihero* (Pearlman, 2006)

Prior to his infamous doping scandal, Barry Bonds spent more than a decade dominating Major League Baseball. He won the Most Valuable Player award three times and was named an All-Star in eight different seasons. Given this extreme level of success, Bonds' decision to cheat by doping with anabolic steroids is surprising. Why would such an established superstar risk everything he had earned for the pursuit of marginally greater success?

The quotation that opened this paper may provide some insight. According to Pearlman, Bonds decided to use anabolic steroids because he believed he was not being adequately revered for his greatness. Bonds' motivation to cheat, in other words, stemmed—somewhat ironically—from his feelings of pride in his talents and abilities. Bonds believed in himself, but felt frustrated by his failure to generate the public acclaim he thought he deserved. He cheated, therefore, not because he thought he was not good enough to succeed on his own merits, but because he believed he was *too* good, and not appropriately rewarded for it.

Though extreme, Bonds' actions are by no means anomalous. The prevalence of scandalous lying and cheating among highly talented individuals who first earned their success through hard work and natural ability, including athletes like Lance Armstrong and academic scholars like Diederik Stapel, suggests a widespread psychological phenomenon at play. We argue that these individuals—people who lie or cheat to increase their status or social standing—may be motivated to do so by an excessive sense of pride combined with a deep-seated insecurity about their status compared to others.

In a series of eight studies,[1] we tested whether individuals' feelings of pride are associated with a willingness to engage in strategic dishonesty, aimed at conveying undeserved positive impressions of themselves to others. Specifically, we hypothesized that individuals who are dispositionally prone to hubristic pride, a form of pride associated with feelings of arrogance and conceit, are willing to lie and cheat when doing so will allow them to gain status from their peers. Drawing on previous research showing that hubristic pride is positively associated with dishonesty, Machiavellianism, and various other anti-social behaviors (Bureau, Ballerand, Ntourmanis, & Lafreniere, 2013; Tracy, Cheng, Robins, & Trzesniewski, 2009), along with evidence that pride functions to facilitate social rank attainment (Cheng, Tracy, & Henrich, 2010; Tracy, Shariff, & Cheng, 2010), we argue that hubristically proud individuals become willing to lie in pursuit of greater social status when they feel that their status is threatened.

Hubristic versus Authentic Pride

Previous research has identified two distinct facets of pride: authentic and hubristic (Tracy & Robins, 2007). Whereas authentic pride is represented by feelings of accomplishment and confidence, hubristic pride is represented by feelings of arrogance and egotism. Interpersonally, hubristic pride is associated with psychologically maladaptive traits and behavioral tendencies, such as narcissism, Machiavellianism, disagreeableness, aggression, a willingness to commit petty crimes, poor relationship functioning, and prejudice against minority outgroup members (Ashton-James & Tracy, 2012; Tracy et al., 2009; see Tracy, Mercadante, Witkower, & Cheng, 2020, for a review).

[1] We conducted four additional studies addressing this issue using similar methods (Studies S1-S4); these are reported in the SOM, for reasons detailed in SOM 5, 6, and 7.

Hubristic pride has much in common with clinical conceptualizations of antagonism and narcissism that emphasize fluctuations between grandiosity and vulnerability (Gore & Widiger, 2016; Morf & Rhodewalt, 2001), but it does not share a great deal of variance with narcissistic personality disorder (NPD; $r = .26$, $p < .05$, Tracy et al., 2009), which measures elements of both grandiose and vulnerable narcissism as assessed in social-personality psychology (Miller et al., 2011). This finding suggests that there are important differences between hubristic pride and both grandiose and vulnerable narcissism.

In particular, hubristic pride seems to fall between the two forms of narcissism in its relationships with personality and psychological well-being (Miller et al., 2011; Tracy et al., 2009). Grandiose narcissism is associated with a personality profile characterized by low neuroticism and high extraversion, and vulnerable narcissism is associated high neuroticism and low extraversion (Crowe, Lynam, Campbell, & Miller, 2019); hubristic pride is generally unrelated to both those traits (Tracy & Robins, 2007). In addition, grandiose narcissism is associated with high levels of psychological well-being across a number of indicators (e.g., self-esteem; Paulhus, Robins, Trzesniewski, & Tracy, 2004), but vulnerable narcissism tends to show strong, negative relationships with such outcomes. For example, people high in vulnerable narcissism tend to report low positive affect and high negative affect (Miller et al., 2011), high interpersonal distress (Dickinson & Pincus, 2003), and low self-esteem (Miller et al.,2011). In contrast, hubristic pride shows much more modest relationships, or no relationship at all, with these same indicators of psychological well-being; for instance, vulnerable narcissism correlates $r = -.46$ with self-esteem and $r = .52$ with attachment anxiety (Miller et al., 2011), whereas hubristic pride correlates $r = -.14$ and $r = .10$, respectively, with those two dimensions (Tracy et al., 2009; Tracy & Robins, 2007).

Individuals who are dispositionally high in hubristic pride (i.e., those prone to frequently experiencing episodes of hubristic pride across contexts) also report engaging in immoral behaviors such as cheating in competitive leisure activities (e.g., paintball; Bureau et al., 2013). However, these findings are based on correlations among dispositional scales, so it remains unclear whether hubristic pride is a unique predictor of dishonest behavior, or if shared variance in some third-factor trait, like disagreeableness, leads individuals to both experience hubristic pride and report dishonest behaviors. Furthermore, prior research has not addressed the question of whether hubristically proud individuals are indiscriminately dishonest (i.e., generally willing to lie or cheat across a range of situations) or if there are a specific set of contexts in which hubristic pride predicts dishonesty—and others where it does not.

Why Might Hubristic Pride Motivate Strategic Dishonesty?

Hubristically proud individuals tend to hold a grandiose, inflated self-concept, characterized by perceptions of self-superiority (Tracy & Robins, 2007). At the same time, these individuals are prone to shame and social anxiety, report relatively weaker friendship ties and problematic relationships, and are likely to be insecurely attached to their romantic partners (Tracy & Robins, 2007; Tracy et al., 2009). In light of this seemingly contradictory personality profile, hubristic pride has been theorized to be a defensive emotional response, which may function in part to protect individuals with fragile or unstable self-esteem from succumbing to implicit feelings of shame and low self-worth (Tracy & Robins, 2003; 2004; Tracy, Cheng, Martens, & Robins, 2011). In other words, the dispositional tendency to experience hubristic pride may emerge partly as the result of a regulatory process by which individuals suppress their feelings of shame and adopt an excessively positive sense of self-regard, often centered around one's status as an elite individual. Although this conceptualization is similar to psychological

entitlement and some versions of grandiose narcissism, hubristic pride differs empirically from these traits in that it is negatively associated with self-esteem (Tracy & Robins, 2007; Tracy et al., 2009) whereas grandiose narcissism and entitlement tend to show a positive relation with self-esteem (e.g., Campbell et al., 2004; Paulhus et al., 2004). In other words, whereas narcissistic individuals and those high in psychological entitlement are typically able to maintain their highly favorable self-views, those high in hubristic pride are more likely to succumb to feelings of shame and low self-esteem (Tracy et al., 2009).

Given this strong undercurrent of insecurity, the overt feelings of superiority that characterize those high in hubristic pride are unlikely to be entirely based in accurate self-perceptions. Instead, hubristically proud individuals may develop an aggrandized yet precarious sense of self, whose sustenance requires regular validation via external indicators of excellence, such as respect or admiration from high-status peers. By acquiring positive feedback from others that matches their grandiose and inflated self-concepts, individuals prone to hubristic pride can affirm their belief in their own superiority, and more readily suppress their negative feelings and anxieties. As a result, hubristically proud individuals are likely to take advantage of any opportunity to elicit greater respect and admiration from others, such as by drawing attention to their strengths and accomplishments, or seeking out objective indicators of social status such as positions of power or material wealth. Importantly, we propose that hubristically proud individuals value these external indicators of social status primarily because they validate their sense of self, more so than because of anything unique about any specific indicator. As a result, hubristically proud individuals are likely to pursue high status across domains and contexts, whereas people low in hubristic pride may instead feel narrowly motivated to achieve high status in a specific field that they personally value. This uniform pursuit of status across domains may

lead hubristically proud individuals to strive for high status even in situations where they do not deserve it and thus are unlikely to achieve it fairly.

Beyond fostering a motivation to seek rewarding external indicators of high social rank, hubristically proud individuals' grandiose self-concepts may also cause them to feel entitled to those rewards. Yet such elevated expectations may lead to a commensurately elevated likelihood of disappointment, as the external environment fails to meet their lofty expectations with sufficiently satisfying praise or recognition (Grubbs & Exline, 2016). We label these situations, where one either has or expects that they soon will have low social status, as status threats. During a status threat, individuals low in hubristic pride may accept the low status that is bestowed upon them, because they do not see themselves as having a legitimate claim to high status. In contrast, when hubristically proud individuals experience a status threat, the incongruence between the high status that they believe they deserve and the low status they are faced with possessing may sound an alarm that their self-concept is inaccurate, which in turn may motivate them to do whatever it takes to gain status, including using antisocial means like dishonesty. It is noteworthy that even the most skilled and qualified individuals can at times feel that their status is lower than it should be, regardless of their objective position in the hierarchy, as can be seen in the example of Bonds worrying about his status in baseball despite being widely considered a superstar in the sport.

To summarize, we propose that when faced with a status threat, hubristically proud individuals' unique combination of entitlement and insecurity in the domain of status makes them willing to lie or cheat if doing so might provide a status boost. In turn, this deception may allow them to meet their own grandiose expectations for high status by resolving any insecurity elicited by a discrepancy between their current social standing and their inflated sense of self-

worth. That said, we do not expect hubristically proud people to always or exclusively use anti-social tactics like lying to attain status, because there would be no reason to risk the consequences of these behaviors if status can be gained in more pro-social or normative ways. Furthermore, in the absence of a status threat, hubristically proud individuals' feelings of grandiosity likely lead them to assume they will be high status as a result of their genuine qualities or performance, such that they would have little need to use immoral or anti-social means to attain status. However, a direct status threat may elicit these individuals' insecurity, motivating them to engage in more anti-social means of attaining status.

This theoretical model is consistent with the notion that the ultimate evolutionary function of hubristic pride is to facilitate rank attainment (Cheng et al., 2010; Sznycer et al., 2017; Tracy et al., 2010). In fact, the model proposed here may help explain how this process works at a proximal level, such that people high in hubristic pride more closely track, and are especially sensitive to, status-relevant information, due to their unique combination of entitlement and insecurity in the domain of status. As time goes on, this sensitivity should lead these individuals to regularly experience status threats, which engender the proximate goal of resolving personal insecurities, possibly by using strategic dishonesty to gain status. In this view, the antisocial behaviors demonstrated by those high in hubristic pride can ultimately be adaptive, in the sense of promoting increased status and consequent fitness benefits.[2]

Several of these features suggest that this theorized process may be unique to hubristic pride. That said, related traits, such as the dark triad of psychopathy, Machiavellianism, and narcissism, may also predict strategic dishonesty to gain status. In our view, however,

[2] Of course, it is also possible that hubristic pride is not an evolved adaptation, despite the large body of evidence supporting the evolution of pride, broadly speaking (Tracy & Matsumoto, 2008; Tracy & Robins, 2008; Tracy, Shariff, Zhao, & Henrich, 2013).

correlations between these dark traits and cheating or lying in the service of status enhancement, specifically, are likely due to shared variance between these traits and hubristic pride.

In fact, given that elevated hubristic pride is a common feature to a number of broader anti-social dispositions (Dickens & Robins, 2020; Tracy et al., 2009), it may be closely related to the Dark Factor of Personality (*D*; Moshagen, Hilbig, & Zettler, 2018). D captures a tendency to maximize one's utility without regard for others, and to hold beliefs that justify this tendency. In this context, hubristic pride might be an emotion experienced by people high in D who engage in selfish, antisocial behavior because they believe they deserve high status, yet feel insecure about attaining it. If this is the case, hubristic pride might be the critical affective mechanism that motivates people high in a range of antisocial traits to cheat to get ahead in status-threatening situations.

Although previous studies have not tested whether hubristic pride promotes dishonest behavior, particularly after accounting for its overlap with the dark triad traits, several extant findings are consistent with the suggestion that hubristic pride may differ from these other traits in its unique association with dishonesty in the context of status threats, rather than more generally. For example, individuals prone to Machiavellianism, psychopathy, and grandiose narcissism have been shown to lie and cheat for monetary gain (Brown, Budzek, & Tamborski, 2009; Jones & Paulhus, 2017), but hubristic pride has been linked to dishonesty only in competitions where status is on the line but money is not (i.e., knowingly breaking the rules in a game to gain an advantage; Bureau et al., 2013).

The Present Research

Across eight studies, we employed multiple variations of a novel experimental procedure to test the hypothesis that individuals high in hubristic pride will use strategic dishonesty to gain

status (i.e., increased social standing in the eyes of others) specifically in response to status threats. In five of these studies, we examined the extent to which observed effects were attributable to hubristic pride, as opposed to shared variance with the dark triad traits of narcissism, psychopathy, and Machiavellianism.

For all of these studies, we developed an experimental procedure that allowed us to manipulate participants' social context so as to elicit a status threat and also provide an opportunity for status acquisition through dishonest behavior. In Studies 1, 2a, and 2b, we tested whether hubristically proud individuals would be more likely to lie about their performance on a cognitive task when facing a status threat versus when they had no reason to believe that their status was threatened. We also varied the rewarding outcomes that could be achieved by reporting high performance, among the following: (a) increased status in the form of respect and approval from a (fictitious) highly competent other participant (Studies 1 & 2a) and (b) power over a (fictitious) other participant in a subsequent partner task (Study 2a-3c).

In Study 4, we further tested our theoretical model by varying the procedure so as to examine another possible explanation for an association between hubristic pride and lying for the sake of status acquisition. Specifically, individuals high in hubristic pride might lie in response to feelings of inferiority elicited by the mere presence of more competent or high-status others, but not by a status threat specifically. Finally, in Study 5 we addressed potential methodological confounds in the prior studies, by asking participants to complete a different task and assessing the validity of our manipulations.

In sum, the present research tests a novel theoretical model of the association between hubristic pride and dishonest behavior and its core hypothesis that individuals high in hubristic pride engage in strategic dishonesty only after experiencing a status threat. This research is also

the first to: (a) test whether trait hubristic pride is associated with deception using a behavioral measure, (b) examine effects of trait hubristic pride independent of the broader dark triad traits, and (c) examine a specific mechanistic account that predicts both when and why people high in this disposition become likely to engage in the targeted behavior. Prior to conducting any empirical studies, we pre-registered our general hypotheses,[3] and prior to each study we pre-registered its sample size, procedure, and analysis plan on the Open Science Framework; see https://osf.io/rzxfc/[4] for pre-registration documents for each study.

STUDY 1

In Study 1 we tested whether hubristically proud individuals are willing to lie to self-enhance, and if so, whether they do so indiscriminately across social situations or only in situations that constitute status threats. We also tested whether hubristically proud individuals tend to lie when they lack information about their partner's status, possibly as a way of protecting their status from a potential threat. We pre-registered our prediction of significantly less lying in this situation, compared to that of facing a clear-cut status threat.

In order to tightly control our status threat manipulation, it was necessary to use deception, in that participants were told they would be interacting with a partner when no such partner existed. Although deceptive, this design allowed us to tightly control whether participants faced a status threat. During debriefing, participants were informed about the deceptive elements of the experiment, read an explanation about why deception was necessary, and were provided

[3] We also pre-registered the measures we planned to include for exploratory purposes. Results of these exploratory analyses are reported in SOM9.

