Double Standards in the Use of Enhancing Products by Self and Others

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Despite the growing prevalence of products that allow people to improve themselves, there is limited research to date on how consumers perceive the use of these products. We introduce a theoretical framework that explains how consumers interpret the effects of such products and how they judge the fairness of their use. Five experiments show that consumers perceive the same enhancing products as embellishing users' abilities to a greater extent when other people use them than when they themselves use them. This leads to an ethical double standard: consumers believe that it is less fair for others to use ability-boosting products than it is for themselves to do so. Consequently, encouraging consumers to consider who the ultimate users of such products will be can influence how they believe such products ought to be used and regulated.

> I was given a gift to hit home runs. . . . The only reason I took steroids was for health purposes. (Mark McGwire)

Former single-season home run record holder McGwire has repeated this explanation of why he took steroids when he played baseball in the late 1990s, and he seems to truly believe it. The reaction of the rest of the world to this assertion, however, ranged from disbelief (Levin 2010) to utter disbelief (Stewart 2010). Why might McGwire persist in a claim that the rest of the world perceives as patently false? And did he use such beliefs to justify his behavior in the first place?

On the heels of confessions like McGwire's and Lance Armstrong's, increasingly common reports of casual and rampant use of amphetamines for focus (e.g., Schwarz 2012), and trends toward the development and marketing of "lifestyle" rather than lifesaving drugs, it is clear that questions like these are of great relevance to all modern consumers. Many medical and technological advances have given people the means to improve themselves quickly and easily. Some of these products are intended to "enable" people who are functioning at a disadvantage due to illness or disability to perform up to their full potential, and some products are meant to work to "embellish" otherwise healthy, well-functioning people to advance beyond that level (see fig. 1*A*). However, in some cases, whether we see such a product as enabling or embellishing may depend on who exactly the user of that product is.

The present research shows that consumers interpret the effects of enhancing products and services differently depending on who uses them, seeing them as more likely to embellish others than themselves. These different interpretations lead to an ethical double standard for self and others, such that people believe that it is less morally acceptable for other people to use such products than it is for themselves to do so. Consequently, focusing on the self versus others using such products can affect how people think the products should be used and regulated.

JUDGING ONESELF VERSUS JUDGING OTHERS

Past psychological research suggests a number of reasons why consumers might have different beliefs about what it means for themselves versus others to use the same en-

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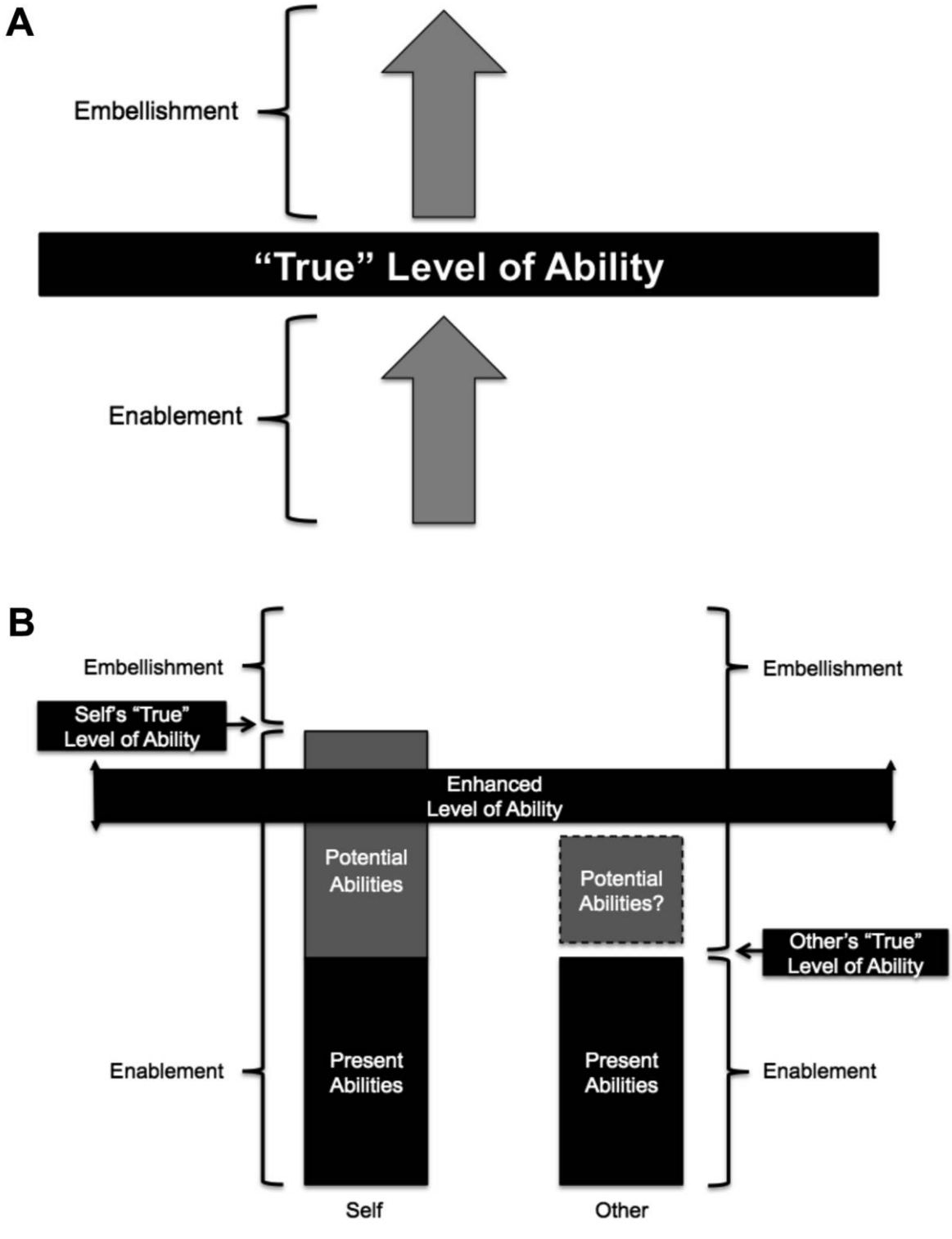
FIGURE 1

POSSIBLE TYPES OF IMPROVEMENT VIA ENHANCING PRODUCTS (*A*) AND PERCEPTIONS OF ENHANCED PERFORMANCE LEVEL RELATIVE TO SELF'S AND OTHER'S "TRUE" LEVEL OF ABILITY (*B*)



hancing products. Of particular importance, this work has shown that people perceive themselves to have different access to information about themselves and others; that they weight the information they have differently depending on who they are considering; and that they have different beliefs about what "the self" is, depending on whose "self" it is. First, there are asymmetries in the amount of information that consumers both have and believe they have about themselves and others. People think that they are able to perceive and understand others, both better than others can understand them and better than others can perceive and understand themselves (Pronin et al. 2001). They seem to believe that they contain hidden and untapped multitudes, while others are an open book. They are likely convinced that they know what others are truly capable of and that any movement beyond that is subject to suspicion as to its source.

Second, by virtue of actually having exclusive access to what goes on inside their own heads and only indirect access to what goes on inside others', people are accustomed to relying more on internally available information when assessing themselves than when assessing others (Pronin 2009). Thus, introspective thoughts (Andersen and Ross 1984; Pronin and Kugler 2007; Williams and Gilovich 2008) and intentions (Buehler, Griffin, and Ross 1994; Epley and Dunning 2000; Kruger and Gilovich 2004) are weighted more heavily in how people judge themselves and how they believe they will be judged by others than in how they judge others and how others actually judge them. Notably, people give themselves credit for how they intend to behave, while largely ignoring such information about others (Kruger and Gilovich 2004). By giving their own positive intentions more weight than others', they are more likely to see themselves in a positive light relative to others and succumb to the better-than-average effect. In fact, people tend to overweight their intentions in their self-assessments, period, seeing themselves in a positive light relative to reality (Koehler and Poon 2006). In addition, because of their tendency to give themselves credit for what they want or intend to accomplish, and certainly more credit than they give others (e.g., Epley and Dunning 2000; Kruger and Gilovich 2004; Pronin, Berger, and Molouki 2007; Sedikides 1993), people may see themselves as having loftier goals and greater potential than other people have.

Finally, when considering who they or others truly are, people use different information in their assessments and believe potential to be more informative about the self than others (Williams, Gilovich, and Dunning 2012). When considering their own capabilities, people tend to incorporate thoughts of what they believe they can but have not yet been able to accomplish; they are less likely to do so on the part of others. This leads people to think of their own potential as already existing within themselves, just waiting to be unlocked, but others' potential as not yet existing within them. This does not mean that they would not grant that other people have potential. It means that regardless of the size or extent of the other person's potential, it does not seem to be as informative of who they are currently and what they are ultimately capable of accomplishing. It is instead something external to the person and less certain to be attained (see fig. 1*B*). Similarly, people are more likely to focus on the past when judging another person than judging themselves, taking already performed behaviors as evidence of who a person is to a greater extent when that person is someone else (Williams and Gilovich 2008).

Understanding how people perceive themselves and others differently can reveal when they might judge their own and others' use of enhancing products and procedures in divergent ways. Building on past work that shows that people know, emphasize, and rely on different information about themselves and others, we hypothesize that people are inclined to see others' use of enhancing interventions as more embellishing than their own use of such interventions.

> **H1**: Consumers perceive the same enhancing products or services as embellishing users' abilities to a greater extent when other people use them than when they themselves use them.

One corollary to this self/other asymmetry is that it may be less likely to emerge when the other has a relevant disorder that is thought to keep that person from performing up to his/her true level of ability. For example, people often support the use of enhancing medications to treat diagnosed disorders that can interfere with performance and believe that such disorders are distinct from or can mask a person's true abilities (e.g., ADHD [attention deficit hyperactivity disorder]; Singh 2005). Thus, it seems likely that, rather than perceiving others with disabilities as embellishing their abilities via enhancing interventions, people will perceive those others more as they do themselves.

