Research article

The inner speech of behavioral regulation: Intentions and task performance strengthen when you talk to yourself as a You

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Abstract

People often talk to themselves using the first-person pronoun (I), but they also talk to themselves as if they are speaking to someone else, using the second-person pronoun (You). Yet, the relative behavioral control achieved by I and You self-talk remains unknown. The current research was designed to examine the potential behavioral advantage of using You in self-talk and the role of attitudes in this process. Three experiments compared the effects of I and You self-talk on problem solving performance and behavioral intentions. Experiment 1 revealed that giving self-advice about a hypothetical social situation using You yielded better anagram task performance than using I. Experiment 2 showed that using You self-talk in preparation for an anagram task enhanced anagram performance and intentions to work on anagrams more than I self-talk, and that these effects were mediated by participants' attitudes toward the task. Experiment 3 extended these findings to exercise intentions and highlighted the role of attitudes in this effect. Altogether, the current research showed that second-person self-talk strengthens both actual behavior performance and prospective behavioral intentions more than first-person self-talk. Copyright © 2014 John Wiley & Sons, Ltd.

One of the fascinating phenomena in the study of the self is that, in the course of their daily lives, human beings talk not only with other people but also with themselves. Ninety-six percent of adults report engaging in an ongoing internal dialogue, and self-talk, particularly covert, is reported in over a quarter of sampled experiences (Heavey & Hurlburt, 2008; Winsler, 2009). Despite its omnipresence, knowledge about the form and effects of this internal discourse remains elusive. Students preparing for exams, speakers approaching lecterns, depressed and anxious individuals, and exercisers all commonly talk to themselves. They often repeat sentences such as *You/I can do it!* or *Stay focused!*, which are widely believed to help people "psych" themselves up, stay focused, maintain motivation, and ultimately perform better.

People can talk to themselves using either the first- or second-person pronoun (*I* vs. *You*), but they appear to favor *You* in situations that require explicit self-regulation (Zell, Warriner, & Albarracín, 2012). Yet the performance effects of self-talk using the second-person pronoun have surprisingly never been demonstrated. When people covertly discuss their thoughts, goals, plans, and moves, does self-addressing using the second-person, *You*, strengthen performance, attitudes, and behavioral intentions? As psychologists move forward in their understanding of conscious life and self-regulation, a precise explication of these cognitive and linguistic processes seems essential. These phenomena are likely to be important to researchers in social, cognitive, clinical, health, and sports

psychology, as well as practitioners in clinical, educational, and work settings.

Fragmented You/I Self-Talk

Previous evidence suggests that people prefer second-person self-talk when engaging in action and in difficult situations requiring self-regulation (Gammage, Hardy, & Hall, 2001; Zell et al., 2012), but select first-person self-talk when talking about their feelings (e.g., "I don't like doing this") (Oliver, Markland, Hardy, & Petherick, 2008). For example, in self-talk related to their fitness activities, exercisers tend to address themselves as *You* more frequently than as *I* (Gammage et al., 2001). Further, people address themselves as *You* when making autonomous rather than externally constrained choices, and in situations that challenge self-control and require self-regulation (Zell et al., 2012). The use of the second-person pronoun seems closely tied to the more imperative statements invoked when people engage in action (Zell et al., 2012) and when they are confronted with a difficult task requiring their full attention (Hermans & Hermans-Konopka, 2010). This point is illustrated in actress Anne Hathaway's description of filming "I Dreamed a Dream" in one take for "Les Misérables": "I closed my eyes and I remember thinking, 'Hathaway, if you do not do this in this moment, you have no right to call yourself an actor. […] just do your job.' I opened my eyes and I'm like (snaps fingers): 'Let's go.' And I did it." Given that situations

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that require self-regulation elicit the use of *You,* it is critical to find out if using *You* increases success at a task. Therefore, a fundamental question is whether the use of the second-person actually *enhances* self-regulation, as judged by performance in intellectual tasks and behavioral intentions. Moreover, general forms of thought implicitly elicited through the grammatical structure of self-talk are capable of influencing behavior and intentions (Albarracín, 2010, October; Albarracín, 2011, January; Senay, Albarracin, & Noguchi, 2010), suggesting that mere exposure to the word *You* could influence individuals' attitudes toward a goal.