[4] Please note that this OSF link was created for the purpose of anonymizing our pre-registration documents for peer review, so the dates listed next to each pre-registration document do not reflect when we originally posted these documents on the OSF website.

with both authors' contact information to voice any concerns and withdraw their data if they chose to do so. Across all studies, no messages were received from participants on this front.

Method

This study was approved by the Behavioral Research Ethics Board at the University of British Columbia (ID: H17-02025; Name: Pride and dishonest behavior).

Participants. Six hundred, thirty-two adults were recruited from Amazon Mechanical Turk (MTurk) to participate in the current between-subjects study. Participants in this and all subsequent studies were eligible to participate if they were located in the United States, had HIT approval rates greater than 95%, and, for subsequent studies, had not participated in any previous study in this investigation. Compensation rates ranged from $0.50-$1.00, based on study length.

Following the criteria specified in our pre-registration, 15 participants were excluded from analyses for failing an attention check, 43 for indicating suspicion of the deceptive experimental design, and 31 for receiving actual scores on the anagram task that made it impossible to effectively manipulate partner competence relative to the participant (see SOM2 for details on exclusions in all studies). This resulted in a final sample of 543 participants (55% female; age range = 18-73, Median = 34 years). A power analysis indicated that this between-subjects design would require 400 participants to detect a moderate effect of condition on the relationship between hubristic pride and dishonest behavior (f = .20) with 80% power. However, due to experimenter error, the study remained open on MTurk well after 400 participants had completed it, resulting in the larger-than-planned sample size.

Procedure. Participants believed they were participating in a study investigating how people track their own progress on tasks when working individually and with a partner.

They first completed the Authentic and Hubristic Pride Scales (AHPS; Tracy & Robins, 2007; α = .92 and .91, respectively) and the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988; α = .91 and .93, respectively), both at the trait-level, by reporting how often they generally feel each of the items. The AHPS contains two seven-item scales, one measuring authentic pride (example items include "accomplished", "confident", and "successful) and the other measuring hubristic pride (example items include "arrogant", "conceited", and "smug"). The PANAS was included largely to distract participants from the high number of pride items included, to disguise the purpose of the experiment and reduce potential demand characteristics. Participants completed these scales prior to random assignment, to avoid any impact of experimental condition on trait measures.

Next, participants were given five minutes to complete as many of 40 anagrams as they could. Before beginning the anagram task, they were told that later on in the study they would be randomly paired with another MTurk participant currently in the study, and the two of them would work together to complete a similar task. They were then informed that "it is necessary that you keep careful track of the number of anagrams you complete in order to be able to provide your partner with an accurate score". In reality, participants did not work in pairs at any point in the experiment, and no second task occurred.

After completing the anagram task, participants were randomly assigned to one of three experimental conditions. In the **highly competent partner condition** (*n* = 174), participants learned that their partner reported correctly solving 34 of the 40 anagrams, which placed him/her in the 94th percentile of performance on this task. In the **incompetent partner condition** (*n* = 179),[5] participants learned that their partner reported correctly solving 8 of the 40 anagrams,

[5] In this and future studies, several conditions are labeled somewhat differently than in our pre-registration documents. All of these changes were made for the sake of clarity, and are detailed in SOM3.

which placed him/her in the 16th percentile of performance. In the **control condition** (n = 190), participants did not learn any information about their partner's performance on the anagram task. This manipulation was intended to vary the presence of a status threat between conditions, such that participants would be low status (i.e., experience a status threat) when expecting to interact with a highly competent partner, but not when expecting to interact with an incompetent partner, nor when they were unaware of their partner's level of competence. The control condition was included to test whether hubristically proud individuals tend to lie whenever they have the opportunity to gain status from a peer in the form of increased respect or admiration, even if they do not know their current status relative to this peer.

After viewing their condition-specific information, participants were asked to report their initials in order to communicate with their partner via instant message during the dyadic task, along with the number of anagrams they had solved correctly. This prompt provided participants with the opportunity to behave dishonestly by exaggerating their performance on the anagram task. Finally, participants reported demographic information and were probed for suspicion before being thanked and debriefed.

Results

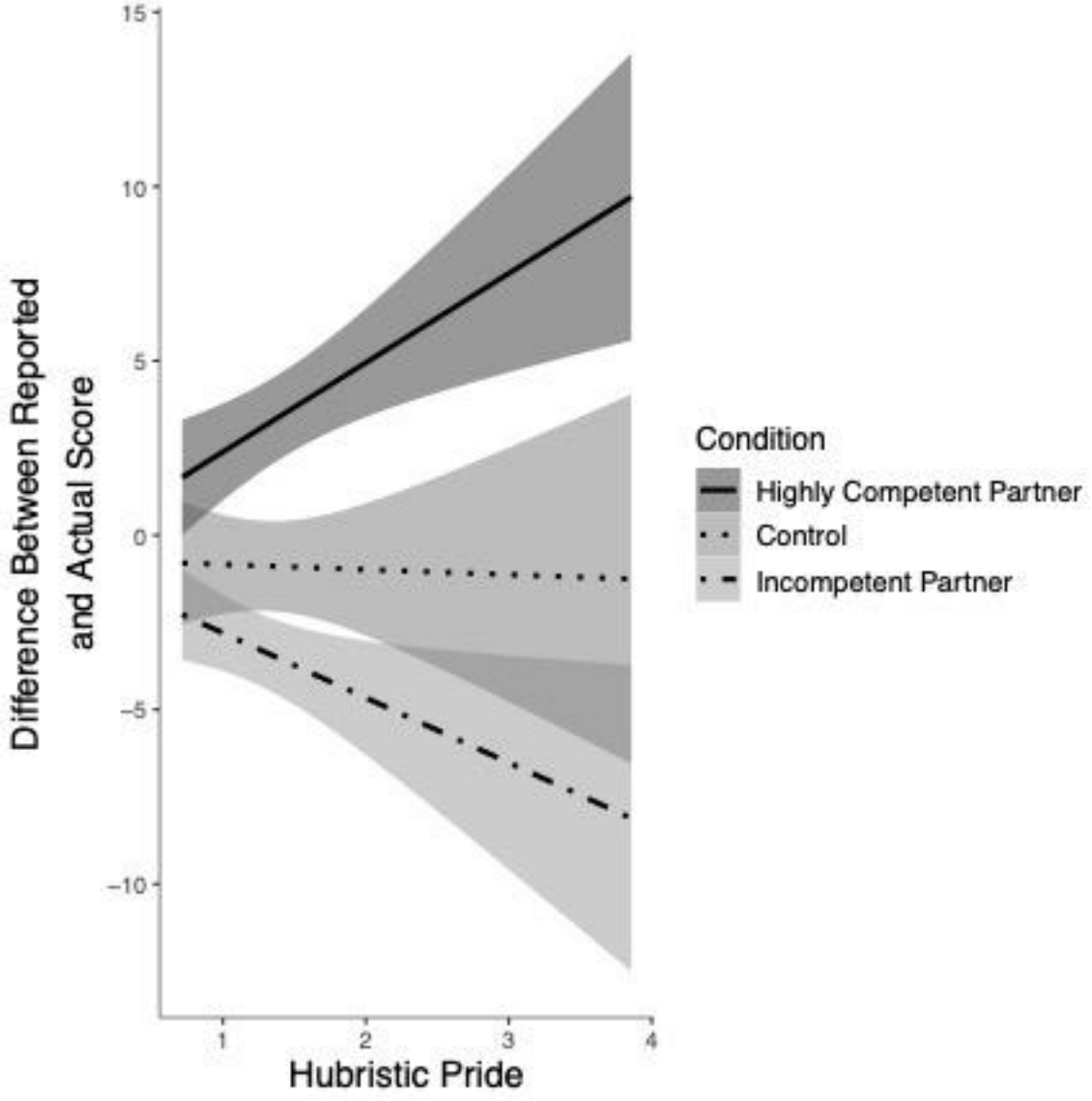
***Pre-registered analyses*.** We first calculated the difference between the number of anagrams participants reported solving and the number they actually solved, such that positive scores indicate that participants reported performing better than they actually did. A fixed effects one-way ANOVA revealed a significant effect of condition on overreporting one's score, $F(2,540) = 29.54$, $p < .001$. Subsequent Welch's t-tests indicated that participants overreported their score to a greater extent in the highly competent partner condition, $M = 3.42$, $SD = 8.43$, than in the incompetent partner condition, $M = -3.21$, $SD = 7.09$, $t(338) = 7.98$, $d = .85$, $p < .001$,

95% CI: [4.99, 8.26], and the control condition where no partner information was provided, M = -.88, SD = 8.96, $t(362) = 4.72$, $d = .49$, $p < .001$, 95% CI: [2.51, 6.10] (all 95% CIs reported after t-tests refer to the mean difference in overreporting between conditions). Participants also reported their score more inaccurately in the incompetent partner condition than in the control condition, but in this case they underreported their score, $t(357) = 2.77$, $d = .29$, $p = .006$, 95% CI: [.67, 3.97].

We next examined overreporting as a function of condition, hubristic pride, and interaction terms between hubristic pride and each condition with the highly competent partner condition as the reference group, using multiple regression. The following regression coefficients, and all other regression coefficients presented, are standardized coefficients. Two interactions emerged between hubristic pride and experimental condition, $\beta_{HCP\text{-}Control} = -.22$, $t(537) = -2.21$, $p = .03$; $\beta_{HCP\text{-}IP} = -.35$, $t(537) = -3.55$, $p < .001$, suggesting that hubristic pride was associated with significantly greater overreporting of one's score in the highly competent partner condition compared with the other two conditions; see Figure 1. Hubristic pride was not associated with significantly different levels of overreporting between the control and incompetent partner conditions, $\beta_{Control\text{-}IP} = -.14$, $t(537) = 1.29$, $p = .20$. Examining the simple slopes for the relation between hubristic pride and overreporting in each of the three conditions revealed that hubristic pride was associated with greater overreporting in the highly competent partner condition, $\beta = .20$, $t(537) = 3.19$, $p = .002$, but not in the control condition, $\beta = -.01$, $t(537) = -0.16$, $p = .86$. Somewhat surprisingly, hubristic pride also predicted falsely reporting one's score in the incompetent partner condition—but in this case those high in hubristic pride demonstrated false modesty, underclaiming the number of anagrams they actually solved, β = -

.15, $t(537) = -1.96$, $p = .05$ (see SOM6 for more on this surprising effect; also see Table 3 for the relationship between hubristic pride and overreporting in each condition, in all studies).

Figure 1. Interaction between hubristic pride and experimental condition predicting the difference between participants' reported and actual scores on the anagram task, Study 1.



Notes: The fans around regression lines represent 95% confidence intervals of the predicted values.

Exploratory Analyses. Given that this study was the first test of our hypotheses, we also conducted several exploratory analyses. First, to address limitations associated with the use of difference scores, we conducted condition-based regression analyses (Humberg et al., 2018) to test whether the effect of hubristic pride on overreporting represents a tendency for hubristically proud individuals to lie with respect to their actual scores (i.e., a self-enhancement effect) or a

tendency to report high scores regardless of their actual task performance (i.e., an effect of overly positive self-views). These analyses were consistent with those using difference scores, suggesting that, in the highly competent partner condition, hubristically proud individuals overreported their score with respect to their actual scores (see Table S3 in SOM). Another way to address this issue is to examine the relationship between hubristic pride and reported scores without considering actual performance. If the effect of overreporting that was observed using difference scores is attributable to overly positive self-views, then hubristically proud individuals should report higher scores than people low in hubristic pride even when actual scores are not taken into account. Refuting this possibility, in the highly competent partner condition there was no significant relationship between hubristic pride and higher score reporting when actual scores were not taken into account, β = -.10, $t(172)$ = -1.31, p = .19.

Finally, we examined the effect of authentic pride on overreporting (measured with difference scores) in each of the three conditions by replacing hubristic pride with authentic pride in the regression model used to test our primary hypothesis. Authentic pride did not predict overreporting in the highly competent partner condition, β = -.07, $t(537)$ = -0.96, p = .34, the control condition, β = -.003, $t(537)$ = -0.05, p = .96, nor the incompetent partner condition, β = .08, $t(537)$ = 1.21, p = .23. Table S9 of the SOM reports results for authentic pride across studies; no consistent effect on overreporting was observed in any condition across studies.

Discussion

Consistent with our hypotheses, individuals high in hubristic pride were more likely to report performing better on a cognitive task than they actually did when they believed they would be working collaboratively with a highly competent partner, but not when they did not receive information about their partner's competence nor when they believed their partner to be

incompetent. These results are consistent with our expectation that hubristically proud individuals engage in strategic dishonesty when they are faced with a status threat but not in social situations where their status is not threatened, even if lying in those situations could benefit their social status. We did not find significant effects of authentic pride in any of the three conditions, suggesting that the tendency to overreport one's score in response to status threats is unique to the hubristic form of this emotion. In all subsequent studies we therefore focused on hubristic pride, but report results for authentic pride across all studies in Table S9 of the SOM.

Hubristic pride was also associated with underreporting one's score when participants faced an incompetent partner. This latter result has potentially interesting implications, so we subsequently attempted to replicate it in a pre-registered follow-up study (Study S1; see SOM6). In this follow-up, no significant effect of hubristic pride emerged on falsely reporting one's score, and the trend was in the opposite direction as in Study 1— that is, toward exaggerating their score rather than minimizing it, $\beta = .10$, $t(154) = 1.25$, $p = .21$. Given this failure to replicate the unpredicted effect that emerged in this condition in Study 1, we hesitate to interpret it as meaningful at this point. However, we further address this issue in Study 5.

In conclusion, the results of Study 1 suggest that hubristically proud individuals are more likely than people low in hubristic pride to strategically deceive others so as to appear more competent when they are faced with a status threat. Nonetheless, they are not more likely than people low in hubristic pride to lie indiscriminately (i.e., when not facing a status threat), even in situations where lying might benefit their status— such as when facing a partner of unknown competence. This pattern of results supports our theoretical model, but this finding could be interpreted in several other ways. Therefore, we next conducted a series of studies to both

replicate the effect found in the highly competent partner condition here and test alternative explanations for it.

STUDY 2a and 2b

In Studies 2a and 2b, we sought to replicate the key finding of Study 1— that hubristically proud individuals behave dishonestly in response to a status threat. We also tested whether hubristically proud individuals cheat to raise their social rank in a different, more concrete, way: to gain power over their partner. Power is typically distinguished from status in that whereas status refers to one's level of respect and admiration in a group, power refers to more formalized control over resources and group members. People with high status and people with power influence others' behavior, but those with high status do so informally, as others willingly defer to them, whereas people with power are influential due to their ability to administer or withhold rewards and punishments (Anderson et al., 2015). Our theoretical model holds that hubristically proud individuals are interested in gaining power as an instrumental means to gaining status and validating their self-concept, but it is possible that the reverse is more accurate; hubristically proud individuals might seek status as an instrumental means for ultimately gaining social power. This would be consistent with past research suggesting that, at an ultimate evolutionary level, individuals care about status because it often brings power in the form of influence over others and control over valuable resources (Fiske & Berdahl, 2007; Glowacki & von Rueden, 2015). Furthermore, hubristic pride is strongly associated with dominance, a form of high rank that is derived not from subordinates' respect or admiration but instead from subordinates' fear (Cheng et al., 2010; Cheng et al., 2013). In this view, hubristically proud individuals might not care whether their partner respects and admires them so long as they have power over this partner.

In Study 1 we did not stipulate an explicit hierarchy between participants and their fake partner, but participants might have assumed that reporting a higher score than they actually achieved would allow them to take charge during the partner task. If this kind of power grab was these individuals' motivation for lying in this condition, then they would have lied not for the sake of attaining higher status, in the form of a highly competent other's respect and admiration, but rather for power over that other's behavior during the partner task. If this is the case, hubristically proud individuals should engage in strategic dishonesty even if they are not informed that their partner is highly competent, as long as there is a possibility for grabbing power. Alternatively, if these individuals engage in dishonesty solely for the sake of gaining status in status-threatening situations, we would not expect them to lie to appear more competent when there is no explicit status threat (i.e., if there is no highly competent partner), even if power is at stake.