> **H1a**: Consumers are less likely to perceive an enhancing product or service as embellishing if the user has a relevant disability than if the person does not have a disability.

THE FAIRNESS OF ENHANCEMENT

If consumers construe the effects of enhancing products and services differently for themselves and others, they may come to different conclusions about the morality of their use. In philosophical discussions of the ethicality of neuroenhancing medications, whether such medications enable users' true abilities or embellish those abilities, or whether they are used by "normals" rather than those with disabilities, is often seen as the line separating ethical from unethical neuroenhancer use (e.g., Lynch 2006). Consumers are also less accepting of cognitive-enhancing medication when it contributes to competitive or distributive unfairness, giving some lucky or already privileged people a leg up over others (e.g., Scheske and Schnall 2012). Relatedly, people are more accepting of policy interventions when they are framed as enabling rather than embellishing. People are more amenable to policies that reduce inequity by giving to those who are

needier when those policies are framed as helping to bring the needy up to a higher standard state of being represented by a less needy person (i.e., enabling the needy) than when those policies are framed as moving the needier person beyond the standard state of being that they themselves represent (i.e., embellishing the needy; Lowery, Chow, and Crosby 2009). Consistent with this idea, Riis, Simmons, and Goodwin (2008) found that consumers show less interest in a drug that could change a fundamental aspect of who they are if that drug is advertised using the tagline "Become More Than Who You Are" instead of "Become Who You Are." Likewise, the idea that Prozac could make the depressed feel "better than well" raised ethical concerns about the new medication's use (Kramer 1993). More generally, this suggests that people may be uncomfortable with the idea of embellishing a person's traits beyond what they are supposed to be, giving them abilities they would not otherwise have.

People are also uncomfortable with the idea of "taboo trade-offs," when consumers or companies use sacred objects or ideas for secular gain. Medical care and pharmaceuticals are one domain in which taboo trade-offs are frequent (e.g., McGraw, Schwartz, and Tetlock 2012). People believe that medications should be used to heal the sick and help people overcome disabilities and that profiting from them is immoral. People can see beyond a taboo trade-off when it is in their self-interest to do so (McGraw and Tetlock 2005). But when they perceive that someone else is trying to get ahead by using a medication, they are likely to judge that use more harshly than the use of the same medication to overcome a deficit. We hypothesize that:

H2: Due to differences in whether products are believed to embellish their users' true abilities, people will perceive the same enhancing products or services as less ethically acceptable when other people use them than when they themselves use them.

Relatedly, certain people, in particular ourselves, are likely to seem to have extra untapped potential to perform well, raising their "true" level of ability. This additional yet-to-be-demonstrated ability would mean that an enhancing intervention would be more likely to help them "become who they are" and therefore seem acceptable for use. After all, the more ability a person has to perform well, the more likely it is that the person's true level of skill would be revealed by the enhanced performance conferred by such products rather than embellished by it. Thus:

H2a: The more potential ability a person seems to have to perform well, the less likely consumers are to perceive his/her use of a relevant enhancing product to be unethical.

Another factor that might contribute to moral discomfort with enhancing products is that people have a strong preference for authenticity and naturalness. They believe that natural or original artworks (Newman and Bloom 2012), celebrity memorabilia (Newman, Diesendruck, and Bloom 2011), toys and attachment objects (Hood and Bloom 2008), food (e.g., Takala 2004; Tenbült et al. 2005), and, indeed, neuroenhancing products (e.g., Scheske and Schnall 2012), among many other objects, are more pleasant, more valuable, and more acceptable than imitation or artificial versions of the same items. In recent work, Tsay and Banaji (2010) found that despite people's explicit statements that they believed effortful talent would be more successful than innate talent, their responses implicitly revealed a preference for natural ability and a belief that for equal levels of output, naturally-abled people ("naturals") were more talented than effortfully-abled people ("strivers"). People may judge the use of enhancing interventions less harshly depending on how natural they are perceived to be, specifically:

H3: Consumers are likely to perceive "natural" forms of enhancement to be less embellishing and more acceptable than "artificial" ones.

OVERVIEW OF STUDIES

Five studies demonstrate that consumers have different beliefs about the effects of enhancing products and services depending on who uses them and that this affects their perceptions of how acceptable that use is. Study 1 tests whether people perceive an identical product or service as being more embellishing of others' performance than their own. Study 2 explores whether this self-other difference in interpretations depends on whether others are using enhancing products to overcome a disability or to augment already adequate abilities. Study 3 examines whether the self-other asymmetry creates an ethical double standard for the perceived acceptability of the use of enhancing treatments and considers how people believe such products should be used and regulated. Study 4 looks at participants' beliefs about the effects of natural versus artificial enhancements and at how strongly they believe in the self-other ethical double standard. Finally, study 5 illustrates the implications of this asymmetry for marketers and policy makers, showing that people are more supportive of prohibitions against enhancing products when they are framed as targeting the population at large rather than targeting themselves personally.

With this research, we introduce a theoretical framework that explains how consumers perceive the effects of enhancing products and how they judge the ethicality of their use. This research contributes to the study of self-other differences by suggesting that discrepancies in the way people think about their own true nature and that of others may lead to self-other differences in judgment independent of other influences such as self-serving biases, and it contributes to the study of moral judgment by showing that standards for acceptable product use can shift depending on how products seem to work. This work also has substantive implications for marketers and policy makers, by showing that encouraging consumers to consider whether they themselves or other consumers will ultimately be using such enhancing products can lead to differences in how they believe the

products ought to be used and regulated. Our research may also serve as a warning for consumers of such products: what they may perceive as legitimately enabling their existing abilities, others may view as unfair embellishment.

STUDY 1: ENABLEMENT OR EMBELLISHMENT?

Study 1 tested whether people interpret the effects of enhancing interventions differently depending on whether they or another person uses them. Participants consumed some energy-boosting jelly beans and evaluated the jelly beans' effect on their own and another participant's performance on an intellectual task. We predicted that participants would perceive the same jelly beans as embellishing the other person's abilities to a greater extent than their own.

Method

Participants. Two hundred and eighty-three undergraduates at the University of Cincinnati participated in exchange for course credit in introductory business classes.

Procedure. Participants were invited to evaluate Jelly Belly Sport Beans, jelly beans with added vitamins and electrolytes, a real product that claims to give its users a boost in energy and endurance similar to a sports drink. Participants were told: "We are interested in your perceptions of Sport Beans and how they might work. We believe they may also be effective at helping people succeed at intellectual tasks as well as athletic ones." They then performed two related tasks, one before and one after consuming some regular Jelly Bellies that they were told were Sport Beans: task 1 was to name as many countries whose names start with the letter "S" as possible in 2 minutes, and task 2 was to name as many European countries as possible in 2 minutes. Participants received standardized feedback about the two tasks, regarding their own performance and that of another participant to whom they had supposedly been yoked. The first set of feedback stated that the person in question had scored at the 76th percentile before they ate the jelly beans and the 85th percentile after. The second set of feedback stated that the person in question scored at the 83rd and then 92nd percentiles. Half of the participants received the first set of feedback about their own performance and the second set regarding the other person's performance; the other half received the first set of feedback about the other person's performance and the second set about their own.

After viewing each set of feedback, participants indicated via a slider: "In your opinion, how would you be most likely to describe the effects of the Sport Beans on your [the other participant's] performance in today's main task?" on a scale from 0 = "The Sport Beans enabled me [the other participant] to perform up to my [their] true intellectual abilities" (an *enablement* interpretation) to 100 = "The Sport Beans enhanced my [the other participant's] performance above and beyond my [their] true intellectual abilities" (an *embellishment* interpretation). In this and all subsequent studies, the wording for when the other person is the user of the enhancing product is in brackets. (A note about this measure: a quirk in the testing software meant that the default setting for the slider was a zero, but a slider that never moved was recorded as a blank data point. A blank may thus mean that participants skipped the question or that they were trying to record a zero. This analysis treats blanks as skipped questions; an analysis with those points treated as zeros reveals an identical pattern of results and is posted in online appendix B.)

Results

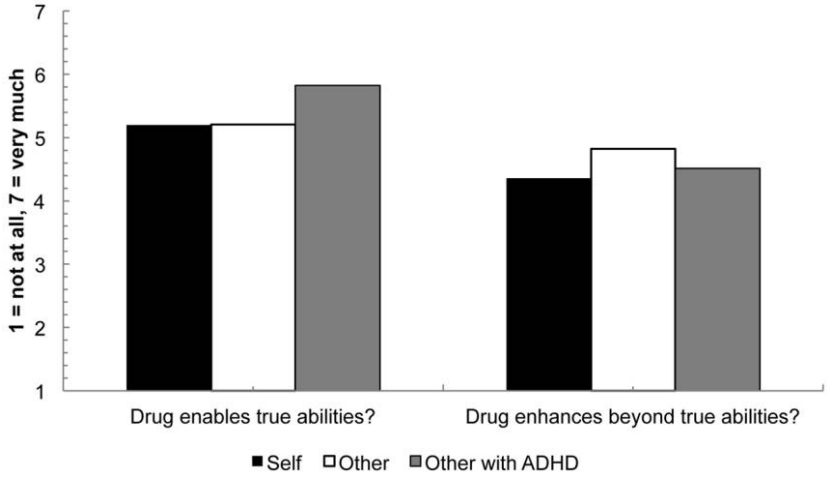
As predicted, participants interpreted the effects of Sport Beans to be less embellishing (and thus more enabling) of their own performance ($M = 33.16$, SD = 23.94) than they were of the other person's performance ($M = 38.68$, SD = 27.67; $F(1, 250) = 16.63$, $p < .001$, $\eta_p^2 = .06$). This was true regardless of the objective feedback that participants received about self and other, as demonstrated by a significant interaction between self-other condition and order of ratings, because order and feedback were linked ($F(1, 250) = 18.32$, $p < .001$, $\eta_p^2 = .07$). When participants learned that the target person ultimately scored at the 85th percentile on the task, they believed that the jelly beans were less embellishing when they were the target person ($M = 30.62$, SD = 23.97) than when it was for other ($M = 35.65$, SD = 23.74); likewise, when participants were told that the target person scored at the 92nd percentile on the task, they believed that the jelly beans were less embellishing for them ($M = 35.38$, SD = 27.85) than for the other person ($M = 42.04$, SD = 27.19). Thus, for equivalent levels of performance, the Sport Beans were perceived as less embellishing of participants' own performance than of the other person's.