There are several reasons why the use of *You* should facilitate self-regulation, performance, and behavioral intentions. First, successful self-regulation is likely to derive from successful social regulation. The sociogenetic perspective suggests that the meanings processed in the interpersonal dialogue begin as social, but over time, they become personalized and internalized into self-regulation (Clowes, 2007; Vygotsky, 1987). Through internalization, individuals gradually integrate parental and societal values, ideals, or standards into their self-system. During ontogeny, significant others (e.g., parents and teachers) help direct children's behavior using second-person instructions and encouragements (e.g., *You need to stay focused, You can do it*). In time, children become used to responding to directions provided in the second person. The language used in self-talk can be modeled from others (Lantolf, 2006), and thus, the initial external guidance associated with behavior regulation could have been internalized in the second person and may be appropriated and applied in a similar fashion when encountering situations that require self-regulation. This idea is confirmed by evidence showing that narrations using second-person pronouns looked as if they were described by significant others (such as parents or advisors) who were having a conversation with the self in the background (Jin, 2005, 2010). The internalization perspective is consistent with the habit theory and research (for a review, see Gardner, de Bruijn, & Lally, 2011), which shows that the repetition of a behavior upon encountering contextual cues leads, through associative learning, to the automatic activation of that behavior upon subsequent exposure to those contextual cues (Lally, van Jaarsveld, Potts, & Wardle, 2010). The habitual behavior is likely to persist even in the absence of external triggering cues. Initiation of the behavior might be "transferred" to internal, self-generated cues, which might enable people to acquire the means to manage their own activities using control mechanisms originally developed to respond to external commands (Clowes, 2007; Vygotsky, 1987). As a result, external encouragements expressed using *You* may become internalized and later engaged automatically in self-talk applied to similar situations requiring self-direction.

Further evidence supporting the idea that personal perspective can change the mental representations, attitudes toward, and outcomes of upcoming events is offered by the cognitive appraisal theories, which suggest that people have different responses (e.g., attitudes and emotions) to the same event depending on how they interpret the event along a number of appraisal dimensions (Alter, Aronson, Darley, Rodriguez, & Ruble, 2010; Blascovich, Seery, Mugridge, Norris, & Weisbuch, 2004; Jamieson, Mendes, Blackstock, & Schmader, 2010; Jamieson, Nock, & Mendes, 2012; Wood Brooks,

2014). Common appraisal dimensions include, for example, evaluating interest, pleasantness/happiness/enjoyment, and available resources for dealing with an event, and appraising events as relevant or important (Lazarus, 1991; Roseman, 2001; Scherer, 2001). Recent research shows that subtle changes in self-talk induced by adopting the second- or third-person perspectives (compared with the first-person perspective) are associated with more optimistic appraisals of upcoming stressful events and more positive mindsets (Kross et al., 2014). Optimistic appraisals occur when people perceive their personal resources as exceeding situational demands. They are characterized by positive attitudes toward future experiences (e.g., Folkman & Lazarus, 1985; Jamieson et al., 2012) and can have strong impacts on people's thoughts, feelings, and performance (Alter et al., 2010; Jamieson et al., 2012; Wood Brooks, 2013). Optimistic (challenge) appraisals are positively associated with appraisals of interest, which are positively associated with the perceived importance of the event and appraisals of happiness or joy (Ellsworth & Smith, 1988). Likewise, the second-person self talk may trigger positive attitudes and emotions, such as interest or excitement/happiness (Smith & Lazarus, 1993), which can in turn influence behavioral intentions and task performance.