To test these competing hypotheses, we included two new conditions in Studies 2a and 2b, and, in Study 2a, again included the highly competent partner condition from Study 1. In one new condition (i.e., the "power condition"), participants were informed that whichever partner scored higher on the anagram task would be assigned to a powerful position during the partner task. In the other new condition (i.e., the "intrinsic motivation condition"), participants were not led to believe that they would subsequently be working with a partner. Given that both studies included a power and an intrinsic motivation condition, we analyzed their results in aggregate, using multi-level modelling, to more accurately estimate effect sizes with a larger sample. Table 1 and SOM4 show results from each study analyzed separately.

Method

This study was approved by the Behavioral Research Ethics Board at the University of British Columbia (ID: H17-02025; Name: Pride and dishonest behavior).

Participants.

Study 2a. Four-hundred, five adults were recruited from MTurk to participate in the current between-subjects study. Following the criteria specified in our pre-registration, 37 participants were excluded from analyses for failing an attention check, 18 for indicating suspicion of the deceptive experimental design, and two for receiving actual scores on the anagram task that made it impossible to effectively manipulate partner competence in the highly competent partner condition (see SOM2). This resulted in a final sample of 348 participants (49% female; age range = 19- 72, Median age = 34 years) who were randomly assigned to either the **highly competent partner** (*n* = 110)**, power** (*n* = 109)**, or intrinsic motivation condition** (*n* = 129)**,** as described below.

Our pre-registered hypothesis was that hubristically proud people would falsely claim to have solved more anagrams than they did to a significantly greater extent in the highly competent partner condition and the power condition, compared to the intrinsic motivation condition. This pattern of results would replicate what we found in Study 1 for participants in the highly competent partner condition, and suggest that hubristically proud people will cheat for power as well as to gain status. We did not expect to see a significant relationship between hubristic pride and overreporting in the intrinsic motivation condition because participants there knew they were working alone, so neither status nor power was at stake. We also predicted main effects of condition on overreporting, such that overreporting would be higher in the highly competent partner and power conditions compared to the intrinsic motivation condition.

Study 2b. Two-hundred seventy-five adults were recruited from MTurk to participate in the current between-subjects study. Following the criteria specified in our pre-registration, seven participants were excluded from analyses for failing an attention check, and 11 for indicating suspicion of the deceptive experimental design (see SOM2). This resulted in a final sample of 257 participants (51% female; age range = 22- 82, Median age = 33 years). In this study, participants were randomly assigned to either the **power** (*n* = 165) or **intrinsic motivation condition** (*n* = 92)**,**[6] as described below.

We conducted Study 2b to attempt to replicate what we found in the power and intrinsic motivation conditions of Study 2a. As in that study, we pre-registered the prediction that hubristically proud people would overreport their score to a significantly greater extent in the power condition than in the intrinsic motivation condition.

Aggregate sample

Across Studies 2a and 2b, 680 participants (total *N* after exclusions = 605) were recruited to participate in three between-subjects conditions: (1) **highly competent partner** (total *N after exclusions* = 110), (2) **power** (total *N* after exclusions = 274), and (3) **intrinsic motivation** (total *N* after exclusions = 221). This sample size provided 80% statistical power to detect an effect size of Cohen's *q* = .25 and *q* = .33 for the difference in the relationship between hubristic pride and overreporting in the intrinsic motivation condition compared with the power condition and highly competent partner condition, respectively.[7]

[6] Due to the inclusion of measures addressing a separate question beyond the scope of this research, which were completed after the critical dependent variable, about twice as many participants were assigned to the power condition as the intrinsic motivation condition.

[7] We had aimed to have statistical power to detect an even smaller effect size, but subsequently learned that the power analyses we conducted were meant for regression interactions between two continuous variables rather than one continuous (hubristic pride) and one categorical (experimental condition) variable. Thus, although we originally pre-registered analyzing Studies 2a and 2b separately, we here focus on the results of analyses based on aggregate data across the two studies, for which we had greater power to estimate reliable effect sizes. Results are reported separately for the two studies in SOM4. Estimated effect sizes in the power analyses are based on those we actually

Procedure.

Study 2a

As in Study 1, participants in Study 2a believed they were participating in a study investigating how people track their own progress on tasks when working individually and with a partner. They began by completing the Authentic and Hubristic Pride Scales (AHPS; Tracy & Robins, 2007; α = .93 and .92, respectively) and the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988; α = .92 and .92, respectively), both at the trait-level, by reporting how often they generally feel each of the different items. Next, participants were randomly assigned to one of three conditions and given condition-specific instructions for the same anagram task as in Study 1. The **highly competent partner condition** was the same as that used in Study 1, such that participants were told that after completing the anagrams they would be randomly paired with another MTurk participant currently in the study and the pair would work together to complete a similar task.

In the **power condition**, participants were given the same initial instructions as in the highly competent partner condition but were also told that the member of their dyad who reports the highest score on the individual anagram task would "be assigned to the role of LEADER and the other person will be the SUBORDINATE" for the second task, and that "the LEADER will determine how the group approaches the second task, such as by splitting up the anagrams to be solved by each person, and will be able to send instructions to the SUBORDINATE via instant message." In reality, participants did not work in pairs at any point in the experiment and no second task occurred. In the **intrinsic motivation condition**, participants were not told that they

had 80% power to detect in the aggregate data, based on sensitivity analyses conducted after data collected. We also addressed the possibility of low power with internal meta-analyses subsequent to all studies.

would be paired with another participant, but were still given instructions to carefully track their performance. In this condition, participants were told that "participants tend to find [the anagram task] both interesting and enjoyable for its own sake, as well as a fun challenge". These instructions were intended to encourage participants to value their performance on this task and treat it as a challenge that might be diagnostic of their intelligence, which should engender a motivation to perform well for reasons unrelated to conscious strivings for status or power.

After viewing their condition-specific instructions, participants completed the same anagram task as in Study 1. Afterwards, they reported their initials and the number of anagrams they correctly solved. In the highly competent partner condition, prior to reporting their own score participants saw that their partner reported correctly solving 34 of the 40 anagrams, which placed him/her in the 94th percentile of performance on this task. In the power condition, participants were not provided with any information about their partner's score prior to reporting their own. Similarly, in the intrinsic motivation condition participants reported their score without any information about other participants' scores. Finally, participants reported demographic information and were probed for suspicion before being thanked and debriefed.

Study 2b

Participants in Study 2b followed an identical procedure to those in the power and intrinsic motivation conditions in Study 2a. Reliability was high for all trait measures: authentic pride $\alpha = .93$, hubristic pride $\alpha = .94$, positive affect $\alpha = .90$, negative affect $\alpha = .95$.[8]

Results

[8] We also measured current feelings of pride at the end of the study, for exploratory purposes. To avoid using the same items twice, we split the Authentic and Hubristic Pride scales into two parts, so participants completed a random subset of 3 of the 7 items on each scale at the beginning of the study to assess their trait levels of authentic and hubristic pride. These 3-item subscales showed similarly high reliability (authentic pride $\alpha = .93$, hubristic pride $\alpha = .94$) to the full 7-item versions used in Study 2a (authentic Pride $\alpha = .93$, hubristic pride $\alpha = .92$).

We first calculated the difference between the number of anagrams participants reported solving and the number they actually solved, such that positive scores indicate that participants reported performing better than they actually did.

Pre-registered analyses. To maximize statistical power, data from Studies 2a and 2b were combined in a multi-level model with observations nested within studies. A fixed effects two-way ANOVA revealed a significant effect of condition on overreporting, $F(2,580) = 21.02$, $p < .001$, no significant effect of study, $F(1,580) = 0.19$, $p = .66$, and no significant interaction between condition and study, $F(1,580) = 0.20$, $p = .65$. Subsequent Welch's t-tests indicated that participants overreported their score to a greater extent in the highly competent partner condition, $M = 3.34$, $SD = 6.40$, compared to the power condition, $M = -.31$, $SD = 5.83$, $t(178) = 5.09$, $d = .60$, $p < .001$, 95% CI:[2.24, 5.06], and the intrinsic motivation condition, $M = -.89$, $SD = 5.09$, $t(173) = 5.93$, $d = .73$, $p < .001$, 95% CI:[2.82, 5.63]. No significant difference emerged between the power and intrinsic motivation conditions, $t(473) = 1.15$, $d = .11$, $p = .25$.

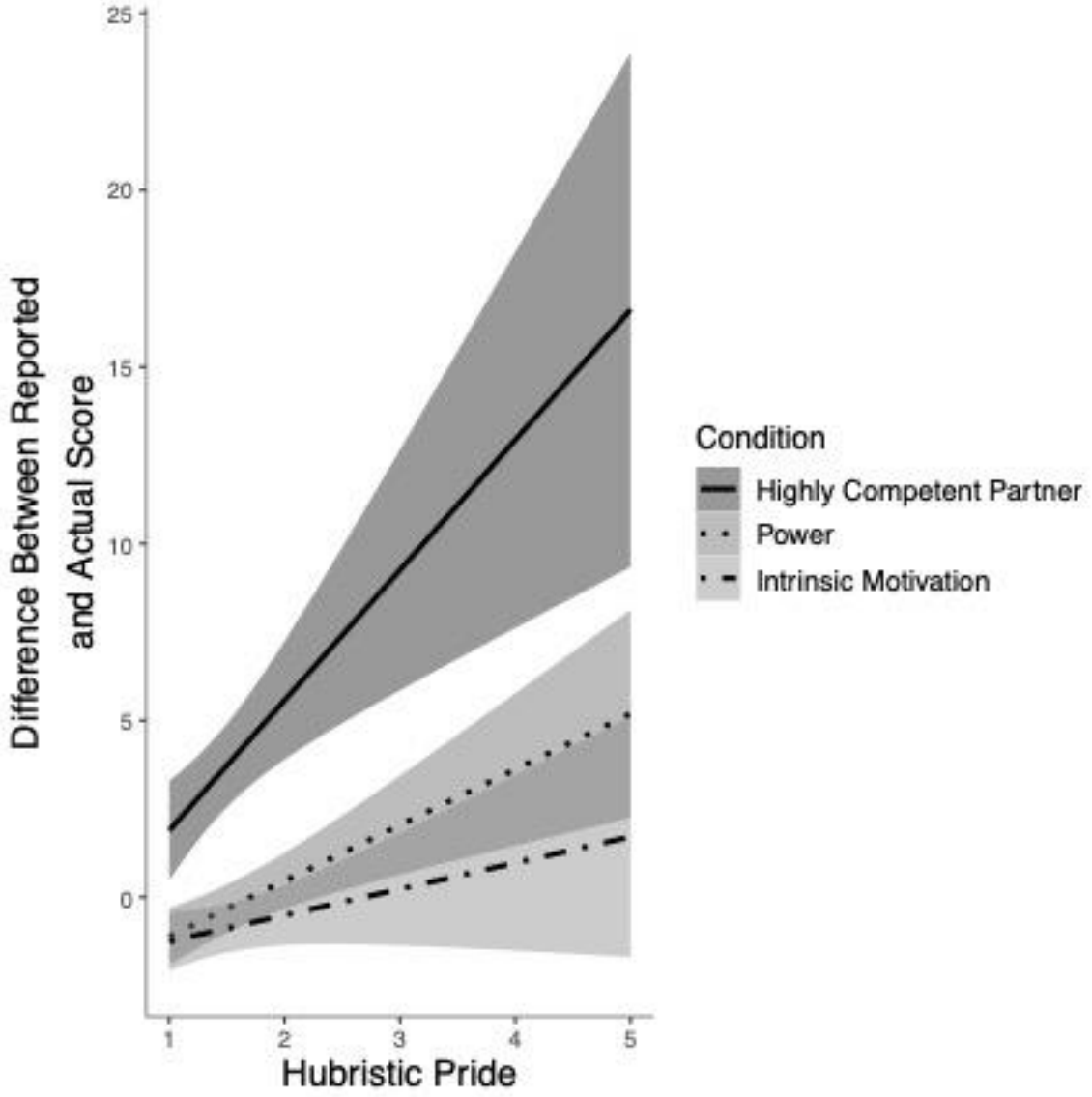
We next examined overreporting as a function of condition, hubristic pride, and interaction terms between hubristic pride and each condition with the intrinsic motivation condition as the reference group, using random-intercept, random-slope hierarchical regression with observations nested within studies. We found a very small intraclass correlation coefficient (ICC; ICC < .001), indicating that extremely little variance in overreporting was due to differences between studies (Lüdecke, 2018). A significant interaction emerged, $\beta_{Int\text{-}HCP} = .35$, $t(578) = 2.52$, $p = .01$, suggesting that hubristic pride was associated with significantly greater overreporting in the highly competent partner condition than in the intrinsic motivation condition. In contrast, hubristic pride was not associated with significantly greater overreporting

in the power condition compared with the intrinsic motivation condition, $\beta = .13$, $t(578) = 1.48$, $p = .14$.

Examining the simple slopes for the relation between hubristic pride and overreporting in each of these conditions revealed that hubristic pride predicted overreporting in the highly competent partner condition, $\beta = .44$, $t(578) = 3.34$, $p = .006$, and the power condition, $\beta = .22$, $t(578) = 3.03$, $p = .001$, but not in the intrinsic motivation condition, $\beta = .09$, $t(578) = 1.07$, $p = .37$. Condition-based regression analyses (Humberg et al., 2018) confirmed these effects were not due to a tendency to report high scores regardless of one's actual score, but rather were exaggeration, or specific self-enhancement, effects (see Table S3). However, in contrast to our pre-registered prediction, the relation between hubristic pride and overreporting within the power condition was not significantly greater than that same relation in the intrinsic motivation condition.

To determine whether hubristic pride was associated with significantly greater overreporting of one's score in the highly competent partner condition compared with the power condition, we reran the same hierarchical regression analysis but with the power condition as the reference group, and found an interaction, $\beta_{Power\text{-}HCP} = .35$, $t(578) = 2.52$, $p = .01$, suggesting a significant difference in the relationship between hubristic pride and overreporting in these two conditions. The results of this multi-level model are depicted in Figure 2, and separate results for each study can be found in Table 1.

Figure 2. Interaction between hubristic pride and experimental condition predicting the difference between participants' reported and actual scores on the anagram task in the aggregate data from Studies 2a and 2b.



Notes: The fans around regression lines represent 95% confidence intervals of the predicted values.

Table 1

Relationship (standardized betas) between hubristic pride and overreporting one's score in each condition, separately by study, Studies 2a and 2b.

Study	Condition		
	Intrinsic Motivation	Power	Highly Competent Partner
Study 2a (n = 348)	.06	.34**$_a$	.42**$_a$
Study 2b (n = 257)	.16	.15*	*NA*

* $p < .05$
** $p < .001$
$_a$Significantly greater than the effect in the intrinsic motivation condition

Discussion

Consistent with the results of Study 1 and our hypothesis, hubristically proud individuals tended to report performing better than they actually did when they faced a status threat in the form of being paired with a highly competent partner. In contrast, hubristic pride did not predict overreporting when participants knew they were working alone, suggesting that these individuals are selectively dishonest. However, results from the power condition leave some ambiguity regarding whether this dishonesty is driven by a motivation to gain power. Within that condition hubristically proud participants were more likely to overreport their score than were those low in hubristic pride. However, they were not significantly more likely to do so, compared with when they knew they were working alone. Together, these results replicate the key finding of Study 1, that hubristic pride predicts overreporting one's score on an anagram task in response to a status threat, and further suggest that the opportunity to gain status may motivate hubristically proud individuals to lie more so than the opportunity to gain power. However, additional evidence is needed to more clearly support this latter conclusion.