Discussion

Study 1 demonstrates that consumers interpret the effects of enhancing products and services differently depending on the user, seeing such products as more likely to reveal one's own true self but to make others look better than they truly are. This study raises two questions. First, while enablement and embellishment are by definition the two types of improvement that participants could show—improvement up to versus beyond one's true level of abilities—it is unclear whether participants treat them as the same thing or as related but separable concepts. The second question is whether participants recognize that others might also be enabled by an enhancing product, under certain circumstances. Study 2 added two features: enablement and embellishment are separate questions, and a third comparison person helps examine whether a person with a disability is seen more to enable or to embellish their abilities by the use of an enhancing product.

FIGURE 2

PERCEIVED ENABLEMENT AND EMBELLISHMENT OF SELF, OTHER, AND OTHER WITH ADHD VIA ENHANCING ADHD MEDICATION, STUDY 2



STUDY 2: DIFFERENTLY (EN)ABLED

Medications like Ritalin and Adderall were originally developed to enable people with ADHD to concentrate at normal levels, but such stimulant medications are now often used by healthy people. For instance, in a recent survey, 34% of "normal" undergraduates reported using ADHD stimulants off-label to boost their academic performance (DeSantis, Webb, and Noar 2008). Here, we asked participants to imagine that they, an acquaintance, or an acquaintance with ADHD had taken a medication to improve focus and concentration on an exam. Participants indicated the degree to which this enabled the target's true abilities and the degree to which it embellished the target's abilities beyond her true level. We predicted that participants can distinguish between enablement and embellishment effects and that participants would also see less embellishment and more enablement in an acquaintance with a real deficit to overcome via an enhancing product.

Method

Participants. Three hundred and twenty-five undergraduates at the University of Florida participated in exchange for extra credit in marketing and other business classes.

Procedure. Participants imagined that they and a coworker, Jennifer, were studying together for the GMAT. Both they and Jennifer had scored similarly on their practice exams, between 550 and 600 (out of 800), with average scores of 570. Participants in the *self* condition learned that they did not have ADHD, and they took a prescription medication (Zeltor) to help improve focus and concentration on the day of the exam; they scored 610, and Jennifer scored 565. Participants in the *other* and the *other with ADHD* conditions were told that Jennifer either did not or did have ADHD and that she took Zeltor for the exam; she scored 610, and they scored 565. See appendix A for the full scenario.

Participants indicated, "To what extent did taking Zeltor make you [Jennifer] look better than you actually are [she actually is] at taking the GMAT?" (an *embellishment* interpretation) on a scale from 1 = "not at all" to 7 = "very much"; and "To what extent did taking Zeltor enable you [Jennifer] to perform up to your [her] full potential?" (an *enablement* interpretation) on a scale from 1 = "not at all" to 7 = "very much." As a check, participants also indicated whether the target person in the scenario did or did not have ADHD.

Results

Thirty-five participants were excluded from the analyses, two who failed to fully respond to the survey and an additional 33 who failed the ADHD check. The pattern of results is the same if these participants are included; see online appendix B for the full analyses.

Figure 2 presents the results for perceived embellishment and enablement of the self, the other, and the other with ADHD. Although the omnibus analysis of perceived embellishment did not reach significance ($F(2, 287) = 2.23$, $p = .11$, $\eta_p^2 = .02$), participants believed that when neither person had ADHD, the drug was significantly less embellishing when they themselves took it ($M = 4.36$, SD = 1.59) than when Jennifer did ($M = 4.82$, SD = 1.51; $t(195) = -2.05$, $p = .04$, $d = .30$). But when Jennifer had ADHD, perceptions of embellishment fell in between ($M = 4.49$, SD = 1.54; $t(190) = .58$, $p = .56$, $d = .08$ vs. the self; $t(189) = -1.46$, $p = .15$, $d = .22$ vs. Jennifer without ADHD).

Perceptions of enablement also differed depending on the user ($F(2, 287) = 7.68$, $p = .001$, $\eta_p^2 = .05$), but they did so in a different pattern: when neither person had ADHD, participants believed that the drug was equally enabling of the self ($M = 5.20$, SD $= 1.24$) and Jennifer ($M = 5.21$, SD $= 1.41$; $t(195) = -.07$, $p = .95$, $d = .01$). However, participants thought the drug was more enabling when Jennifer with ADHD took it ($M = 5.83$, SD $= 1.10$) than when they took it ($t(189) = 3.70$, $p < .001$, $d = .54$) or when Jennifer without ADHD did ($t(189) = 3.34$, $p = .001$, $d = .49$).

Discussion

The overall pattern of data has two implications. One is that participants understand enablement and embellishment to be differentiable forms of improvement but that they still show a pattern of results consistent with a belief that enhancements embellish others' abilities to a greater extent even when the concepts are separated. Indeed, when we subtract ratings of enablement from ratings of embellishment to create a scale that resembles that of study 1, we find a similar pattern of results. Perceptions of embellishment versus enablement differed depending on the user ($F(2, 287) = 8.28$, $p < .001$, $\eta_p^2 = .06$). When neither person had ADHD, participants believed that the drug was more embellishing/less enabling of Jennifer ($M = -.40$, SD $= .1.64$) than it was of the self ($M = -.84$, SD $= 1.48$; $t(195) = 1.99$, $p = .049$, $d = .28$). However, when Jennifer was said to have ADHD, participants thought the drug was less embellishing/more enabling of Jennifer ($M = -1.33$, SD $= 1.65$) than it was of the self ($t(190) = -2.19$, $p = .03$, $d = .31$) or of Jennifer without ADHD ($t(189) = 3.93$, $p < .001$, $d = .57$). Study 4 will examine this idea further. The second implication of study 2 is that perceived differences in embellishment are not simply due to general beliefs about self and others, such as a self-serving bias. Participants felt that another person who took the same medication they did was more embellishing of their abilities when that person started at the same level of (dis)ability as they had; however, when the other person could use the medication to legitimate purpose, that use was now seen as no more embellishing and yet more enabling than their own use.

Although consumers clearly hold a less flattering view of others' use of enhancing products, it is not yet clear whether this is related to a tendency to perceive that use as unfair or immoral. A correlational study to explore undergraduates' views of the nature and fairness of performance-enhancing drugs (PEDs) in sports reveals a notable relationship between whether PEDs were seen to embellish (vs. enable) their users and whether PEDs were seen to be unfair. How strongly participants endorsed the idea that PEDs make athletes appear to have abilities they do not actually possess (rather than help reveal their true abilities) was predictive of the degree to which they believed that PEDs were unfair to sports fans ($r(103) = .48$, $p < .001$), the degree to which they believed PEDs were unfair to other athletes ($r(103) = .42$, $p < .001$), the degree to which they believed policies against PEDs should be strengthened ($r(103) = .48$, $p < .001$), and the degree to which they believed that the use of PEDs by athletes should be a legal issue ($r(103) = .22$, $p = .02$; see app. A for question wording). Studies 3–5 examine whether this relationship would also reveal itself in self-other differences in the perceived acceptability of using enhancing interventions and the fairness of policies and regulations regarding that use.

STUDY 3: A JOB INTERVIEW

As neuroenhancing drugs make their way into the workplace, it is becoming increasingly important to understand how potential product users and employers judge the ethicality of using such products for the purposes of career success or advancement. In study 3, participants took the perspective either of a job candidate who used an anti-anxiety drug to perform better during a job interview or of the interviewer of that job candidate. Our prediction was that self-other differences in perceived embellishment would lead participants to see their own use of a neuroenhancing drug as more acceptable than another job candidate's use.

We also sought to directly address the counterexplanation that double standards might be driven by differences in how effective the drug seemed to be. Effort is closely tied to perceptions of morality of behavior (Morales 2005; Reed, Aquino, and Levy 2007), such that the less effort required to reach a goal, the less morally commendable reaching that goal seems to be. Indeed, a reduction in necessary effort to succeed may underlie part of consumers' discomfort with neuroenhancing medications (Lucke et al. 2011). This account suggests that double standards may arise because people feel the drugs may unfairly level the playing field for others who are less hardworking.

Study 3 also examined another potential contributor to self-other double standards: different beliefs about the ultimate level of ability attainable by oneself and others. To examine this idea, we had participants estimate the candidates' potential future performance level to see whether expectations were lower for another person than for oneself. Seeing another person trying to get around having limited ability, as measured by expectations of the user's ultimate performance, as well as any potential that user has being less a part of her true abilities than oneself's, as measured by how much the drug is seen as embellishing, should lead participants to see the use of an enhancing medication as less acceptable for another person than for oneself.

Finally, we explored the implications of self-other differences in perceived acceptability on beliefs about the consequences of having used the drug. We predicted that double standards would lead participants to believe themselves to be more deserving of the job and under less compunction to disclose their use of the drug to get the job than another person should be.

Method

Participants. One hundred and twenty-two adults were recruited to fill out an online survey via Amazon.com's Mechanical Turk and were compensated with $0.10 Amazon.com credit.

Procedure. Participants imagined that they were either a job candidate who was interviewing for a sales position or a manager interviewing a candidate for that sales position. In the scenario, the participant (or the job candidate the participant interviewed) took an anti-anxiety drug to perform well and subsequently got the job. See appendix A for the full scenario.

To assess whether self-other double standards stem from different interpretations of the effect of Zatex for self versus others, we asked, "What is the most accurate way to describe the effect of Zatex?" on a scale from 1 = "It would help reveal my [his] true abilities in the interview" to 7 = "It would make me [him] appear to have abilities I don't [he doesn't] actually possess."

To assess whether self-other double standards might also be rooted in different expectations for future performance for oneself versus others (i.e., different amounts of potential), we asked participants, "How well do you think you [the candidate] will meet the interviewer's [your] expectations for the job once you start [he starts] for real?" on a scale from 1 = "I [He] will definitely NOT meet expectations" to 7 = "I [He] will greatly exceed the interviewer's [my] expectations," with the midpoint labeled, "I [He] will exactly meet expectations."

To assess whether participants held themselves and others to different standards, we asked participants, "How acceptable was it for you [the applicant] to have taken Zatex?" on a scale from 1 = "completely unacceptable" to 7 = "completely acceptable." Finally, to examine the consequences of self-other double standards, participants were asked, "How much would you [the candidate] deserve to get the job?" on a scale from 1 = "I [He] would completely NOT deserve it" to 7 = "I [He] would completely deserve it"; and "Do you think that you [the candidate] should have disclosed to the company that you [he] took Zatex for the interview?" on a scale from 1 = "No, I [he] should not have to disclose that I [he] took Zatex" to 7 = "Yes, I [he] should have to disclose that I [he] took Zatex."

Finally, to address the possibility that different interpretations of the effects of the intervention for self and other or self-other ethical double standards might be attributable to different beliefs about the effectiveness of the intervention for oneself versus others, participants were asked, "How nervous do you think you [the applicant] would have felt at the interview, having taken Zatex, compared to how nervous you [he] would have felt without having taken Zatex?" on a scale from 1 = "no difference at all" to 7 = "much less nervous."

Results

Study 3 had several purposes, namely, to establish that (1) effectiveness does not explain self-other asymmetries in embellishment or acceptability, (2) ethical double standards exist and are predicted by perceived embellishment, (3) perceived potential also predicts how acceptable the use of enhancing products seems to be, and (4) ethical double standards have further consequences for users with regard to obligations to disclose use and perceived deservedness of the outcome. We found support for all predictions. Although participants thought Zatex would have less of an effect on how nervous they felt ($M = 4.25$, SD = 1.58) than on how nervous the other person felt ($M = 5.23$, SD = 1.38; $t(120) = 3.66$, $p < .001$, $d = .66$), using effectiveness as a covariate in analyses of the remaining dependent measures reported below does not change the pattern of results, suggesting that effectiveness cannot explain the self-other asymmetries we find for embellishment and acceptability; see online appendix B for analyses without the covariate.

Instead, participants held double standards for the acceptability of using Zatex for the self and others ($F(1, 119) = 6.51$, $p = .01$, $\eta_p^2 = .05$), indicating that it was more acceptable for a job candidate to take Zatex when they themselves were the candidate (adjusted $M = 4.52$, SE = .24) than when the candidate was someone they interviewed (adjusted $M = 3.64$, SE = .24). These differences were predicted both by perceived embellishment—participants thought that it was more accurate to describe Zatex as making one appear to have abilities that one does not actually possess when the job candidate they interviewed took it (adjusted $M = 4.49$, SE = .22) than when they themselves took it (adjusted $M = 3.41$, SE = .22; $F(1, 119) = 11.29$, $p = .001$, $\eta_p^2 = .09$)—and by perceived potential—participants believed the candidate would better meet expectations when they themselves were the candidate (adjusted $M = 4.82$, SE = .18) than when the candidate was someone they interviewed (adjusted $M = 3.84$, SE = .18; $F(1, 119) = 14.17$, $p < .001$, $\eta_p^2 = .11$). In an analysis that tested whether self-other differences in acceptability were jointly or differentially mediated by differences in perceived embellishment and expectations for future performance, we find that both perceived embellishment ($\beta = -.46$, $t = -5.02$, $p < .001$) and expectations ($\beta = .40$, $t = 3.51$, $p < .001$) significantly predicted acceptability. This analysis revealed that the effect of condition on acceptability was reduced and no longer statistically significant ($\beta = .002$, $t = -.01$, $p = .99$), indicating that the mediation was full. Bootstrapping procedures (Preacher and Hayes 2008) indicated that the indirect effects of perceived enhancement (95% CI = .15 to .96) and expectations (95% CI = .14 to .80) were both significant.

Finally, double standards led participants to see the job candidate who took Zatex for the interview as being more deserving of the job and less obligated to disclose use of the drug when they themselves were the candidate (adjusted $M_{\text{deserved}} = 5.48$, SE = .20; adjusted $M_{\text{disclose}} = 2.49$, SE = .26) than when the candidate was someone they were interviewing (adjusted $M_{\text{deserved}} = 3.98$, SE = .20; adjusted

$M_{disclose}$ = 4.12, SE = .26; both $F(1, 119) > 18.29$, $p < .001$, $\eta_p^2 > .13$). Acceptability was a significant partial mediator of both deservedness ($\beta = .51$, $t = 8.27$, $p < .001$; 95% CI = .11 to .83) and mandatory disclosure ($\beta = -.28$, $t = -2.87$, $p = .005$; 95% CI = −.63 to −.01).

To corroborate these results, we analyzed a structural equation model with all the variables of interest using LISREL 8 (Jöreskog and Sörbom 1993). The results (see fig. 3) indicated a strong degree of fit (χ^2 (21) = 391; comparative fit index [CFI] = .996; nonnormed fit index [NNFI] = .982; root mean square error of approximation [RMSEA] = .050; and adjusted goodness of fit index [AGFI] = .918). All standardized residuals were small.

As predicted, whether participants considered self or other had a significant influence on the perceived effectiveness of Zatex. However, perceived effectiveness was not significantly related to perceived acceptability. This suggests that self-other differences in perceived acceptability were not due to differing perceptions of its effectiveness. Further, whether participants considered self or other had a significant influence on perceived embellishment, which itself had a significant influence on perceived acceptability. The direct path from self/other to perceived acceptability was nonsignificant when perceived embellishment was included in the model, indicating that perceptions of embellishment mediate the belief that enhancing products are less acceptable for others to use than oneself. In addition, the perception that one's own natural potential for performance is greater than others' likewise mediates the relationship between self/other and perceived acceptability of enhancing product use.

Finally, these differences in perceived fairness had other consequences for the user if that user was not the self. Perceived acceptability of the use of enhancing products was positively related to perceived deservedness of the job and negatively related to perceived obligation to disclose use of self-enhancing products. The direct path between perceived ability and perceived deservedness was also significant, as were the direct paths from self/other to perceived deservedness and perceived obligation to disclose, indicating that in general, even without considering how fair it was to use Zatex here, people tend to see themselves as more deserving and less obligated to disclose use of self-enhancing products than others.

Discussion

Study 3 participants believed that it was more acceptable for a job candidate to use a neuroenhancing medication to perform better at a job interview when they were the candidate than when someone else used the drug to get the job. This belief in turn predicted participants' tendency to judge that they deserved the job more than the other candidate when they were hired after using such a drug and that they were less obligated to report use of such a drug to a potential employer. This self-other double standard was ultimately related to differences in the degree to which participants saw these products as embellishing their own versus others' abilities as well as to the amount of potential participants saw themselves versus others as possessing. Although participants believed the neuroenhancing medication in this scenario was more effective for the other person than for themselves, this perception did not explain differences in how participants interpreted the effects of the drug for self and other nor self-other ethical double standards.

STUDY 4: STAYING CALM AND WELL RESTED

The most obvious setting for double standards for the fairness of using enhancing products is a competitive setting. A person would likely perceive the outcome of a competition as unfair if he or she were to abstain from using an enhancing product and lose to another person who did not. But would that same person acknowledge a lack of fairness if he or she were instead the one who benefited from the product? The scenario in study 4 was thus similar to that of study 3, except that perceptions of the other person's behavior were from the point of view of a fellow interviewee competing for the same job.

Study 4 had two other aims. One was to test the limits of the sorts of products that can lead to these self-other asymmetries. The Sport Beans in study 1 were minimal and easily accessible to participants, but, akin to pharmaceuticals, they might be perceived as unnatural. Were participants reacting to the artificial nature of the specific enhancing intervention? Second, we were curious as to how strongly consumers held these double standards. Do people hold these beliefs in private to make themselves feel good only to abandon them if they are held accountable? Or do they sincerely believe that enhancing interventions work differently and are more fair for themselves to use than others, holding to this even when challenged? Study 4 adds a natural intervention—chamomile tea—and a within-participants design to test these questions.