STUDIES 3a, 3b, and 3c

To more clearly determine whether people high in hubristic pride are motivated to cheat for status for its own sake, versus for the sake of ultimately gaining power, we used the same general design as our previous studies but added a new experimental condition in which participants were randomly assigned to either have power over a highly competent partner or be powerless to a highly competent partner, regardless of their own reported score. These two new conditions thus included a status threat and an opportunity to gain status in the eyes of one's partner but, by making explicit that reported scores would not affect power during the partner task, eliminated the possibility that participants would lie about their score in order to gain power. This design therefore allowed us to determine whether hubristically proud people will exaggerate their performance in response to status threats even when the opportunity to attain status *cannot* lead to corresponding gains in power.

Including both these new conditions also allowed us to address several other open questions about the motivation that drives hubristically proud individuals to deceit. When participants are given power over a more-competent partner, they may feel uncomfortable because their leadership is unwarranted, and thus lie to appear more competent and justify their leadership position. Conversely, when participants are made the subordinate to a highly competent partner, they might lie to impress their partner and gain his/her approval. In both these situations, participants would be lying to increase their status by gaining their partner's respect and admiration, but for somewhat different reasons. Thus, if the relationship between hubristic pride and lying differs between these two conditions, it would suggest that hubristically proud individuals respond to status threats differently based on their power in the situation.

Finally, to determine whether observed effects are specific to hubristic pride and not attributable to shared variance with related constructs, we measured the dark triad traits of psychopathy, Machiavellianism, and narcissism, and included these variables as covariates.[9] If hubristic pride predicts overreporting, and this effect is robust to controlling for these covariates, it would suggest that hubristic pride predicts strategic dishonesty in response to status threats independent of shared variance with these other antisocial dispositions.

Studies 3b and 3c included direct replications of conditions from Study 3a, so we again analyzed the data for all three studies in aggregate, using multi-level modelling, to provide a more well-powered test of our hypotheses. Table 2 and SOM5 report results from each study separately.

Method

This study was approved by the Behavioral Research Ethics Board at the University of British Columbia (ID: H17-02025; Name: Pride and dishonest behavior).

Participants.

Study 3a. Six-hundred adults were recruited from Mturk to participate in the current between-subjects study. Following the criteria specified in our pre-registration, 116 participants were excluded from analyses for failing an attention check, 15 for indicating suspicion of the deceptive experimental design, and 15 for receiving actual scores on the anagram task that made it impossible to effectively manipulate partner competence in the leader and subordinate conditions (see SOM2), resulting in a final sample of 454 participants (57% female; age range = 18- 72, Median age = 31 years). In this study, participants were randomly assigned to either the

[9] We report in Table S2 effects of the dark triad traits on overreporting, both with and without controlling for hubristic pride, in all studies where we measured these traits.

leader (*n* = 106)**, subordinate** (*n* = 110)**, power** (*n* = 118)**, or intrinsic motivation condition** (*n* = 120), as described below.

Within the power and intrinsic motivation conditions, we aimed to replicate the interaction between hubristic pride and condition found in Study 2a, such that hubristic pride predicted greater overreporting in the power condition than in the intrinsic motivation condition; we further predicted that this interaction would hold controlling for the dark triad traits. We did not make specific predictions about interactions between hubristic pride and the new leader and subordinate conditions.

Study 3b. Five-hundred adults were recruited from Mturk to participate in the current between-subjects study. Following the criteria specified in our pre-registration, 116 participants were excluded from analyses for failing an attention check, 24 for indicating suspicion of the deceptive experimental design, and 25 for receiving actual scores that made it impossible to manipulate partner competence in the leader and subordinate conditions (see SOM2), resulting in a final sample of 335 participants (59% female; age range = 19- 75, Median age = 34 years). In this study, participants were randomly assigned to either the **leader** (*n* = 118)**, subordinate** (*n* = 100)**, or intrinsic motivation** (*n* = 117) condition, as described below.

Our primary goal in Study 3b was to replicate the interaction between hubristic pride and condition found in Study 3a. Based on the results of Study 3a, we predicted that hubristic pride would be associated with overreporting when participants were randomly assigned to have power over the highly competent partner, but not when powerless to that partner or in the intrinsic motivation condition.

Study 3c. Four-hundred adults were recruited from Mturk to participate in the current between-subjects study. Following the criteria specified in our pre-registration, 96 participants

were excluded from analyses for failing an attention check, 24 for indicating suspicion of the deceptive experimental design, and 18 for receiving actual scores that made it impossible to manipulate partner competence in the leader and subordinate conditions (see SOM2), resulting in a final sample of 262 participants (54% female; age range = 19- 80, Median age = 35 years). In this study, participants were randomly assigned to either the **leader** condition (*n* = 145) or **subordinate condition** (*n* = 117)**.**

Study 3c was conducted to collect more data for the leader and subordinate conditions included in Studies 3a and 3b, to attempt to resolve an inconsistency that emerged between results of those two studies; we pre-registered our plan to conduct analyses on the aggregate data from these three studies to provide a well-powered test of our hypotheses, given the likely small effects. [10] We made the same predictions for this study as we did for Study 3b.

Aggregate Sample

In total, 1500 participants (total *N* after exclusions = 1051) participated in four between-subjects conditions: **intrinsic motivation** (total *N* after exclusions = 237), **power** (total *N* after exclusions = 118), **leader** (total *N* after exclusions = 369), and **subordinate** (total *N* after exclusions = 327). This sample size provided 80% statistical power to detect effect sizes of Cohen's q = .32, q = .24, and q = .24 for the difference in the relationship between hubristic pride and overreporting in the intrinsic motivation condition compared with the power condition, the leader condition, and the subordinate condition, respectively.

Procedure.

[10] In each individual study, we had aimed to have statistical power to detect an even smaller effect size, but subsequently learned that the power analyses we conducted were meant for regression interactions between two continuous variables rather than one continuous (hubristic pride) and one categorical (experimental condition) variable. Thus, we conducted Study 3c to collect more data and conduct analyses on the aggregate data from all three studies. Results are reported separately for the three studies in SOM5. Estimated effect sizes in the reported power analyses are based on those we actually had 80% power to detect in the aggregate data, based on sensitivity analyses conducted after data collected.

Study 3a

As in prior studies, participants believed they were participating in a study investigating how people track their own progress on tasks when working individually and with a partner. They began by completing the Authentic and Hubristic Pride Scales (AHPS; Tracy & Robins, 2007; α = .92 and .87, respectively) and the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988; α = .91 and .91, respectively), both at the trait-level, by reporting how often they generally feel each of the different items. They also completed the Short Dark Triad Scale, which measures the three dark triad traits of psychopathy, Machiavellianism, and narcissism (SD3; Jones & Paulhus, 2014; α = .77, .81, and .73, respectively).

Next, participants were randomly assigned to one of four experimental conditions. Two of these were the **power condition** and **intrinsic motivation condition,** which were identical to those included in Studies 2a and 2b. We also included two new conditions: **leader of a highly competent partner** (henceforth referred to as the "leader condition") and **subordinate to a highly competent partner** (henceforth the "subordinate condition"). In both of these conditions, participants received the same information as in the power condition: they would complete a second task after the anagram task in which one member of their dyad would serve as leader and would receive special privileges, and the other would serve as the subordinate. However, in contrast to the power condition, where participants believed these roles would be awarded based on reporting the highest score, participants in the leader and subordinate conditions believed that these roles would be randomly assigned. To enhance our manipulation in all three conditions, participants learned that the leader would also control the amount of time each partner spent working on the second task.

After receiving their condition-specific information, participants completed the same anagram task as in all previous studies. For participants in the leader condition, before reporting their score they learned that they had "been assigned to the role of LEADER for the upcoming partner task. This means you will divide up the amount of work for the next task between yourself and your partner, the SUBORDINATE, and will send the SUBORDINATE instructions they must follow during the partner task." They were also told that their partner, the subordinate, had reported correctly solving 34 of the 40 anagrams, which placed him/her in the 94th percentile. Similarly, participants in the subordinate condition learned that they had "been assigned to the role of SUBORDINATE for the upcoming partner task. This means the LEADER will divide up the amount of work between yourself and him/herself for the next task and will send you instructions you must follow during the partner task." They were then provided with information identical to that received by participants in the leader condition, that their partner reported correctly solving 34 of the 40 anagrams, which placed him/her in the 94th percentile. Next, participants in both conditions reported the number of anagrams they correctly solved. In the power condition, participants reported their score without any information about their partner's score, as in Studies 2a and 2b. Similarly, in the intrinsic motivation condition participants reported their own score without any information about other participants' scores.

Study 3b

Participants in Study 3b followed the same procedure as those in Study 3a except that they were randomly assigned to one of only three conditions: leader, subordinate, or intrinsic motivation. Reliability was acceptable for all trait measures: authentic pride $\alpha = .91$, hubristic pride $\alpha = .93$, positive affect $\alpha = .91$, negative affect $\alpha = .93$, psychopathy $\alpha = .78$, Machiavellianism $\alpha = .85$, narcissism $\alpha = .76$.

Study 3c

Participants in Study 3c followed the same procedure as those in Studies 3a and 3b except that they were randomly assigned to one of only two conditions: leader or subordinate. Again, reliability was acceptable for all trait measures: authentic pride α = .93, hubristic pride α = .89, positive affect α = .92, negative affect α = .92, psychopathy α = .77, Machiavellianism α = .83, narcissism α = .77.

Results

We first calculated the difference between the number of anagrams participants reported solving and the number they actually solved, such that positive scores indicate that participants reported performing better than they actually did.

Pre-registered analyses. To maximize statistical power, data from all three studies were combined in a multi-level model with observations nested within studies. A fixed effects two-way ANOVA revealed a significant effect of condition on overreporting, $F(3,1020) = 32.65$, $p < .001$, no significant effect of study, $F(2,1020) = 1.38$, $p = .25$, and no significant interaction between condition and study, $F(3,1020) = 1.69$, $p = .17$. Subsequent Welch's t-tests indicated that participants overreported their score to a greater extent in the leader condition, $M = 4.10$, $SD = 6.92$, than in the power condition, $M = -0.81$, $SD = 4.50$, $t(309) = 8.88$, $d = .84$, $p < .001$, 95% CIs:[3.82, 6.00], or the intrinsic motivation condition, $M = -0.17$, $SD = 5.57$, $t(562) = 8.27$, $d = .68$, $p < .001$, 95% CIs:[3.26, 5.29]. Participants in the subordinate condition, $M = 3.29$, $SD = 7.01$, also overreported their scores significantly more than participants in the power condition, $t(324) = 7.18$, $d = .70$, $p < .001$, 95% CI = [2.97, 5.22], or the intrinsic motivation condition, $t(545) = 6.47$, $d = .55$, $p < .001$, 95% CI = [2.41, 4.52]. In other words, participants overreported their scores to a greater extent in those conditions where they faced a highly competent partner

than in those where they either did not know their partner's competence (power condition) or did not believe they had a partner (intrinsic motivation condition). No significant differences emerged between the leader and subordinate conditions, $t(666) = 1.52$, $d = .12$, $p = .13$, or between the power and intrinsic motivation conditions, $t(283) = 1.15$, $d = .13$, $p = .25$.

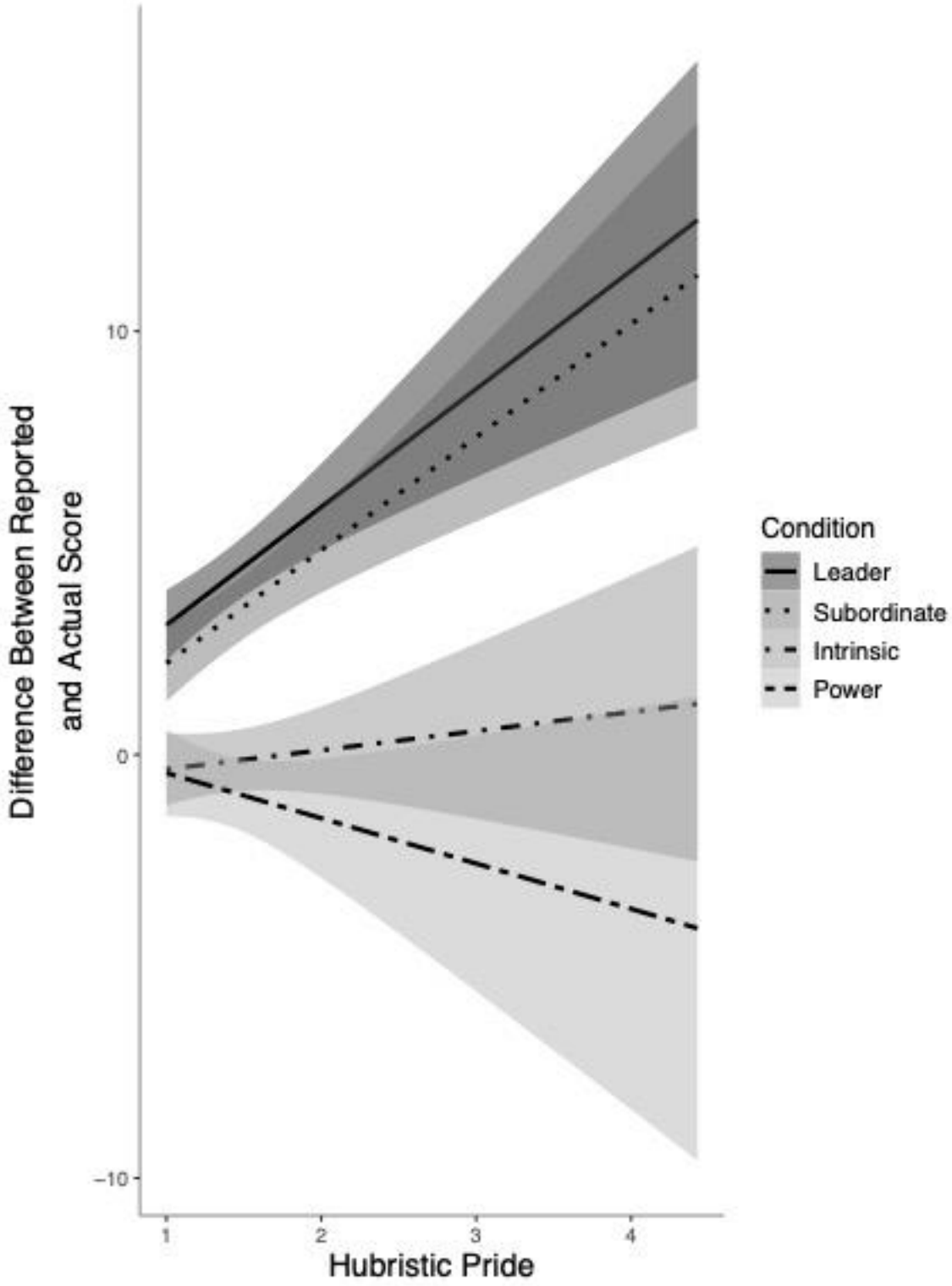
To test our primary hypothesis, random-intercept, random-slope hierarchical regressions were then conducted with observations nested within studies. We found a very small ICC (ICC = .01) indicating extremely little variance in overreporting was due to differences between studies (Lüdecke, 2018). We first ran a regression model in which overreporting was predicted by hubristic pride, condition, and interaction terms between hubristic pride and each condition, with the intrinsic motivation condition serving as the reference group. Two significant interactions emerged, $\beta_{Int\text{-}Leader} = .21$, $t(1021) = 2.64$, $p = .009$, $\beta_{Int\text{-}Subordinate} = .20$, $t(1018) = 2.56$, $p = .01$, suggesting that hubristic pride was associated with significantly greater overreporting in the leader and subordinate conditions than in the intrinsic motivation condition. Hubristic pride was not associated with a greater tendency to overreport one's score in the power condition compared with the intrinsic motivation condition, $\beta_{Int\text{-}Power} = -.11$, $t(1020) = -0.86$, $p = .39$.