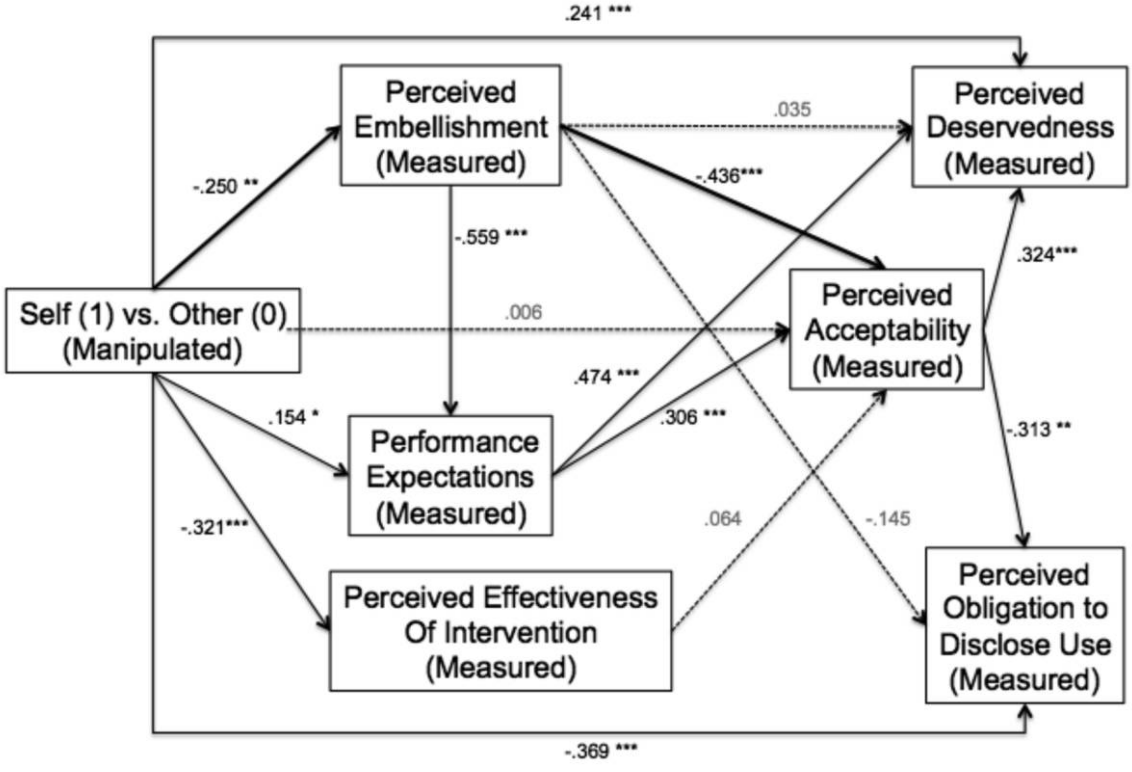
Method

Participants. Four hundred and one adults participated in an online survey via Amazon Mechanical Turk and received $0.15 Amazon.com credit.

Procedure. As in study 3, participants considered a scenario in which a job candidate used an enhancing intervention to perform better during a job interview. However, in this study, participants imagined that they used the intervention to do well and subsequently got the job, and they also imagined that another candidate they were competing against used the intervention and got the job, in counterbalanced order. Further, in half of the surveys, the intervention was a drug that calms its users; in the other half, it was a cup of chamomile tea. See appendix A for the full scenario. This meant, for example, that some participants imagined that they had a cup of chamomile tea before their interview and responded to the dependent measures, and then on the next page, they imagined that the other candidate had a cup of chamomile tea before the interview and re-

FIGURE 3

STRUCTURAL EQUATION MODELING PATH DIAGRAM, STUDY 3



NOTE.—*$p < .05$; **$p < .01$; ***$p < .001$.

sponded to the same dependent measures with that person in mind.

To examine whether participants held double standards, they indicated, "How acceptable was it for you [the applicant] to have taken Zatex [have had a cup of chamomile tea] before the interview?" on a scale from 1 = "completely unacceptable" to 7 = "completely acceptable."

Next, to assess perceptions of embellishment, we asked participants, "To what extent did taking Zatex [having a cup of chamomile tea] before the interview make you [the applicant] appear to have abilities you don't [he doesn't] actually possess?" on a scale from 1 = "not at all" to 7 = "very much." To assess perceptions of enablement, participants indicated, "To what extent did taking Zatex [having a cup of chamomile tea] before the interview help reveal your [the applicant's] true abilities in the interview?" on a scale from 1 = "not at all" to 7 = "very much."

Finally, to examine effectiveness, participants indicated, "How nervous do you think you [the applicant] would have felt at the interview, having taken Zatex [had a cup of chamomile tea], compared to how nervous you [he] would have felt without having taken Zatex [had a cup of chamomile tea]?" on a scale from 1 = "no difference at all" to 7 = "much less nervous."

Results

We conducted two sets of analyses on these data. In the first, because participants did not know that they would be rating both people in the scenario, we treated the first person that participants considered as a simple 2 (self or other) by 2 (Zatex or tea) between-subjects design to make the results comparable to our previous studies. In the second set of analyses, we included the second person that participants considered and treated the data as a 2 (first person or second person) by 2 (self first or other candidate first) by 2 (Zatex or tea) mixed design, with first person versus second person as a within-subjects variable, to test whether participants maintained that self-other differences exist even when asked to explicitly compare the two.

How Effective Are the Interventions Perceived to Be? Participants thought that taking Zatex would be more effective at relieving anxiety ($M = 5.03$, SD = 1.53) than

having a cup of chamomile tea before the interview (M = 3.97, SD = 1.60; $F(1, 397) = 47.11$, $p < .001$, $\eta_p^2 = .11$). They also thought that either intervention would have less of an effect on how nervous they felt (M = 4.34, SD = 1.73) than on how the other candidate felt (M = 4.65, SD = 1.56; $F(1, 397) = 4.51$, $p = .03$, $\eta_p^2 = .01$). The interaction between user and intervention was significant ($F(1, 397) = 4.50$, $p = .03$, $\eta_p^2 = .01$), such that Zatex seemed more effective for the other candidate (M = 5.36, SD = 1.27) than for themselves (M = 4.71, SD = 1.69), whereas the tea seemed equally effective for themselves (M = 3.97, SD = 1.70) and the other candidate (M = 3.97, SD = 1.50). Thus, as before, we controlled for perceived effectiveness in all of the analyses that follow. The pattern of results is the same without this covariate; see online appendix B for full analyses.

Do the Interventions Enable or Embellish Self and Other? Perceptions of the effects of the intervention differed depending on the intervention participants considered and who utilized it. Participants indicated that it was less embellishing when they used either intervention (adjusted M = 3.17, SE = .10) than when the other candidate did (adjusted M = 3.90, SE = .10; $F(1, 396) = 24.32$, $p < .001$, $\eta_p^2 = .06$). Participants also thought that Zatex was more embellishing (adjusted M = 4.29, SE = .11) than a cup of tea (adjusted M = 2.79, SE = .11; $F(1, 396) = 93.65$, $p < .001$, $\eta_p^2 = .19$). There was no significant interaction between user and intervention ($F(1, 396) = 2.04$, $p = .15$, $\eta_p^2 = .005$). Across both interventions, participants believed that they were more enabled (adjusted M = 4.22, SE = .12) than was the other candidate (adjusted M = 3.49, SE = .12; $F(1, 396) = 17.62$, $p < .001$, $\eta_p^2 = .04$). Zatex seemed slightly, but not significantly, less enabling (adjusted M = 3.71, SE = .13) than did the tea (adjusted M = 4.00, SE = .13; $F(1, 396) = 2.60$, $p = .11$, $\eta_p^2 = .007$), with no interaction ($F(1, 396) = .54$, $p = .47$, $\eta_p^2 = .001$). See figure 4.

Do Participants Hold Double Standards? They do. Participants indicated that it was more acceptable when they used either intervention (adjusted M = 5.62, SE = .11) than when the other candidate did (adjusted M = 5.28, SE = .12; $F(1, 396) = 4.34$, $p = .04$, $\eta_p^2 = .01$). Participants also thought that taking Zatex was less acceptable (adjusted M = 4.40, SE = .12) than was drinking tea (adjusted M = 6.50, SE = .12; $F(1, 396) = 149.79$, $p < .001$, $\eta_p^2 = .27$). There was no interaction between user and intervention ($F(1, 396) = .61$, $p = .43$, $\eta_p^2 = .002$). See figure 4.

We next tested whether self-other double standards for the use of Zatex were mediated by differences in perceived embellishment and enablement. We regressed the dependent measure simultaneously onto the independent variable and potential mediators while controlling for effectiveness. Indeed, both perceived embellishment ($\beta = -.46$, $t = -5.65$, $p < .001$) and enablement ($\beta = .49$, $t = 6.66$, $p < .001$) significantly predicted acceptability. The effect of condition was reduced (from $\beta = .46$, $t = 1.57$, $p = .12$ to $\beta = -.33$, $t = -1.37$, $p = .17$). Bootstrapping procedures (Preacher and Hayes 2008) indicated that both indirect effects were significant (embellishment: 95% CI = .17 to .71; enablement: 95% CI = .17 to .72), indicating that embellishment and enablement are both mediators of acceptability. In addition, when this same analysis is performed regarding tea, perceived embellishment again is a significant mediator of acceptability ($\beta = -.23$, $t = -4.37$, $p < .001$; 95% CI = .04 to .26), although in this case enablement is not ($\beta = .04$, $t = .98$, $p = .33$; 95% CI = −.003 to .09).

Do People Truly Believe These Double Standards Are True? Because social desirability would dictate that participants treat themselves and others the same, if participants still maintain that there are self-other differences in the use of enhancing interventions when they rate both themselves and the other together, they must truly believe these differences to be true. Our data suggest that this is the case, and the same patterns found in the previous analyses of responses to the first person are found in analyses of responses to the second person as well. In the following analyses, we control for effectiveness using a nervousness difference score in which we subtract participants' ratings of the second person from their ratings of the first; neither this covariate nor one in which participants' ratings of the other person are subtracted from those of the self has a substantive impact on the results. Doing so, for acceptability, we find a 2 (first person or second person) by 2 (self first or other candidate first) by 2 (Zatex or tea) interaction, such that participants' responses differ depending on who is rated first, which person is assessed, and whether the intervention is Zatex or tea ($F(1, 393) = 5.78$, $p = .02$, $\eta_p^2 = .01$). Importantly, for both interventions, people believe that using the enhancement is more acceptable for self than for other ($F(1, 393) = 25.97$, $p < .001$, $\eta_p^2 = .06$), regardless of the order in which the people in the scenario are encountered. This is supported by nonsignificant interactions between the type of intervention and who gets rated first ($F(1, 393) = .01$, $p = .94$, $\eta_p^2 = .000$) and which person is being rated ($F(1, 393) = .21$, $p = .65$, $\eta_p^2 = .001$). See table 1 for means.

With regard to perceived embellishment and enablement, a similar pattern emerges. Embellishment shows a three-way interaction ($F(1, 393) = 8.77$, $p = .003$, $\eta_p^2 = .02$). Further analysis again reveals that across both interventions, people believe that the intervention is more embellishing of the other person than of them in whichever order they are encountered ($F(1, 393) = 15.63$, $p < .001$, $\eta_p^2 = .04$). Type of intervention does not interact with either the person being rated ($F(1, 393) = 1.15$, $p = .28$, $\eta_p^2 = .003$) or who gets rated first ($F(1, 393) = .64$, $p = .42$, $\eta_p^2 = .002$). Finally, because perceived enablement does not substantially differ between chamomile tea and Zatex, there is no significant three-way interaction ($F(1, 393) = 2.09$, $p = .15$, $\eta_p^2 = .005$). However, participants believe that both interventions are more enabling for themselves than for the other person ($F(1, 393) = 14.11$, $p < .001$, $\eta_p^2 = .04$), regardless of the order in which they are rated. There is no interaction between the type of intervention and who is rated first

FIGURE 4

PERCEIVED ACCEPTABILITY (*A*), EMBELLISHMENT (*B*), AND ENABLEMENT (*C*) OF SELF AND OTHER USING ENHANCING INTERVENTIONS TO GET A PROMOTION, STUDY 4

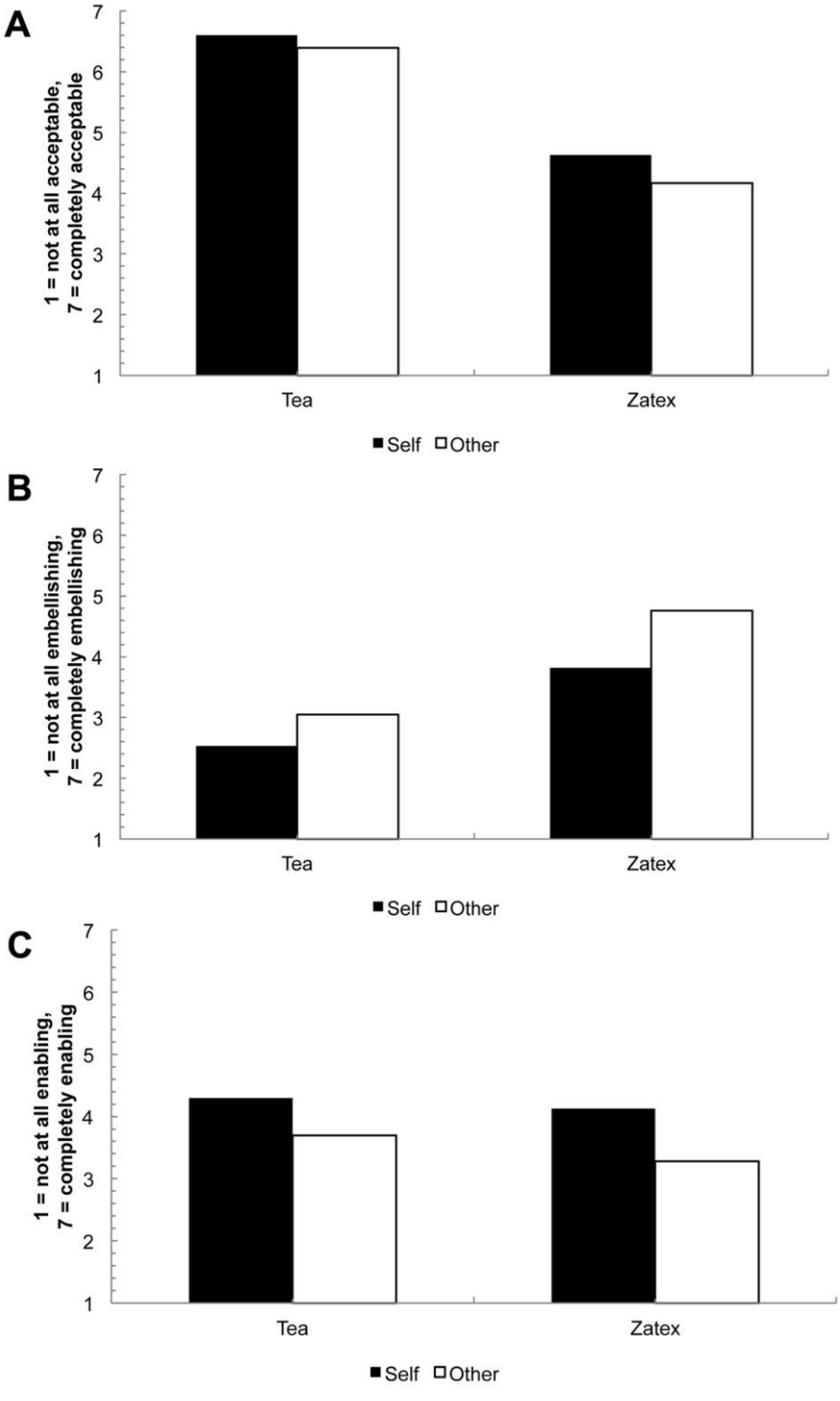


TABLE 1

WITHIN-SUBJECTS RATINGS OF SELF AND OTHER, STUDY 4

	First person	Second person	Interaction
How acceptable was it to use the enhancement?			
Self | other	5.62 (.11)	5.30 (.12)	$F(1, 393) = 25.97$, $p < .001$, $\eta_p^2 = .06$
Other | self	5.29 (.12)	5.46 (.12)	
How embellishing is the enhancement?			
Self | other	3.15 (.11)	3.49 (.11)	$F(1, 393) = 15.63$, $p < .001$, $\eta_p^2 = .04$
Other | self	3.93 (.11)	3.81 (.11)	
How enabling is the enhancement?			
Self | other	4.18 (.12)	3.97 (.12)	$F(1, 393) = 14.11$, $p < .001$, $\eta_p^2 = .06$
Other | self	3.53 (.12)	3.81 (.12)	

NOTE.—Estimated marginal means and standard errors are reported in the table. There were no significant interactions between which intervention they considered and either the order in which they rated the candidates or which person they were rating, so ratings are collapsed across intervention.

($F(1, 393) = .03$, $p = .86$, $\eta_p^2 = .000$) and a marginal interaction between intervention and which person is being rated ($F(1, 393) = 3.42$, $p = .07$, $\eta_p^2 = .009$). Overall, these results support the view that participants truly believe the double standards they espouse in this and previous studies, even in the face of pressure to treat both self and other in the same way.

Discussion

Study 4 again demonstrated that people have different perceptions of the effects of enhancing products depending on who uses them and that this influences how fair they perceive the use of those products to be. Participants viewed the use of both artificial and natural interventions as more fair than the same behavior performed by another person, suggesting that disapproval of others' use of enhancing interventions goes beyond a distaste for pharmaceutical or other "unnatural" improvements. Study 4 also demonstrated that both perceived embellishment and enablement separately influence participants' views of the effects of enhancements. Although embellishment is the stronger influence on perceptions of acceptability, perceived enablement by enhancement does differ between the self and others. We suspect that the reason why the pattern in study 4 differs from that of study 2 is that in study 2 the enhancing drug is described as adding extra focus (i.e., embellishing its users), whereas here the drug is framed more as removing extra nervousness that should not be there (i.e., enabling users' true abilities to show). And again we find the same pattern of results when we create one measure by subtracting enablement from embellishment: participants believed that they were more enabled and less embellished ($M = -1.05$, SD $= 2.71$) than the other candidate ($M = .39$, SD $= 2.48$; $F(1, 396) = 35.65$, $p < .001$, $\eta_p^2 = .08$); Zatex ($M = .60$, SD $= 2.78$) seems more embellishing than tea ($M = -1.25$, SD $= 2.27$; $F(1, 396) = 49.00$, $p < .001$, $\eta_p^2 = .11$), and there was no interaction ($F(1, 396) = 1.92$, $p = .17$, $\eta_p^2 = .005$). The difference score was a significant mediator of acceptability for both Zatex (95% CI: .46 to 1.20) and tea (95% CI: .05 to .25).

Finally, study 4 allowed us to demonstrate the extent to which participants believe in the enhancement double standard. Regardless of the order in which participants rated themselves and the other candidate, they explicitly indicated that enhancing interventions were less embellishing, more enabling, and more acceptable for themselves. Given the opportunity to treat self and other equivalently, they give extra credit to themselves. Although there is a slight tendency for participants to anchor on the first person rated and for the difference between self and other to be smaller in the second set of ratings, neither of these effects is consistent or reliable.

STUDY 5: MESSAGE FRAMING

One intriguing implication of studies 3 and 4 is that consumers' attitudes toward policies regulating enhancing products may vary depending on whom the policy targets. If people think it is less fair for others to use enhancing products than themselves, it is likely that they will be more in favor of policies or regulations that will limit the use of those products when they are targeted toward people in general, even if they logically might be one of those people. If, however, the policies are framed more as rules or regulations that will specifically (although not solely) affect them, they are likely to seem less fair because those rules would be limiting a more acceptable behavior, enabling one's true traits and abilities. In study 5, students considered a change to their university's honor code that would prohibit the nonprescribed use of attention-enhancing drugs like Ri-

talin and Adderall. Universities, Duke University being the most prominent example, have in fact instituted or are considering such policies to stem nonprescribed use of these stimulants (Schwarz 2013). This new policy was framed as something they personally, or students at their university, would need to agree to; the policy would necessarily apply to participants either way, so self-interest was held constant. Regardless, we expected to find that participants believe the drugs would embellish students in general more so than they would embellish themselves, and this would predict the fairness of the policy.

Method

Participants. Seventy-seven undergraduates at the University of Florida either volunteered to participate at locations around campus or received extra credit in marketing and other business classes in exchange for their participation.

Procedure. Participants imagined that, to increase academic integrity, the administration at their university would like to augment the honor code with a clause regarding the off-label or nonprescription use of Ritalin, Adderall, and other medications to increase concentration and energy in academic settings. Participants considered a version of the policy that was framed in either the first or third person, namely, "I [UF Students] will not take medications that might inflate my [their] academic performance on a test or assignment unless I [they] have been validly diagnosed with a relevant medical condition."