Examining the simple slopes for the relation between hubristic pride and overreporting in each of these conditions revealed that hubristic pride predicted reporting to have solved more anagrams than one actually did in the leader condition, $\beta = .25$, $t(1020) = 4.85$, $p < .001$, and in the subordinate condition, $\beta = .23$, $t(1021) = 4.48$, $p < .001$, but not in the intrinsic motivation condition, $\beta = .03$, $t(1021) = 0.52$, $p = .61$, nor in the power condition, $\beta = -.07$, $t(1019) = -0.66$, $p = .51$. Condition-based regression analyses (Humberg et al., 2018) confirmed that the effects in the leader and subordinate conditions are both self-enhancement effects (see Table S3). The

results of this multi-level analysis are depicted in Figure 3, and the results for each individual study can be found in Table 2.

Next, we ran three identical models, each including one of the three dark triad traits, narcissism, psychopathy, and Machiavellianism, and an interaction term between that trait and condition, to test whether the effect of hubristic pride on overreporting is robust to controlling for these related dispositions (Yzerbyt, Muller, Judd, 2004). Consistent with previous research (Tracy et al., 2009), hubristic pride was positively related to each dark triad trait: $r_{Psychopathy}(1049) = .50$, $p < .001$, $r_{Machiavellianism}(1049) = .36$, $p < .001$, $r_{Narcissism}(1049) = .33$, $p < .001$. The interactions between hubristic pride and condition found in the first model largely held controlling for the dark triad traits: narcissism, $\beta_{Int\text{-}Leader} = .17$, $t(1017) = 2.10$, $p = .04$, $\beta_{Int\text{-}Subordinate} = .15$, $t(1017) = 1.76$, $p = .08$; psychopathy, $\beta_{Int\text{-}Leader} = .17$, $t(1017) = 1.87$, $p = .06$, $\beta_{Int\text{-}Subordinate} = .17$, $t(1017) = 1.84$, $p = .07$; Machiavellianism, $\beta_{Int\text{-}Leader} = .15$, $t(1017) = 1.77$, $p = .08$, $\beta_{Int\text{-}Subordinate} = .17$, $t(1017) = 1.99$, $p = .05$.

Figure 3. Interaction between hubristic pride and experimental condition predicting the difference between participants' reported and actual scores on the anagram task, in the aggregate data from Studies 3a-3c.



Notes: The fans around regression lines represent 95% confidence intervals of the predicted values.

Table 2

Relationship (standardized betas) between hubristic pride and overreporting one's score in each condition, separately by study, Study 3.

Study	Condition			
	Intrinsic Motivation	Power	Leader	Subordinate
Study 3a (*n*= 454)	-.05 (-.08)	-.10 (-.11)	.33***$_a$(.17$_a$)	-.001 (-.27*)
Study 3b (*n*= 335)	.11 (.08)	*NA*	.24** (.20*)	.30*** (.20*)
Study 3c (*n*= 262)	*NA*	*NA*	.17 (.11)	.26** (.24*)

* $p < .05$
** $p < .01$
*** $p < .001$
$_a$Significantly different from intrinsic motivation condition, $p < .05$.
Notes. Numbers in parentheses represent the relationships (standardized regression coefficients) between hubristic pride and overreporting one's score in a model controlling for all three dark triad traits.

Discussion

In Study 3 we replicated the finding from Study 2 that hubristic pride does not predict overreporting one's score when participants know they are working alone and therefore social status concerns are irrelevant. We also failed to find a significant relationship between hubristic pride and overreporting one's score in the power condition, suggesting that achieving power during the experiment is not likely to be a salient, proximate motivation that drives hubristically proud individuals to exaggerate their performance on the anagram task. This conclusion is further supported by results from the leader and subordinate conditions, where participants could not have been behaving according to a motivation to attain power because it was made clear to them that their performance would have no bearing on whether they attained power. The finding that hubristically proud individuals still overreported their performance in both of these

conditions indicates that falsely claiming to have solved more anagrams than one actually did is unlikely to be motivated by a conscious desire for power, and that the status threat of interacting with a highly competent partner is a greater motivator of overreporting among hubristically proud individuals. Furthermore, hubristically proud participants lied about their performance to a similar extent in the leader and subordinate conditions, suggesting that the level of power they were assigned prior to experiencing the status threat did not affect the extent to which they overreported their scores in response to it.

We next conducted two supplementary studies to address the potential confound that hubristically proud participants in the power condition might have chosen to report their scores honestly only because they assumed that they had outperformed their partner legitimately, and thus could attain power without deception. As reported in detail in SOM8, findings from these studies, S3 and S4, replicated those of Studies 3a-3c. More specifically, in these supplemental studies, participants were informed of their fictitious partner's score before reporting their own, so they knew exactly how much they had to lie in order to obtain power. Nonetheless, hubristically proud individuals did not overreport their scores above the threshold necessary to attain power; nor did they show any greater tendency to overreport when power was on the line compared to an intrinsic motivation condition. The accumulated evidence therefore suggests that the opportunity to achieve power does not significantly motivate hubristically proud individuals to lie to get ahead.

STUDY 4

Although the results thus far suggest that hubristically proud individuals lie about their competence when they face a status threat, there is an alternative theoretical explanation for the previous studies' findings. In particular, hubristically proud individuals might lie in response to

the mere awareness of their inferiority to another person, regardless of whether they will interact with that individual. If this is the case, then being assigned to work with a highly competent partner would not be a necessary condition to lead hubristically proud individuals to lie; instead, simply knowing that other people who completed the task in the past outperformed them would be sufficient. Addressing this possibility is critical for determining whether hubristic pride activates a willingness to lie or cheat in response to feelings of inferiority in general, or more narrowly after threats to one's status, thus putting in place a mechanism for boosting status when it is in danger. Given that hubristic pride is thought to function to facilitate social rank attainment (Cheng et al., 2010; Tracy et al., 2010), we predicted that individuals high in this emotional disposition would lie significantly more in response to a status threat (i.e., an indication of inferiority that is directly tied to imminent lower status) than to any indication of inferiority.

We tested this hypothesis in Study 4 by assigning participants either to a condition that was nearly identical to the highly competent partner condition used in Studies 1 and 2a or to a new condition in which they were unaware of their partner's score but told that previous participants in the experiment had performed extremely well on the task. We pre-registered the prediction that hubristically proud individuals would lie significantly more when they believed they would be working with a highly competent partner than when they simply knew that highly competent people had participated previously.

Method

This study was approved by the Behavioral Research Ethics Board at the University of British Columbia (ID: H17-02025; Name: Pride and dishonest behavior).

Participants. Five-hundred adults were recruited from Mturk to participate in this study. Following the criteria specified in our pre-registration, 108 participants were excluded from

analyses for failing an attention check, 29 for indicating suspicion of the deceptive experimental design, and 28 for receiving actual scores that made it impossible to manipulate partner/previous participants' competence (see SOM2), resulting in a final sample of 335 participants (58% female; age range = 19- 81, Median age = 34 years). This sample size provided 80% statistical power to detect an effect size of Cohen's q = .31 for the difference in the relationship between hubristic pride and overreporting one's score between conditions.

Procedure. As in Studies 1-3c, participants believed they were participating in a study investigating how people track their own progress on tasks when working individually and with a partner. They began by completing the Authentic and Hubristic Pride Scales (AHPS; Tracy & Robins, 2007; α = .93 and .92, respectively) and the Positive & Negative Affect Schedule (PANAS; Watson et al., 1988; α = .92 and .92, respectively), both at the trait-level, by reporting how often they generally feel each of the different items. They also completed the Short Dark Triad Scale, which measures the three dark triad traits of psychopathy, Machiavellianism, and narcissism (SD3; Jones & Paulhus, 2014; α = .81, .83, and .82, respectively). Next, participants were randomly assigned to one of two experimental conditions: **aware of highly competent performers** (henceforth referred to as the "aware of" condition; n = 171) or **working with a highly competent partner** (henceforth referred to as the "working with" condition; n = 164).

As in Study 1, participants in both conditions were informed that they would be paired with another MTurk participant to complete a collaborative task later on in the study. Unlike in Study 1, however, prior to completing the anagram task participants were given information about previous participants' performance on the anagram task. In the "aware of" condition, participants were told that "on average, people tend to correctly solve around 21 of the 40 anagrams, and the top performers correctly solve around 34 of the 40 anagrams". Next, these

participants completed the anagram task and reported their score without seeing any information about their partner's score. In the "working with" condition, prior to the anagram task participants were also informed that the average participant tends to correctly solve about 21 anagrams (this information was provided to keep the two conditions as similar as possible), but they did not read the information about top performers. Next, these participants completed the anagram task, learned that their partner had correctly solved 34 of the 40 anagrams, placing him/her in the 94th percentile of performance on the task, and then reported their own score.

Results

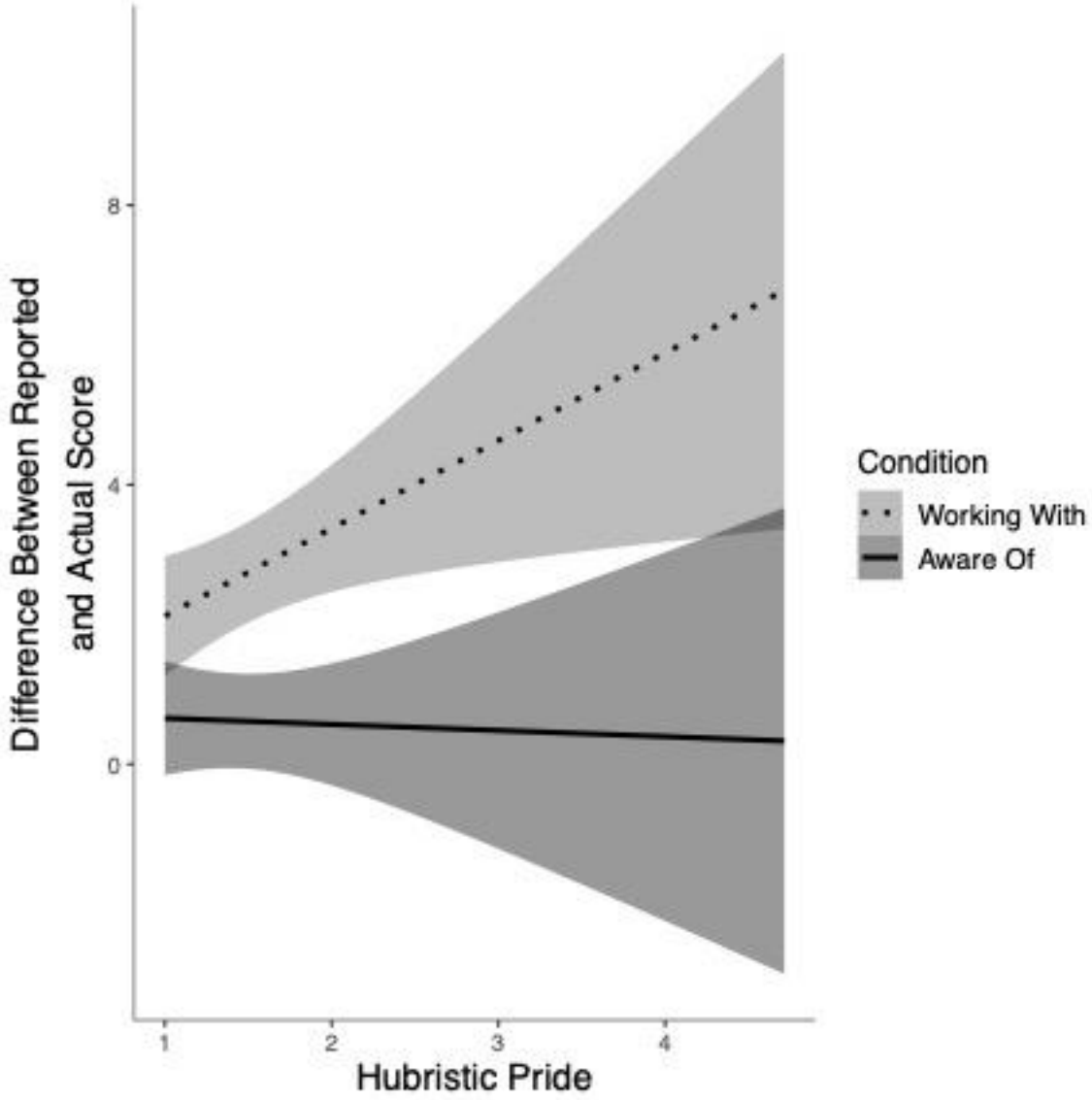
We first calculated the difference between the number of anagrams participants reported solving and the number they actually solved, such that positive scores indicate that participants reported performing better than they actually did. A fixed effects one-way ANOVA revealed a significant effect of condition on overreporting, $F(1,320) = 16.87$, $p < .001$. A subsequent Welch's t-test indicated that participants lied about their score to a greater extent in the "working with" condition, $M = 2.69$, $SD = 4.72$, than in the "aware of" condition, $M = .62$, $SD = 4.31$, $t(319) = 4.11$, $d = .46$, $p < .001$, 95% CI = [1.08, 3.06].

Pre-registered Analyses. We next conducted a regression analysis in which overreporting was regressed onto hubristic pride, condition, and an interaction term between hubristic pride and condition, with the "aware of" condition as the reference group. A non-significant interaction emerged, $\beta_{Aware\ Of\text{-}Working\ With} = .20$, $t(318) = 1.85$, $p = .065$. However, given that we had pre-registered our prediction that an interaction would emerge, and it approached significance in the hypothesized direction, we moved forward to examine the simple slopes for the relation between hubristic pride and overreporting in each condition. Hubristic pride predicted falsely overclaiming in the "working with" condition, $\beta = .19$, $t(318) = 2.50$, $p = .01$, in

which participants were directly faced with a highly competent partner, but not in the "aware of" condition, β = -.01, $t(318) = -0.17$, $p = .87$, in which participants were faced with a partner of unknown competence but made aware that high performers had completed the task previously (see Figure 4). Condition-based regression analyses (Humberg et al., 2018) confirmed that the effect in the "working with" condition was due to self-enhancement (see Table S3).

We next ran three identical models, each including one of the three dark triad traits and an interaction term between that dark triad trait and condition, to test whether the observed effect of hubristic pride on overreporting held controlling for these related traits (Yzerbyt et al., 2004). The interaction between hubristic pride and condition was essentially unchanged when controlling for Machiavellianism, $\beta_{Aware\ Of\text{-}Working\ With} = .22$, $t(316) = 1.92$, $p = .06$, narcissism, $\beta_{Aware\ Of\text{-}Working\ With} = .15$, $t(316) = 1.25$, $p = .21$, and psychopathy, $\beta_{Aware\ Of\text{-}Working\ With} = .18$, $t(316) = 1.36$, $p = .18$.

Figure 4. Relation between hubristic pride and overreporting scores on the anagram task within each condition, Study 4.



Notes: The fans around regression lines represent 95% confidence intervals of the predicted values.

Discussion

In Study 4, we tested an alternative explanation for the relationship between hubristic pride and overreporting when paired with a highly competent partner. Consistent with results from the highly competent partner conditions in Studies 1 and 2a, hubristically proud participants tended to overreport their performance in the "working with" condition, where they believed that

they, personally, would interact with a highly competent partner. However, they were not significantly more likely to overreport their score in this condition compared to the "aware of" condition, in which they were simply made aware that highly competent others had outperformed them in the past. In this latter condition, individuals high in hubristic pride were no more likely than those low in the disposition to overreport their scores. Thus, consistent with our hypothesis, hubristically proud individuals did not tend to lie in response to an indication of inferiority when it did not threaten their status during the partner task. That said, it is noteworthy that we inadvertently neglected to explicitly tell participants, in both conditions, that the average score and top-performer score of past participants were based on actual scores, so some participants might have assumed these numbers represented reported scores that could have been overclaimed. It is unclear how this would affect results, but one possibility is that participants who assumed the information about past participants' performances was exaggerated would experience a reduced threat.

To summarize the seven studies conducted thus far, when taken in aggregate they suggest that hubristically proud individuals use strategic dishonesty to appear more competent than they actually are, but only after experiencing a status threat such as being paired with a highly competent partner. Although this finding emerges fairly robustly from these studies, there were several notable limitations. First, across all studies participants completed the same anagram task, raising the possibility that something specific about that particular task may be responsible for this pattern of results found. Second, in all studies status threat was manipulated by showing participants their partner's high score, and this procedure may have unintentionally given them a score to use as an anchor when reporting their own score (see Tversky & Kahneman, 1974). It is therefore possible that hubristically proud individuals reported higher scores when facing a high-

scoring partner not because they were intentionally lying to self-enhance, but because they are more susceptible to anchoring effects than individuals low in hubristic pride. To address both of these limitations, in Study 5 we used a different task: one that also allowed us to examine whether individuals high in hubristic pride are more strongly influenced by anchoring effects than are those low in hubristic pride.

STUDY 5

In Study 5, instead of completing an anagram task, participants completed a number estimation task in which they were asked to estimate various unknowable quantities. This task was adapted from tasks used in prior research on anchoring-and-adjustment processes (Jacowitz & Kahneman, 1995; Tversky & Kahneman, 1974). If hubristically proud individuals are more susceptible to anchoring effects than people low in hubristic pride, their estimates should be significantly closer to the provided anchor compared to individuals low in hubristic pride, and this could provide an alternative explanation for the pattern observed across studies in conditions where participants reported their scores after viewing those of (fictitious) high performers. However, given that hubristic pride has not been linked to any cognitive deficits in past research, we did not expect to see a heightened tendency to anchor onto the reference values during the estimation task. A finding along these lines would bolster our interpretation that hubristically proud individuals were intentionally lying when they overreported their scores to a highly competent partner in the previous studies.

After completing the estimation task, participants were informed of their partner's score, then asked to report their own score, as in prior studies. We adapted the highly competent partner and incompetent partner conditions from Study 1 to fit this new task. Based on the results of the prior studies, we predicted that individuals high in hubristic pride would report higher scores

than they actually obtained when they believed they had been assigned to work with a highly competent partner, but not when assigned to work with an incompetent partner. Notably, this design also allowed us to further explore the unexpected significant relation that emerged in Study 1 between hubristic pride and *underreporting* one's score in response to seeing the score of an incompetent partner.

Study 5 also included measures to assess the validity of the status threat manipulations used here and in all of the prior studies. Specifically, we examined whether participants viewed their partner in the highly competent partner condition as high in status and threatening.

Method

This study was approved by the Behavioral Research Ethics Board at the University of British Columbia (ID: H17-02025; Name: Pride and dishonest behavior).

Participants. Seven-hundred fifty adults were recruited from Mturk to participate in this study. Based on the same criteria as our prior studies, 237 participants were excluded from analyses for failing an attention check, and another 31 were excluded for indicating suspicion of the deceptive experimental design, resulting in a final sample of 482 participants (43% female; age range = 18- 77, Median age = 35 years). This sample size provided 80% statistical power to detect an effect size of Cohen's q = .26 for the difference in the relationship between hubristic pride and overreporting one's score between conditions.

Procedure. As in Studies 1 through 4, participants were informed that they would be participating in a study investigating how people track their own progress on tasks when working individually and with a partner. They began by completing the Authentic and Hubristic Pride Scales (AHPS; Tracy & Robins, 2007; α = .92 and .92, respectively) and the Positive & Negative Affect Schedule (PANAS; Watson et al., 1988; α = .92 and .94, respectively), both at the trait-

level, by reporting the extent to which they generally feel each item. They also completed the Short Dark Triad Scale, which measures the three dark triad traits of psychopathy, Machiavellianism, and narcissism (SD3; Jones & Paulhus, 2014; α = .82, .85, and .81, respectively).

Next, participants completed an estimation task that was adapted from previous research on anchoring and adjustment (Jacowitz & Kahneman, 1995; Tversky & Kahneman, 1974). In this task, participants estimated ten quantities, such as the length of the Mississippi River and the average number of babies born in America per day in 2018. Following Tversky and Kahneman (1974), prior to making each estimate, participants responded to a yes-or-no question that anchored them to a particular number (e.g., Is the Mississippi River longer than 100 miles?). After making each estimate, participants were told the correct answer and given instructions about how to score their response, based on its deviation from the correct answer. Specifically, estimates within 20% of the correct answer were worth 2 points, estimates within 40% of the correct answer were worth 1 point, and estimates more than 40% away from the correct answer were worth zero points. To make this clear to participants, after answering the question about the Mississippi River, for example, they saw their estimate, the correct answer (2348 miles), the range of estimates worth 2 points (1878-2818 miles), and the range of estimates worth 1 point (1408-3318 miles). If their estimate fell outside of the 1-point range, they were told to give themselves 0 points for that question. After assigning themselves points for each question, participants moved on to the next one until they had completed all ten questions. All participants thus completed the task with a final score between 0-20 points.

Immediately after completing this task, participants were randomly assigned to one of two experimental conditions: a **highly competent partner** (n = 239) or an **incompetent partner**

condition (*n* = 243). In the highly competent partner condition, participants saw that their partner reported earning 17 points, which placed him/her in the 94th percentile of performance. In the incompetent partner condition, participants saw that their partner reported earning 4 points, which placed him/her in the 16th percentile of performance. To ensure that participants understood the meaning of their partner's percentile score (a potential limitation of the prior studies manipulating partner competence), they were also given the following information: "this means that your partner did better than about 93% (15%) of people who have done this task before". Participants then reported their own score on the estimation task.

After reporting their score, participants reported their impressions of their partner. To measure perceived status, we asked participants to rate how "high-status" they believed their partner to be, how much they "respected" their partner, and how much they "admired" their partner. These items were drawn from previous research assessing status perceptions (Anderson, Kraus, Galinsky, & Keltner, 2012; Bai, Ho, & Yan, 2019; Hays & Benderesky, 2013; Kilduff & Galinsky, 2013). We averaged responses to these three items to create an index of perceived partner status ($\alpha = .76$). To measure the extent to which participants viewed their partner as a threat, we next asked them to report how "dominant" they believed their partner to be, how much they were "intimidated" by their partner, and how "afraid" they were of their partner. These items were drawn from previous research on social dominance (Cheng, Tracy, & Henrich, 2010). We averaged responses to these three items to create an index of perceived threat ($\alpha = .73$). All items were completed on a five-point Likert scale from "1 Not at all" to "5 Extremely". Finally, participants reported demographic information before being thanked and debriefed.

Results

Are hubristically proud individuals more susceptible to anchoring effects?

We first tested whether hubristically proud individuals showed greater anchoring than people low in hubristic pride. To do so, we took the absolute value of the distance of each participant's estimate from the provided anchor, standardized that distance within each question, and averaged these scores across the 10 questions to create an index of participants' average deviation from the anchor value for the overall task. Given that all raw scores were positive numbers, low scores reflect less distance from the anchor in either direction. Examining the relation between this variable and hubristic pride, we found a small but statistically significant positive correlation, $r(478) = .09$, $p = .04$, suggesting that those higher in hubristic pride made estimates slightly *farther* from the provided anchors than people low in hubristic pride. However, given that the critical dependent variable here was a free response, some participants' estimates were clearly nonsensical and extremely far from the vast majority of estimates, so we next excluded all responses greater than five standard deviations from the anchor prior to standardizing distance scores within each question. After doing so, the correlation with hubristic pride was reduced to $r(478) = .06$, $p = .18$. Regardless of whether these very small positive correlations are meaningful, this result rules out the possibility that hubristically proud individuals are more susceptible to anchoring effects, as that would have suggested a *negative* correlation.

Did hubristically proud participants overreport their score when faced with a highly competent partner?

We calculated the difference between the number of points participants reported earning and the number they actually earned, such that positive scores indicate the extent to which participants reported performing better than they actually did. Replicating the results of prior studies, a fixed effects one-way ANOVA revealed a significant effect of condition on

overreporting, $F(1,478) = 17.72$, $p < .001$. A subsequent Welch's t-test indicated that participants overreported their scores to a much greater extent in the highly competent partner condition, $M = 7.09$, $SD = 23.75$, than in the incompetent partner condition, $M = .61$, $SD = 2.75$, $t(244) = 4.19$, $d = .38$, $p < .001$, 95% CI = [3.44, 9.53].

We next tested our hypothesis that hubristically proud individuals would overreport their scores to a greater extent in the highly competent partner condition than in the incompetent partner condition. To do so, we conducted a multiple regression analysis in which overreporting was regressed onto hubristic pride, condition, and an interaction term between hubristic pride and condition, with the incompetent partner condition as the reference group. We observed a significant interaction between hubristic pride and condition, $\beta_{IP\text{-}HCP} = .33$, $t(476) = 3.82$, $p < .001$, suggesting that hubristic pride was associated with significantly greater overreporting when participants believed they would work with a highly competent partner than when they believed they would work with an incompetent partner. Examining the simple slopes for the relation between hubristic pride and overreporting in each condition revealed that hubristic pride predicted falsely overclaiming in the highly competent partner condition, $\beta = .38$, $t(476) = 6.16$, $p < .001$, but not in the incompetent partner condition, $\beta = .04$, $t(476) = 0.71$, $p = .48$. Condition-based regression analyses (Humberg et al., 2018) confirmed that the effect in the highly competent partner condition was due to self-enhancement effect (see Table S3).

We next ran three identical models, each including one of the three dark triad traits, and an interaction term between that trait and condition (Yzerbyt et al., 2004). The interaction between hubristic pride and condition held controlling for each of the dark triad traits: narcissism, $\beta = .32$, $t(474) = 3.20$, $p = .001$; psychopathy, $\beta = .38$, $t(474) = 3.26$, $p = .001$; Machiavellianism, $\beta = .38$, $t(474) = 3.76$, $p < .001$.

Exploratory analyses. The very large standard deviation in reported scores in the highly competent partner condition (23.75) suggests that some participants in that condition reported scores greater than 20, which was the maximum number of points that could be earned. We therefore further explored the data to ensure that results were not driven by a small number of participants reporting such extreme scores. Ten participants in the highly competent partner condition reported scores greater than 20 on the estimation task; these ranged from 80 to 250 points. Interestingly, no participants in the incompetent partner condition reported a score above 20, and the participants who reported extreme scores in the highly competent partner condition were significantly higher in hubristic pride, $M = 2.75$, $SD = 1.09$, than the rest of the sample, $M = 1.63$, $SD = 0.84$, $t(9) = 3.22$, $d = 1.15$, $p = .01$, 95% CI = [0.34, 1.90]. Given that all of these participants passed multiple attention checks and were all in the same experimental condition, it seems unlikely that these extreme scores represent random responding on the critical dependent variable.

Nonetheless, we next conducted the same analyses as above excluding these 10 participants. In this exploratory analysis, the interaction between hubristic pride and condition became non-significant, $\beta_{IP\text{-}HCP} = .14$, $t(466) = 1.66$, $p = .09$. Examining the simple slopes for the relation between hubristic pride and overreporting in each condition revealed that hubristic pride predicted falsely overclaiming one's score in the highly competent partner condition, $\beta = .31$, $t(466) = 4.91$, $p < .001$, and also in the incompetent partner condition, $\beta = .17$, $t(466) = 2.76$, $p = .006$.

It is surprising that removing participants from the highly competent partner condition affected the relationship between hubristic pride and overreporting one's score *in the incompetent partner condition* more dramatically than in the highly competent partner condition,

so we further explored the data in this condition. Doing so revealed that the estimation task was much more difficult than we had expected; 127 participants in the incompetent partner condition (52%) earned fewer points on the task than the incompetent partner's score of 4 points. We therefore conducted a regression analysis within the incompetent partner condition regressing overreporting onto hubristic pride, a dummy variable coded to represent whether participants scored above or below the incompetent partner (i.e., earned 3 or fewer points vs. 4 or more points), and an interaction term between hubristic pride and this dummy variable with those who scored above the partner as the reference group. This analysis revealed a significant interaction, $\beta_{Above\ Partner\text{-}Below\ Partner} = .29$, $t(237) = 2.18$, $p = .03$, suggesting that hubristic pride was associated with significantly greater overreporting for participants who scored below the fake partner than for those who scored above the fake partner. Examining the simple slopes for the relation between hubristic pride and overreporting for participants who scored below the partner in that condition revealed that hubristic pride predicted falsely overclaiming, $\beta = .34$, $t(237) = 4.44$, $p < .001$, but this was not the case for those who scored above the fake partner, $\beta = .05$, $t(237) = 0.47$, $p = .64$. Condition-based regression analyses (Humberg et al., 2018) confirmed that the effect for those who scored below their partner was due to self-enhancement (see Table S3).

We next removed participants in the incompetent partner condition who scored below their partner (as well as the 10 participants who reported extreme scores in the highly competent partner condition), and re-ran the original analysis which regressed overreporting onto hubristic pride, experimental condition, and the interaction between hubristic pride and condition. We again found a significant interaction, $\beta = .31$, $t(349) = 2.53$, $p = .01$, indicating that, consistent with our hypothesis, hubristically proud participants overreported their scores significantly more in the highly competent partner condition. In contrast, hubristically proud participants in the

incompetent partner condition (who performed equal to or better than the fake partner) did not show this tendency, β = .01, $t(349) = 0.06$, p = .95.

It is important to note that the incompetent partner condition created similar psychological demands for participants who scored below the fake incompetent partner, in terms of status threat, as the highly competent partner condition was designed to do. Indeed, within the incompetent partner condition, participants who scored below the fictitious partner saw their partner as significantly higher status, M = 3.01, SD = 0.90, than those who scored above the partner, M = 2.75, SD = .80, $t(241) = -2.40$, d = .31, p = .02, 95% CI = [-0.47, -0.05], and also as significantly more threatening, M = 2.07, SD = 0.99, than those who scored above the partner, M = 1.63, SD = .70, $t(226) = -4.04$, d = .51, $p < .001$, 95% CI = [-0.66, -0.23].

As a final analysis, we collapsed data across both conditions and created a new variable representing whether participants scored above or below the fake partner, regardless of assigned condition. We then ran the same regression analysis as above with this variable, and found a significant interaction, $\beta_{Above\text{-}Partner\text{-}Below\ Partner}$ = .25, $t(476) = 2.10$, p = .04, indicating that hubristically proud participants who scored below their fake partner overreported their scores to a significantly greater extent, β = .25, $t(476) = 5.12$, $p < .001$, than those who scored above their fake partner, β = -.002, $t(476) = -0.20$, p = .98. In summary, although we failed to adequately manipulate incompetence in the incompetent partner condition, examining the results in regard to whether participants scored above or below their fake partner showed that hubristically proud individuals who scored below were more likely to claim that they had scored higher than they actually did, and conversely, those who faced a partner they had outperformed tended to report their scores accurately.