To examine the extent to which the drugs were seen as embellishing their users' academic performance, we asked participants, "In your opinion, how would such medications affect your [students'] academic performance (assuming you [they] have NOT been validly diagnosed with an attention disorder)?" on a scale from 1 = "These drugs would enable me [students] to perform up to my [their] true academic abilities" to 7 = "These drugs would enhance my [students'] performance above and beyond my [their] true academic abilities."

To assess participants' opinions of the policy, we asked participants, "How fair to you [to UF students] do you think it would be for the Administration to make you [them] agree to such a policy?" on a scale from 1 = "It is completely unfair to make me [students] agree to such a policy; I [they] should be able to take such medications if I [they] feel it's in my own [their own] best interest" to 7 = "It is completely fair to make me [students] agree to such a policy; the university is acting in everyone's best interest." Finally, participants indicated if they had ever used such drugs for a test or assignment.

Results

A minority of participants ($N = 16$) indicated that they had used Ritalin or other such drugs for academic assignments. The remaining analyses control for participants' use of the drugs; the pattern of results is similar, although weaker, without this covariate. See online appendix B for complete alternate analyses.

Do These Medications Enable or Embellish Self and Other? Participants believed that their own nonprescription use of drugs that increase their concentration and energy would be less embellishing (adjusted $M = 3.79$, SE = .23) than the use of those same drugs by students in general (adjusted $M = 4.49$, SE = .25; $F(1, 74) = 4.12$, $p = .046$, $\eta_p^2 = .05$).

Do Participants Hold Policy Double Standards? Participants thought the new policy against the nonprescribed use of attention-enhancing medication to be significantly less fair when it was framed as something that they personally would have to agree to (adjusted $M = 4.03$, SE = .29) than when it was something that students in general would have to agree to (adjusted $M = 4.92$, SE = .31; $F(1, 74) = 4.38$, $p = .04$, $\eta_p^2 = .06$).

We next tested whether self-other differences in the perceived fairness of the policy were mediated by differences in perceived embellishment of academic performance. Given that self versus other affected perceived embellishment and fairness of the policy, we regressed fairness simultaneously onto self/other condition and perceived embellishment, controlling for past use of attention-enhancing drugs. Perceived embellishment significantly predicted perceived fairness of the policy ($\beta = .28$, $t = 2.02$, $p = .048$), and the effect of condition on perceived fairness was no longer statistically significant ($\beta = -.70$, $t = 1.62$, $p = .11$), indicating that the mediation was full. Although in this case bootstrapping procedures (Preacher and Hayes 2008) indicated that the indirect effects of perceived enhancement were just shy of significance (95% CI = −.59 to .01), this pattern is consistent with previous studies and with the idea that people perceive themselves as more worthy of exception from policies that would prohibit the use of enhancing products as these products seem to have more enabling (and thus more acceptable) effects on themselves than they do on other people.

Discussion

In study 5, differences in how embellishing attention-enhancing drugs were perceived to be led students to be less in favor of policies that would limit their ability to use enhancing products to succeed at academic tasks when those policies were explicitly framed as something that they personally, rather than students at their university in general, would need to abide by. This suggests that people's opinions toward policies regarding the use of enhancing products are malleable and that reframing who would be targeted by or affected by such policies can change people's support for them. Study 5 further speaks against a self-serving bias interpretation of our effect. Whether the policy is framed as affecting the participant or affecting all students, the honor code would prevent participants from using concentration-enhancing medication. But when their focus shifts to the

consequences of allowing others to use the medications, participants become more willing to forgo their own use of the medications to prevent others from embellishing their abilities beyond their true levels.

GENERAL DISCUSSION

Our studies reveal that consumers believe others' use of enhancing products and services to embellish their traits and abilities more than their own use of the exact same products. Participants believed that products that improve concentration or intellectual performance, make a better impression, or relieve anxiety are more likely to help them personally tap into their full potential but that they embellish others' performance beyond their true capabilities. These different perceptions of the enhancing nature of such treatments for oneself and others create an ethical double standard: people believe that it is less fair for others to use enhancing interventions than it is for themselves to do so. Furthermore, double standards in the use of enhancing products by oneself and others have implications for how people believe such products ought to be used and regulated. The fact that participants perceived the use of enhancing products as less fair for others than for themselves led them to believe that a user was less deserving of success and more duty-bound to disclose their use when another person was the user than when they themselves were the user. Encouraging people to consider whether they or others will ultimately be using such products led people to be more in favor of policies that would limit the use of enhancing products when they were framed as targeting people in general than when they more expressly targeted the self.

Self-other double standards are fueled not only by different perceptions of embellishment for oneself and others but also by beliefs about the level of ability attainable by oneself and others. Study 3 demonstrated that another contributor to self-other double standards is that people have higher expectations for what they may ultimately be able to accomplish than for what others will be able to accomplish. But neither different perceptions of whether such treatments embellish self and others nor self-other ethical double standards could be explained by a self-serving bias: self-other asymmetries occurred in both competitive and noncompetitive settings, demonstrating that differences in perceived fairness occur whether or not the other person benefits from the use of an enhancing product to the exclusion of the self. Participants also grant that the use of enhancements by another person is justified when that person has a disability. Further, enhancements seemed to be more effective when used by other people than by oneself, but this did not explain differences in perceived embellishment or ethicality.

Influences on Double Standards

Although perceptions of enablement and embellishment are integral components of self-other double standards in the use of enhancing products and services, those double standards and the perceptions themselves are likely to be multiply determined. One source of these double standards may be that people have particularly cynical views of others' motives and are inclined to believe that the other person's intention was to embellish their traits rather than one's own purer motive to enable them (e.g., Miller 1999). Our scenarios in studies 3 and 4 emphasized that the job candidate, both self and other, was attempting to attain her/his true potential, not exceed it. Nevertheless, it is possible that without that information, participants would assume the worst of others' intentions, exacerbating the double standard we found here. This suggests an interesting avenue for future research: What is the relative contribution of intentions and outcome on judgments of the ethicality of enhancing products? Past research suggests that intentions matter and that behavior believed to stem from desires to embellish one's traits, that is, to cheat, will be judged more harshly (e.g., Pizarro, Uhlmann, and Salovey 2003). One might also expect that information about the outcome of use of an enhancing product might shift beliefs about its use. In study 5, past experience with an enhancing medication seemed to matter. Those participants who indicated prior use of attention-enhancing medication believed it to be equally embellishing of themselves ($M = 4.42$) and the other ($M = 4.50$) and more embellishing of themselves than believed by those without experience with the drug ($M = 3.60$); however, self ($M = 2.58$) versus other ($M = 3.75$) differences in perceived fairness of the policy forbidding them shrank but remained. While this is admittedly a small sample, it suggests that personal information about the magnitude or quality of the outcome of using enhancing products can alter people's beliefs about the nature of their use but that it may not eliminate asymmetric perceptions of ethicality.

Another possible contributing factor to self-other ethical moral standards for the use of enhancing treatments is that people desire to see themselves as good and moral people, at least more so than others (e.g., Ditto, Pizarro, and Tannenbaum 2009; Fetchenhauer and Dunning 2006). Therefore, they are more motivated to rationalize their own moral transgressions than others' (Valdesolo and DeSteno 2008). People put considerable effort into maintaining the appearance of being fair without actually being fair (Batson, Collins, and Powell 2006), and once a moral transgression is committed, people seek ways to mentally neutralize it (Chatzidakis, Hibbert, and Smith 2007), to make it seem less important or immoral. While it is clear from our mediational data that more cognitively-based beliefs about the self and others influence the double standards we demonstrate in studies 3 and 4, it is highly likely that the motivation to downplay a potentially "bad" behavior is at work as well. In fact, people may even deceive themselves into believing that the increased skills they showed while using an enhancing product actually belong to them, making them even more convinced that they will be enabled by their repeated use (Chance et al. 2011).

Implications for Marketers and Consumers

Consumers who purchase and use enhancing products should carefully consider whether to admit that use to others, especially in light of research suggesting that people are overly prone to personal disclosure (e.g., John, Acquisti, and Loewenstein 2011). It may not occur to consumers to be concerned about hiding their use of enhancing products; after all, they know the drugs are just helping them demonstrate abilities they already have. But the studies in this article suggest that other people will see that use as endowing them with skills they should not have, as being unfair, or even as reflecting possible lower overall skill levels.

Indeed, enhancing pharmaceuticals and other technologies present their marketers and users each with a challenge with regard to making their use seem more acceptable to others. Changing others' views of such behavior to match one's own may be an almost insurmountable problem (e.g., Pronin and Kugler 2007), although a few tactics may help. Our research suggests three routes by which to make it palatable to others: (1) to describe the products' effects as enabling true abilities rather than embellishing beyond true abilities, (2) to encourage consumers to consider themselves rather than others using the products, and (3) to make products seem less out of the ordinary. Our initial advice would be that those who disclose that they use these products should do everything they can to prove that the products enable them rather than embellish their abilities. The more evidence they provide that under the right conditions they could attain the same levels of performance on their own, the more likely others will be to see the drugs as "enablers" rather than "embellishers." Second, study 5 indicates that keeping the focus on oneself as the potential user of the product or service will make it more palatable. The results of that study suggest that a simple change in framing can lead people to see restrictions on such interventions' availability to be less fair because they believe the products are less embellishing when considering themselves.