Validity of status threat manipulation

We next examined the validity of our manipulation of status threat, used here and in the prior studies that included a highly competent partner condition, by testing whether participants faced with the prospect of working with a highly competent partner viewed their partner as higher status and more threatening than those who expected to work with an incompetent partner. In the analyses below, we included all participants in the incompetent partner condition, regardless of whether they performed better or worse than the fictitious partner's score of four points. We compared participants' perceptions of their partner's status between the two conditions. Results revealed that highly competent partners, $M = 3.37$, $SD = 0.92$, were rated as significantly higher in status than incompetent partners, $M = 2.89$, $SD = 0.86$, $t(476) = 5.97$, $d = .54$, $p < .001$, 95% CI: = [0.33, 0.64], and this difference held for each individual item as well. Given that social status is relative by nature, this finding suggests that the prospect of working with a highly competent partner was likely viewed by participants as a threat to their potential status, more so than was working with an incompetent partner. Furthermore, the finding that participants reliably made status attributions of partners on the basis of the scores these partners reported, with no other information provided, suggests that participants viewed reporting a high score on the estimation task as indicative of high status, and thus that lying about one's own score might be considered a viable status acquisition strategy.

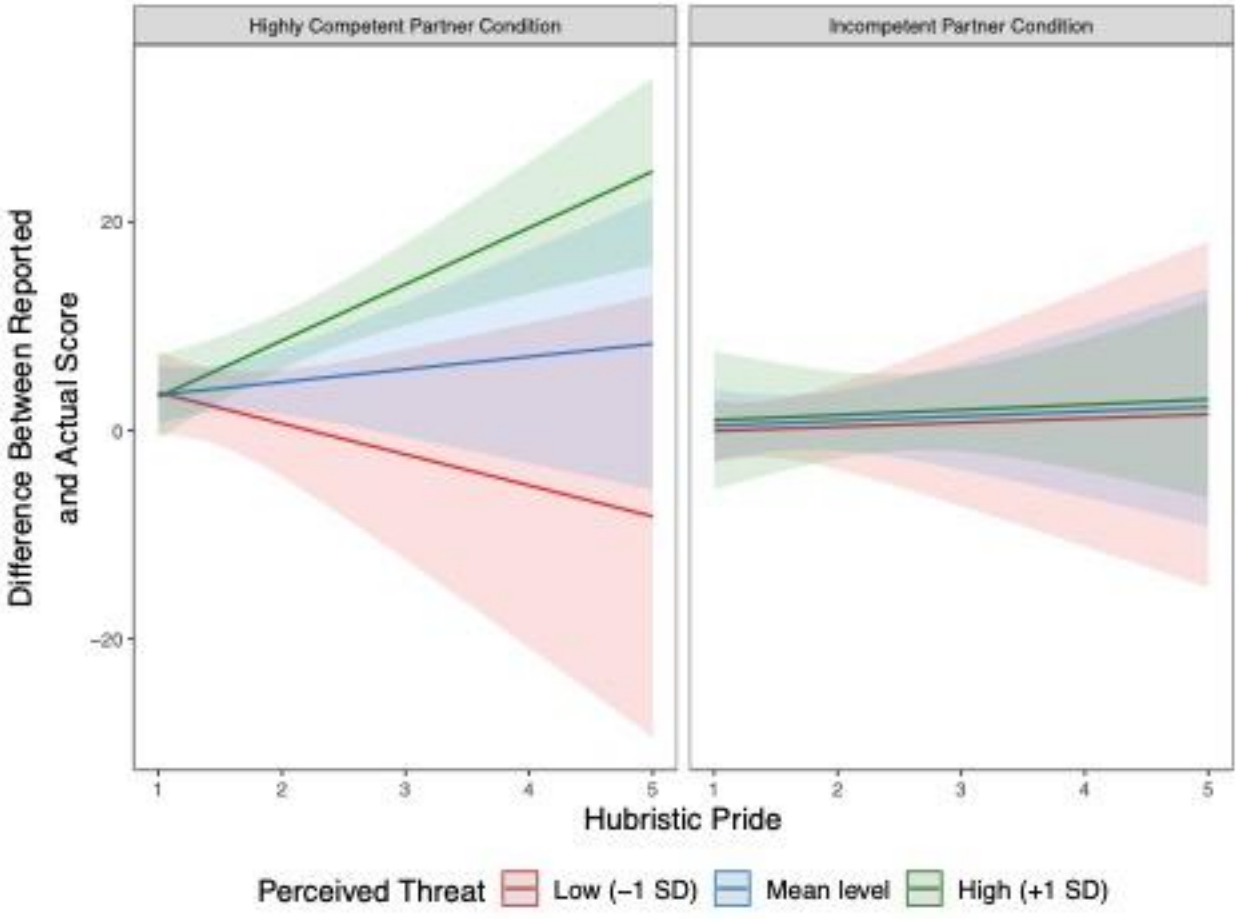
Next, we tested whether participants viewed the highly competent partner as a greater threat than the incompetent partner by comparing participants' perceptions of threat between the two conditions. Results showed that participants saw the highly competent partner as significantly more threatening, $M = 2.41$, $SD = 0.95$, than the incompetent partner, $M = 1.86$, $SD = 0.89$, $t(477) = 6.57$, $d = 0.60$, $p < .001$, 95% CI = [0.39, 0.71].

Finally, we aimed to test the claim that hubristically proud individuals lie to the extent that they feel threatened by a highly competent partner. To do so, we conducted a regression analysis in which overreporting was regressed onto hubristic pride, perceived threat of the partner, experimental condition, two-way interaction terms between each combination of these variables, and a three-way interaction term between all of these variables. Results revealed a significant three-way interaction, β = -.21, t(472) = -2.52, p = .01, indicating that the interaction between hubristic pride and threat differed between conditions. Within the highly competent partner condition, we found an interaction between hubristic pride and perceived threat, β = .21, t(472) = 3.52, p < .001, indicating that hubristically proud participants in this condition overreported their score to a greater extent the more that they felt threatened by their partner (see Figure 5). In contrast, in the incompetent partner condition, there was no interaction between hubristic pride and threat predicting overreporting, β = .003, t(472) = 0.04, p = .96. We then ran this same analysis but replaced experimental condition with the dummy variable representing whether participants scored above or below whichever partner they expected to interact with. Consistent with the results found for experimental condition, a significant interaction emerged between hubristic pride and threat for participants who scored below their fake partner, β = .11, t(472) = 2.41, p = .02, and no interaction between hubristic pride and threat for participants who scored above their fake partner, β = -.01, t(472) = -0.08, p = .94. However, the three-way interaction was not significant, β = -.12, t(472) = -0.89, p = .38, indicating that these two relationships are not significantly different from each other.

These results suggest that hubristically proud individuals lied to appear more competent as a response to feeling threatened by a highly competent partner, but did not do so in response to any feelings of threat they experienced from interacting with an incompetent partner, whom

they judged as lower in status and less threatening. These findings therefore validate our assumption that the overreporting of one's score observed among hubristically proud individuals in the highly competent partner condition—here, and, in all likelihood, our prior studies as well—was associated with perceptions that their highly competent partner was threatening. That said, we did not plan for this sample size to provide sufficient power to detect three-way interactions, so these results should be interpreted with caution until replicated in a well-powered sample.

Figure 5. Three-way interaction between hubristic pride, perceived threat from partner, and experimental condition predicting the difference between participants' reported and actual scores on the estimation task, Study 5.



Discussion

In Study 5, we addressed several outstanding limitations of the prior studies. First, we replicated the finding that hubristically proud individuals lie to appear more competent than they actually are in response to a status threat, and we did so using a different task from the prior studies, demonstrating that this effect cannot be attributed to something specific about the anagram ask. This new task also had another advantage: it allowed us to conclude that hubristically proud individuals are not more susceptible to anchoring effects than individuals low in hubristic pride, arguing against the possibility that these individuals misrepresented their scores for some reason other than intentional deception, in this and the prior studies. Moreover,

this task required participants to pause after each question to score their performance, which should have made it easier to accurately calculate and remember their actual score. As a result, we can more reliably infer that inaccurate reporting of scores represents intentional lying.

We also found that hubristically proud individuals were unlikely to lie about their scores when working with a partner who performed worse than they did. This result is consistent with Study S1 (reported in SOM6), which directly replicated the methods used in the incompetent partner condition in Study 1. To further address the inconsistency among these three studies that included a similar "incompetent partner" condition, we conducted an internal meta-analysis of results from the incompetent partner condition in Study 1, Study S1, and the incompetent partner condition in Study 5. We did so excluding participants from Study 5 who scored below their fake partner and therefore were not comparable to participants in the prior two studies who all scored above their fake partner (total *N* across the three studies = 446).[11] This meta-analysis revealed a null effect of hubristic pride on overreporting when participants faced a partner who had performed worse than them, $r = -.01$, $p = .89$, suggesting that the trend for hubristically proud individuals to underreport in this condition, observed in Study 1, is not replicable and very likely to be spurious.

We also found that participants expecting to work with a highly competent partner viewed this individual as substantially higher in status and more threatening than did those expecting to work with an incompetent partner, validating our assumption that the highly competent partner condition, compared to the incompetent partner condition, promoted a belief that participants would be unlikely to have high status in their dyad, and were threatened by this situation. This finding is consistent with a large body of previous research demonstrating that

[11] In the former two studies, very few participants scored below the fake partner on the anagram task, and these participants were excluded prior to data analysis as detailed in the pre-registrations for those studies.

competence and intelligence are seen as reliable cues to social status (Anderson, Brion, Moore, & Kennedy, 2012; Anderson, Hildreth, & Howland, 2015; Bitterly, Brooks, & Scweitzer, 2014; Lukaszewski, Simmons, Anderson, & Roney, 2016; Van Vugt, 2006). Using these validity measures, we also found that hubristically proud participants' feelings of threat elicited by their highly competent partner moderated the relationship between hubristic pride and lying, such that these individuals lied more to the extent they felt threatened.

Internal Meta-Analyses

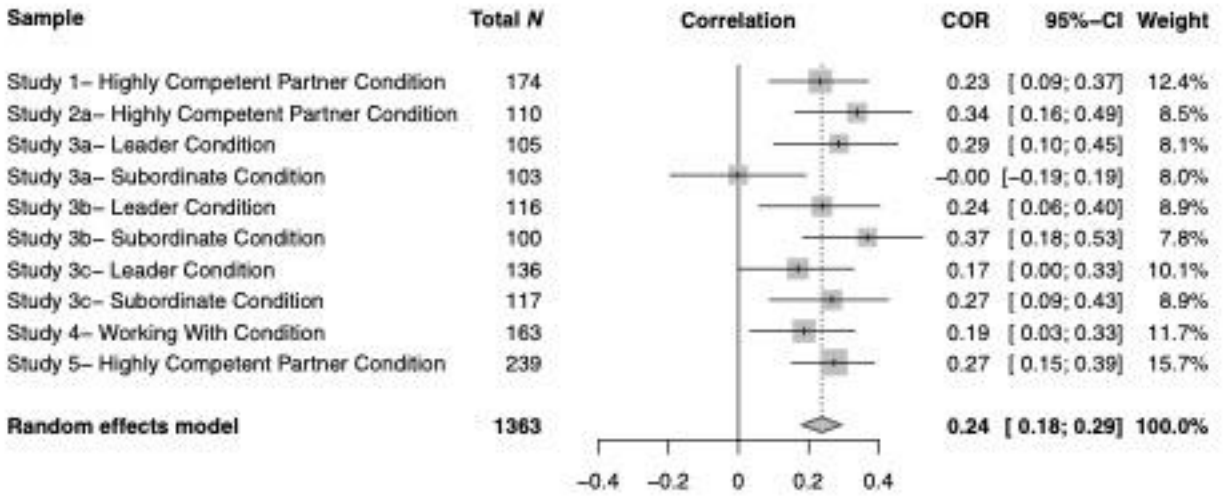
We next conducted two meta-analyses to best estimate the size of the effects found across all eight studies in the main text, as well as two supplemental studies reported in the SOM.[12] First, we conducted an internal meta-analysis of all conditions in which participants experienced a status threat from the prospect of working with a highly competent partner. This meta-analysis included the highly competent partner conditions in Studies 1 and 2a, the leader and subordinate conditions from Studies 3a-3c, the "working with" condition in Study 4, and the highly competent partner condition in Study 5; total $N = 1363$. We used the meta() package (Schwarzer, 2007) in the statistical software R (R Core Team, 2017) to calculate the meta-analytic correlation coefficient between hubristic pride and dishonesty in this condition in each study. This meta-analysis revealed a significant, medium-sized positive relationship between hubristic pride and dishonesty, $r = .24$, $p < .001$, 95% CI = [.18, .29]; see Figure 6. Next, to address the overlap between hubristic pride and the dark triad traits, we conducted three meta-analyses on the data from these same conditions, this time to determine the partial correlation between hubristic pride and overreporting following a status threat after removing shared variance with each dark triad

[12] We did not include data from Study S2 in these meta-analyses due to several indications of poor data quality (see SOM7). However, we did subsequently conduct versions of these meta-analyses with the Study S2 data included, and in both cases the overall meta-analytic effects do not change significantly: with a status threat present: $r = .21$, $p < .001$, 95% CI = [.14, .27]; with no status threat: $r = .05$, $p = .14$, 95% CI = [-.02, .12].

trait. In all three cases, a significant relationship between hubristic pride and overreporting emerged; controlling for narcissism, $r = .15$, $p < .001$, 95% CI = [.07, .23], for Machiavellianism, $r = .18$, $p < .001$, 95% CI = [.10, .26], and for psychopathy, $r = .15$, $p < .001$, 95% CI = [.08, .22].

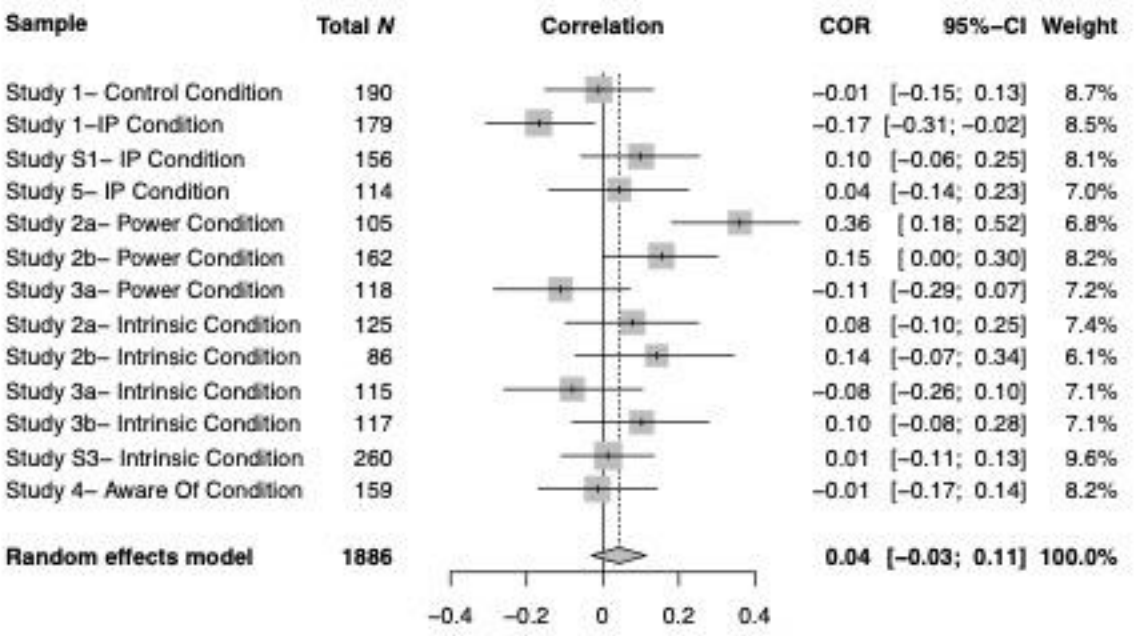
We next conducted a similar meta-analysis including data from all conditions where participants did not face a status threat. This meta-analysis included data from the control condition in Study 1, the incompetent partner conditions from Studies 1, S1, and 5 (only participants who scored equal to or above their fake partner), the power conditions from Studies 2a, 2b, and 3a, the intrinsic motivation conditions from Studies 2a, 2b, 3a, 3b, and S3, and the "aware of" condition from Study 4; total $N = 1886$. This meta-analysis revealed a null relationship between hubristic pride and dishonesty across these conditions, $r = .04$, $p = .25$, 95% CI = [-.03, .11]; see Figure 7. As shown by comparing the confidence intervals around both meta-analytic effects, this relationship was significantly smaller than the relationship between hubristic pride and overreporting when participants faced a status-threat. Table 3 shows the relation between hubristic pride and overreporting in all conditions, across all studies.

Figure 6. Forest plot of the estimated relationship between hubristic pride and overreporting one's score based on an internal meta-analysis of all conditions where participants reported their score to a highly competent (fictitious) partner (i.e., status threat present).



Note. The vertical line represents the estimated effect, the grey box represents the weight of each sample in the meta-analysis, and the horizontal line shows the 95% confidence interval.

Figure 7. Forest plot of the estimated relationship between hubristic pride and overreporting one's score based on an internal meta-analysis of all conditions where participants did not report their score to a highly competent (fictitious) partner (i.e., no status threat present).



Note. The vertical line represents the estimated effect, the grey box represents the weight of each sample in the meta-analysis, and the horizontal line shows the 95% confidence interval.
IP = Incompetent partner.

Table 3

Effect of hubristic pride on overreporting in each condition, Studies 1-5.

Study	Condition	Sample Size	Condition Description	Relationship between hubristic pride and overreporting	Relationship between hubristic pride and overreporting controlling for the dark triad traits
Study 1	Highly Competent Partner	174	Participants told they will work collaboratively with a highly competent partner	.20**	NA
	Control	190	Participants told they will work collaboratively with an unknown partner	-.01	NA
	Incompetent Partner	179	Participants told they will work collaboratively with an incompetent partner	-.15^	NA
Study 2a	Highly Competent Partner	110	See above	.42***	NA
	Power	109	Participants told that whoever reports a higher score will become the leader	.34***	NA
	Intrinsic Motivation	129	Participants know they are working alone	.06	NA
Study 2b	Power	165	See above	.15*	NA
	Intrinsic Motivation	92	See above	.16	NA
Study 3a	Leader of a Highly Competent Partner (aka "Leader")	106	Participants told they will be the leader of a highly competent partner	.33***	.28***
	Subordinate to a Highly Competent	110	Participants told they will be the subordinate to a highly competent partner	.01	-.09

	Partner (aka "Subordinate")				
	Power	118	See above	-.10	-.20^
	Intrinsic Motivation	120	See above	-.05	-.10
Study 3b	Leader	118	See above	.26**	.18^
	Subordinate	100	See above	.29***	.24**
	Intrinsic Motivation	117	See above	.11	.05
Study 3c	Leader	145	See above	.17^	.13
	Subordinate	117	See above	.26**	.19*
Study 4	Working with a Highly Competent Partner	164	Same as highly competent partner condition, but participants also told the average score on the anagram task	.19*	.10
	Aware of Highly Competent Performers	171	Participants told about top performers in past studies, but given no information about their partner	-.01	-.11
Study 5	Highly Competent Partner	239	See above	.38***	.41***
	Incompetent Partner	243	See above	.04	.08

^ $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$
Notes: Relationships are represented in terms of standardized regression coefficients. Overreporting refers to the difference between participants' reported score and actual score on the anagram task.

GENERAL DISCUSSION

The present research is the first to examine the situational factors that elicit dishonest or cheating behaviors from hubristically proud individuals. Based on a novel theoretical model, we hypothesized that hubristic pride would be associated with a selective tendency to lie when doing so offers an opportunity for status gains, but only in response to feeling that one's own status has been threatened. Using a behavioral measure of dishonesty, we found largely consistent support for this hypothesis. By modifying the experimental manipulations included in these studies, we also tested alternative accounts for this effect, and found that this tendency is generally less apparent or likely to occur in response to the threat of being powerless or feeling inferior to others, suggesting it is distinct to status threats.

More specifically, in Study 1 we found that trait hubristic pride predicted overreporting one's performance on a cognitive task, but only when participants believed they would subsequently interact with a highly competent partner—evoking a threat to their status –and not when they believed they would interact with an incompetent partner or a partner of unknown competence. In Studies 2a-3c, we found that hubristic pride was not associated with dishonest behavior when participants did not believe they would subsequently work in pairs, indicating that these individuals do not lie to self-enhance indiscriminately, and also that hubristic pride is not reliably or robustly associated with lying for the sake of attaining power over a peer. Further supporting this conclusion, in Studies 3a-3c hubristically proud individuals exaggerated their performance in response to a status threat even when the possibility of attaining power was removed, as long as they still had the opportunity to gain status in the eyes of a high-status partner.

In Study 4 we found that hubristic pride was not associated with deception when participants were made to feel inferior to others but did not face a status threat; that is, when they knew that others had outperformed them but they did not expect to meet or work with these others. Finally, Study 5 showed that the results of the prior studies cannot be attributed to a greater susceptibility to anchoring effects among hubristically proud individuals or to the specific domain of anagram puzzles, and validated our assumption that the prospect of working with a highly competent partner was considered a status threat. Furthermore, an exploratory analysis in this study suggested that the extent to which hubristically proud individuals lie in response to status threats is associated with the extent to which they find their highly competent partner threatening.

Together, these results support our theoretical account of when, why, and to whom hubristically proud individuals strategically exaggerate their competence to gain higher social status than they actually deserve. We propose that hubristically proud individuals feel entitled to high social status across contexts due to their grandiose, inflated self-concepts, and, as a result, status threats become more problematic for them than for people low in hubristic pride, because these situations raise doubts about the validity of their inflated self-concepts.

The specificity of the motivation observed here—a response to a status threat only— is consistent with the notion that hubristic pride evolved to motivate status-seeking behavior (Cheng et al., 2010; Tracy et al., 2010). These individuals' willingness to counter status threats with strategic dishonesty may provide them with an advantage over others who are less willing to behave immorally in status competitions. If successful, their dishonesty might ultimately beget numerous fitness benefits that come with high social rank (Henrich & Gil-White, 2001; von Rueden & van Vugt, 2015). These findings thus support evolutionary accounts of hubristic pride,

suggesting that it may promote fitness benefits despite its known associations with maladaptive intra- and interpersonal traits and behaviors (Tracy et al., 2009; Tracy et al., 2010).

Furthermore, the current findings shed new light on the distinction between hubristic pride and the dark triad traits. Despite considerable conceptual and empirical overlap among these traits and both facets of pride (Paulhus & Williams, 2002; Tracy et al., 2009), the relationship between hubristic pride and strategic dishonesty in response to status threats appears to be independent of that shared variance. We found clear support for this conclusion in Study 5; Studies 3 and 4 produced more mixed results on this front. However, meta-analyses on the partial correlations controlling for shared variance with each dark triad trait indicated that, across all studies in which these traits were measured, hubristic pride predicted strategic dishonesty independent of its overlap with narcissism, Machiavellianism, and psychopathy.

These results thus suggest that hubristic pride is related to lying in the face of a status threat independently of shared variance with the dark triad traits, and thus may be more specifically calibrated to status concerns, compared with other features common to the dark triad traits. Whereas the dark triad traits have been shown to predict anti-social behaviors in a variety of contexts, such as cheating for monetary rewards (Jones & Paulhus, 2017) and behaving selfishly in economic games (Moshagen, Hilbig, & Zettler, 2018), these tendencies may emerge from other shared features like self-centeredness and low guilt-proneness (Paulhus & Williams, 2002). Hubristic pride, in contrast, may be what leads to anti-social behaviors in a much more specific context: when one's status has been threatened.

However, one limitation of these studies is that grandiose narcissism was measured with the Short Dark Triad Scale (Jones & Paulhus, 2014), and it is possible that other measures, or conceptualizations, of this dimension would overlap more with hubristic pride in its relation with

strategic dishonesty. In particular, narcissistic rivalry is argued to be a facet of grandiose narcissism centered around feelings of entitlement and antagonism, rather than assertiveness and self-enhancement, and is similar to hubristic pride in its external correlates with anti-social personality traits and behaviors (Back et al., 2013). Future research would therefore benefit from incorporating other measures of narcissism, such as the Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013), to best determine the extent to which hubristic pride is a unique predictor of strategic dishonesty after status threats.

Another limitation of these studies is that, in each study, the fictitious partner was both the source of the status threat and the person who would provide status rewards, if lying was effective. It therefore remains unclear whether hubristically proud individuals lied to boost their status specifically to *the source of the status threat*, or to boost their status in any way possible after feeling that their status had been threatened. Future studies are therefore needed to disentangle the source of the status threat from the source of potential status bestowal.

An additional possible limitation is that, because participants were informed of their partner's reported score rather than actual score, they might have assumed that their highly competent partner was lying about their high score; hubristically proud individuals may be especially likely to make such an assumption because dark personality traits are associated with a tendency to see others as dishonest and untrustworthy (Moshagen et al., 2018). In this view, hubristically proud individuals might have exaggerated their own scores when facing a highly competent partner not because they sought to boost their status when facing a higher status partner, but rather because they perceived dishonesty to be normative in this situation, thus justifying their own desire to engage in dishonest behavior (Shalvi, Gino, Barkan, & Ayal, 2015). However, it is noteworthy that, even in this account, individuals high in hubristic pride

are motivated to behave dishonestly specifically in this situation; their perception of their partner's behavior merely provides a justificatory fuel. It is thus reasonable to conclude that facing off against a seemingly or potentially higher-status partner (even if that status was claimed but not earned) leads individuals high in hubristic pride to seek to behave dishonestly if doing so will allow them to boost their own status. In addition, if hubristically proud individuals believed that their partner lied to overclaim status that they themselves felt entitled to, they might have become angry and lied out of a desire to retaliate, or to ensure that they obtained the status they believed they deserved.

Although these alternative explanations offer different proximal-level explanations for participants' dishonest behavior, compared to our primary, status-based explanation, it is noteworthy that in all cases the ultimate distal-level function of gaining status is the same across explanations; this is also consistent with a large body of research suggesting that pride ultimately functions to promote social rank attainment and maintenance (e.g., Cheng et al., 2010; Sznycer et al., 2017; Tracy et al., 2020; Tracy, Shariff, Zhao, & Henrich, 2013). More specifically, if hubristically proud individuals lie in this situation because they can justify doing so with the belief that their partner lied, their inclination to lie nonetheless suggests a desire to gain status however possible. Similarly, if hubristically proud participants lied out of anger about their partner's lying, this feeling would stem from a sense that their partner's dishonesty posed an unfair threat to their own status. In other words, the proposed functional system in which hubristically proud individuals respond to status threats by demonstrating a willingness to engage in immoral behaviors like dishonesty to gain status may operate through several different proximal mechanisms. Future research is needed to test these various proximal-level accounts, to better understand these individuals' motivation(s) for lying in response to a status threat.

Several other limitations to the present research also should be addressed in future work. First, the correlational nature of our dependent variable prevents us from drawing causal conclusions about the impact of hubristic pride on deception, although random assignment to experimental conditions allows us to draw causal conclusions about the contexts which elicit cheating behavior from hubristically proud individuals. Future research is therefore needed to manipulate state hubristic pride and test whether similar effects emerge in response to status threats. However, given that our theoretical model is focused on the chronic experience of hubristic pride, wherein individuals have adopted a tendency to behave dishonestly after status threats as a way of validating their grandiose, inflated self-concepts, it is not clear that a person who is momentarily experiencing hubristic pride but is not generally prone to this emotion would behave in the same way. Repeated life experiences affect the development of the self-concept (Markus, 1977), so we expect that the general tendency to experience hubristic pride over time, as was measured in the present research, would more reliably promote the development of a hubristically proud self-concept, ultimately leading to strategic dishonesty in response to status threats.

Another limitation is that all of these studies were conducted online with MTurk samples. Given that these experiments used a novel, complicated procedure, and participants completed the experiments unsupervised by an experimenter, we used rigorous exclusion criteria to ensure that participants understood and believed the cover story (see our pre-registration documents and SOM.2 for details on each exclusion criterion in each study, including the attention and suspicion questions used for exclusionary purposes). This resulted in a large number of exclusions in each study. Future research would therefore benefit from conducting experiments in a live laboratory setting to reduce the need for participant exclusions. It is important to note, however, that the

limitations of online research should, for the most part, work against our expected effects; the status dynamics hypothesized to drive dishonest behaviors should be considerably less salient when participants think they will interact with each other only via instant message, compared to face-to-face interactions in a laboratory or real-world context. Although previous research has shown that people try to gain and maintain social status similarly in laboratory and online contexts (e.g., Case, Bae, & Maner, 2018), it seems plausible that the consequences of a live status threat, like facing the disrespect of a high-status peer in person, would be more severe than our online manipulation. Nonetheless, the design used here might have increased our likelihood of detecting effects for other reasons, such as the ease of lying in an anonymous online context and the reduced risk of getting caught.

An additional limitation is that the two tasks used across all studies applied to the same general domain: intelligence/reasoning. The use of anagram tasks allowed us to prompt both activation of the need for achievement (McClelland, Clark, Roby, & Atkinson, 1949) and social comparison processes (Lyubomirsky & Ross, 1997), motivations consistent with our goal of leading participants to value their partner's perception of their performance and feel threatened by the prospect of interacting with a partner who outperformed them. However, it remains possible that some participants did not place great importance on their partner's judgment of their skills at this task, limiting the generalizability of these findings (while also, notably, reducing our ability to find an effect). Future research is therefore needed to examine these processes in a different domain, such as physical abilities among competitive athletes. In addition, although we used two different kinds of tasks across the eight studies, all studies relied on the same dependent variable—lying about one's score. Future research is therefore needed to examine whether the present findings generalize to other kinds of dishonest behavior.

Finally, all of our participants were MTurk workers located in the United States, so it is unclear whether these results will generalize beyond WEIRD populations (Henrich, Heine, & Norenzayan, 2010). Considering that expressing pride has somewhat different status connotations across cultures (Tracy, Shariff, Zhao, & Henrich, 2013), it is possible that our results would not generalize to other cultural contexts. However, given that the nonverbal expression of pride is reliably recognized, displayed, and associated with high status across a wide range of cultures (Tracy & Matsumoto, 2008; Tracy et al., 2013; Tracy & Robins, 2008), the two-factor structure of pride generalizes across North American and several East Asian cultures, and hubristic pride has a similar set of correlates in these other populations (Shi et al., 2015), it is also possible that our results would generalize fairly widely.

In conclusion, the current research provides the first evidence that trait hubristic pride is uniquely associated with dishonest status-seeking behavior in response to status threats, and supports a theoretical model explaining exactly when and why this behavior occurs. This research builds upon previous theories suggesting that hubristic pride functions to promote social rank attainment by demonstrating a specific anti-social yet functional behavioral tendency that may allow hubristically proud individuals to reach a high level of social status and reap the benefits that come with it.

Context of the Research

The present research originates from prior research on pride and its two distinct facets: authentic and hubristic (e.g., Tracy & Robins, 2007). Both facets are thought to be functional by

helping individuals advance and maintain their social status, yet this claim is difficult to reconcile with the numerous psychologically maladaptive and antisocial correlates of hubristic pride. To resolve this puzzle, we hypothesized that hubristic pride might function to promote status by motivating anti-social or immoral behaviors in the service of rank attainment. Importantly, given that these behaviors should function to advance one's status, they should be most pronounced when hubristically proud individuals feel that their status is threatened and that anti-social behaviors might rectify this situation. The present studies tested this hypothesis by manipulating the presence of a status threat and giving participants the opportunity to behave deceptively to gain status. In future work, we hope to address several outstanding issues, such as replicating these findings in more naturalistic contexts and examining how individuals high in hubristic pride justify their deceptive behaviors.

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