Third, it may also help to make the product seem less extraordinary. This may be done by making interventions seem natural or common: although we still found a self-other asymmetry in fairness, participants in study 4 were much less bothered by a common enhancing behavior (i.e., chamomile tea) than one that was out of the ordinary (i.e., prescription medication), and the less a treatment is limited to those with money, connections, or privilege, the more fair it may seem. Another approach may be to make such products seem necessary. When an enhancing intervention was used to overcome another's deficit in study 2, participants did not find it any more embellishing than their own use. Consider the continuum of energy-enhancing products, from coffee to energy drinks to pure caffeine tablets to prescription medications like Provigil. Few people would totally condemn drinking a cup of coffee for a boost of energy, and few people would give blanket approval to the off-label use of prescription medication for the same purpose. But products more extreme than coffee, but readily available, commonly consumed, and accessible to almost anyone, may be seen as distasteful or undesirable to some but acceptable for use by themselves and others, depending on how they are described and whether they affect perceptions of distributive or competitive fairness (e.g., Scheske and Schnall 2012).

Future Directions

Part of the reason why enhancing technologies make people uncomfortable is that they seem to circumvent effort in obtaining better results (e.g., Gladwell 2001; Lucke et al. 2011). Abilities acquired through effort are also perceived more similarly to natural abilities than to abilities acquired via an enhancing product like medicine (Lockhart, Keil, and Aw 2013). Many potentially enhancing interventions do require effort to see results: mood-altering medications work best in concert with talk therapy, steroids require exercise and training to build strength, weight loss drugs still necessitate better diet and exercise, and so on. How do people reconcile the fact that success following the use of enhancing treatments can indicate two things: that the user embellished their abilities or that they put in effort to achieve their goals? And would moral judgments differ if the effort required was emphasized?

It would also be interesting to investigate the degree to which practice at or investment in detecting potential influences how fair the use of enhancing products and services is seen to be. People do at times seek out or prefer people with unproven potential over those with equivalent known ability (Tormala, Jia, and Norton 2012). Certainly parents will be particularly invested in perceiving potential in their children (e.g., Bird 1988; Galper, Wigfield, and Seefeldt 1997); after all, their main task as a parent is to see that their child's potential comes to fruition. This suggests that parents will be more accepting of their own children's use of enhancing products and services than other people would be, or than they would be of other people's use of the same products. Indeed, the closer a loved one or friend is to the self , the more people perceive that person as they would themselves (e.g., Aron and Aron 1997). Beyond motivation, practice at perceiving potential may also have an impact on beliefs about these kinds of treatments. For instance, coaches and scouts are particularly practiced at looking for the potential ability of the athletes under their purview. Perhaps this is part of the reason why so many teams and coaches have turned a blind eye to the use of PEDs: they see the unattained or blocked potential that may exist in their teammates and believe the drugs will enable them to reach their peak performance, rather than unfairly surpass it. Perhaps Mark McGwire's teammates also saw only his gift to hit home runs rather than the steroidal packaging that made that gift seem bigger than it was.

DATA COLLECTION INFORMATION

The second author supervised collection of data for the first study by research assistants at the University of Cincinnati in the spring of 2013. Both authors oversaw collection of data for the second study at the University of Florida by a lab

manager in the spring of 2012. Data for studies 3 and 4 were collected via Mechanical Turk by both authors in the spring of 2010 (study 3) and the fall of 2013 (study 4). Finally, the data for study 5 were collected by the authors and a lab manager in the spring of 2011 at the University of Florida. The data for all studies were analyzed jointly by both authors.

APPENDIX A
QUESTION WORDINGS

Study 2

Participants imagined that they, an acquaintance, or an acquaintance with ADHD had taken a prescription medication to improve focus and concentration on an exam. The wording for the self condition is in the text, and the wording for the other two conditions is in brackets.

Suppose that you and a coworker, Jennifer, are interested in getting your MBAs and are studying together for the GMAT. The GMAT is a standardized test that measures verbal, quantitative, and writing skills. The score you get on this test will play a large role in whether you get accepted to your preferred MBA program.

To prepare for the exam, you and Jennifer both enroll in Kaplan's GMAT prep course, which consists of 9 classroom review sessions and 8 practice tests. Both you and Jennifer score between 550 and 600 (out of 800) on the practice exams and have average scores of 570.

The Kaplan instructors advise that to do well on the GMAT, it will be important for you to maintain your concentration for several hours and block out any distractions from the other test takers. Beyond the stressfulness of the test situation, the GMAT will take four hours to complete and will be administered to 20–30 people at a time, so the instructors warn you that some people find it difficult to maintain concentration in that setting.

You believe [Jennifer believes] that you have [she has] the potential to stay as focused and undistracted as you need [she needs] to in order to perform well on the test. Even though you do not have [she does not have] ADHD or any disability that impairs your [her] ability to stay focused and undistracted, because of the conditions under which you'll [she'll] be taking the exam, you have your doctor give you [she has her doctor give her] a prescription for Zeltor, a medication that improves focus and concentration, and you take [she takes] it the day of the GMAT. The exam seems to go well—you [she] had no problem concentrating for the full four hours and were not at all distracted by the other test takers.

In the end, you get a GMAT score of 610 [565], and Jennifer gets a score of 565 [610].

In the other with ADHD condition, we added a paragraph and changed the paragraph after that, as follows.

Jennifer was diagnosed with ADHD when she started college. She didn't really need medication to treat it then. She was able to accomplish her work by putting in longer hours of studying than her fellow students, and by getting extra time to take exams.

Jennifer believes that she has the potential to stay as focused and undistracted as she needs to in order to perform well on the test. Because Jennifer's ADHD makes it difficult for her stay focused and undistracted, and because of the conditions under which she'll be taking the exam, she has her doctor give her a prescription for Zeltor, a medication that improves focus and concentration, and she takes it the day of the GMAT. The exam seemed to go well—she had no problem concentrating for the full four hours and was not at all distracted by the other test takers.

PEDs and Enhancement Questions

All participants answered these questions about performance-enhancing drugs on a 1–7 scale.

We are interested in understanding people's opinions about the use of steroids and other performance enhancing drugs (PEDs) in sports and athletic competitions. Please read the questions carefully, and answer them as best you can.

As part of our interest, we want to know what you think of the drugs' effects and what they do, abstractly, to the athletes who use them. What do you think PEDs' ultimate effect is? (1 = "They help reveal athletes' true abilities"; 7 = "They make athletes appear to have abilities they don't actually possess").

How fair to *sports fans* do you think athletes using PEDs are? (1 = "Completely fair; fans deserve to see the most entertaining game possible"; 7 = "Completely unfair; fans deserve to know athletes' true skills").

How fair to *other athletes* do you think athletes using PEDs are? (1 = "Completely fair; they are available to any athlete to use"; 7 = "Completely unfair; they change the rules of the game").

Do you think the major sports leagues should relax or strengthen their policies against PEDs? (1 = "They should definitely relax them"; 7 = "They should definitely strengthen them").

Do you think that the use of PEDs in sports should be a legal issue, such that athletes who get caught using them are subject to fines or other legal penalties? (1 = "Definitely NO"; 7 = "Definitely YES").

Study 3

Participants imagined that they were either a job candidate who was interviewing for a sales position or the manager who was interviewing a candidate for that sales position and that they (or the job candidate they were interviewing) took an anti-anxiety drug to perform well at the interview and subsequently got the job. The wording for the self condition is in the text, and the wording for the other condition is in brackets.

Suppose that you are a job applicant, and you are interviewing for a sales position [Suppose that you are a manager,

and you are interviewing a candidate for a sales position]. The job requires someone who is easy-going and relaxed, who will get along well with the rest of the staff, and who can calmly deal with customer issues.

Interviews are nerve-wracking experiences, though, and you were [the person you are interviewing was] worried that your [his] true potential to be calm and collected would not show in an interview context. Because of this, you [he] took Zatex, a prescription medication that helps relieve anxiety. The interview goes really well, and you are hired [you hire the person] on the spot.

Study 4

Participants were randomly assigned to one of four conditions: in half of the surveys, the participants imagined using an enhancing intervention to do well at the interview and subsequently getting the job, followed by imagining the same thing happening to another candidate; and in the other half, they imagined a candidate they were competing against using the intervention and getting the job, followed by imagining themselves doing the same thing. Further, in half of the surveys, the intervention in question was taking a drug that calms its users; in the other half, it was drinking a cup of chamomile tea. The scenarios in which the interviewee takes the medication read as follows (*the wording for the self-first condition is in the text, and the wording for the other-first condition is in brackets*).

Suppose that you have been applying for a promotion. There is one potential position that you are particularly excited about: it will be challenging and rewarding, requires your exact skill set, and the pay is great.

You find out that the company is considering only two people for the position: you and a fellow coworker. The company is bringing you both in for interviews, and they are particularly interested in someone who is easy-going and relaxed, who will get along well with the rest of the staff, and who can calmly deal with customer issues.

You believe that you have [the other candidate believes that he has] the potential to get along really well with the other employees and handle any situation that might come up, but in order to guarantee that you don't [he doesn't] come across as too nervous or tense in the interview, you take [the other job candidate takes] Zatex, a prescription medication that has been shown to help people calmly handle stress and anxiety. Your [His] interview goes really well. Two weeks later, you find out that you [the other candidate] got the position.

[Dependent variables here; then page break.]

Now, consider this scenario from a difference perspective. Imagine instead that the other job candidate believes that he has [you believe that you have] the potential to get along really well with the other employees and handle any situation that might come up, but in order to guarantee that he doesn't [you don't] come across as too nervous or tense in the interview, the other job candidate takes [you take] Zatex, a prescription medication that has been shown to help people calmly handle stress and anxiety. His [Your] interview goes really well.

Two weeks later, you find that [the other job candidate [you] got the position.

Now, having considered this scenario from two different perspectives, answer the following questions about the other applicant's [your] interview process—you may provide the same answers, or you may adjust your answers as you see fit.

In the version where the interviewee drinks tea in order to stay calm, the second to last paragraph of the scenario read as follows:

You believe that you have [The other candidate believes that he has] the potential to get along really well with the other employees and handle any situation that might come up, but in order to guarantee that you don't [he doesn't] come across as too nervous or tense in the interview, you have [he has] a cup of chamomile tea, a type of tea that has been shown to help people calmly handle stress and anxiety. Your [His] interview goes really well.

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