When using the second-person pronoun, people tend to adopt a broader perspective, considering how a significant other might view the event (Jin, 2005, 2010). This may allow people to acquire the benefits of social support without directly interacting with another person, enabling them to reproduce encouragements and appraisals previously received from others and to generate more positive attitudes, intentions, and behaviors. Adopting the perspective of significant others may also influence people's appraisals of perceived importance or relevance of an activity or event. Events appraised as relevant are further evaluated (Silvia, 2005) and elicit positive attitudes such as interest and joy (Ellsworth & Smith, 1988; Kreibig, Gendolla, & Scherer, 2010). These positive attitudes might, in turn, improve performance and behavioral intentions.

The current research was designed to examine the potential performance advantage of using *You* in self-talk and the role of attitudes in this process. Three experiments compared behaviors and behavior intentions following the use of the second and first grammatical person as part of giving self-advice in an unrelated situation (Experiment 1) and as part of self-preparation/self-advice for an upcoming task (Experiments 2 and 3). The first two experiments compared intellectual performance following the use of the second and first grammatical person as part of giving self-advice in an unrelated situation (Experiment 1) and as part of self-preparation for an upcoming task (Experiment 2). Furthermore, Experiments 2 and 3 assessed participants' attitudes toward the task.

EXPERIMENT 1

The first experiment was an attempt to examine the effects of directly eliciting self-talk in relation to a common social situation. To avoid explicitly using first-person scenarios that would necessarily prime participants with *I* or *You* self-references, we used third-person scenarios, where participants

imagined the experiences of another person as if they were the actor. Thus, participants read the description of a person who had to make a choice and then were asked to provide self-advice in the second-person or first-person while imagining that they were that person. We expected that the mindset produced by the self-advice in that context would transfer to task performance in a subsequent anagram task.

Participants and Procedures

Participants were 95 introductory psychology students who received course credit for their participation. They were randomly primed with either *You* or *I* and read a vignette describing a college student of the same gender as the participant who had to make a choice. Participants were asked to imagine that they were the protagonists of the vignette, and they were asked to express the kinds of self-advice they would provide to themselves in that situation. Under the pretense that the researchers needed to collect thoughts in a special format that yields standardized data, participants were asked to start each statement with either *You* or *I*. Immediately after this priming task, participants were given the choice to work on the anagram task, and later reported their experience with the task.

Results and Discussion

None of the participants guessed the purpose of the experiment. Five participants were excluded from the study for incomplete data or failing to follow the instructions (e.g., used incorrect pronouns during the task). As shown in Figure 1(a), participants solved significantly more anagrams when they gave self-advice using *You* ($M = 17.53$, $SD = 3.04$) than when they

gave self-advice using *I* ($M = 15.96$, $SD = 4.13$), $t(88) = 2.05$, $p = .044$; $d = 0.43$. Experiment 1 thus demonstrated that self-talk using *You* produces better performance than self-talk using *I*.

EXPERIMENT 2

In Experiment 1, the effects of the grammatical person used in the self-talk were observed on a task unrelated to the content of the self-talk. Experiment 2 was an attempt to replicate our findings by measuring task performance after having participants prepare for the task using self-talk. This experiment also measured participants' attitudes toward the task.

Participants and Procedure

Participants were 143 introductory psychology students, who received course credit for their participation. They were randomly assigned to one of two experimental groups (i.e., *You* and *I* self-talk conditions), or to a control group. On the basis of evidence that providing opportunities for participation and choice is essential for self-regulation and fragmented self-talk (Zell et al., 2012), participants were given the opportunity to choose to work on the anagrams or to move to a new study. Participants in the experimental groups were instructed to prepare for an anagram-solving task by writing self-directed advice about how to proceed in this task. Under the pretense that researchers were trying to collect thoughts in a special format that yielded standardized data, they were asked to record the first 10 thoughts they had by beginning each statement with *I* or *You*. Immediately after the prime, participants were given the choice to work on the anagram task. Participants in the control
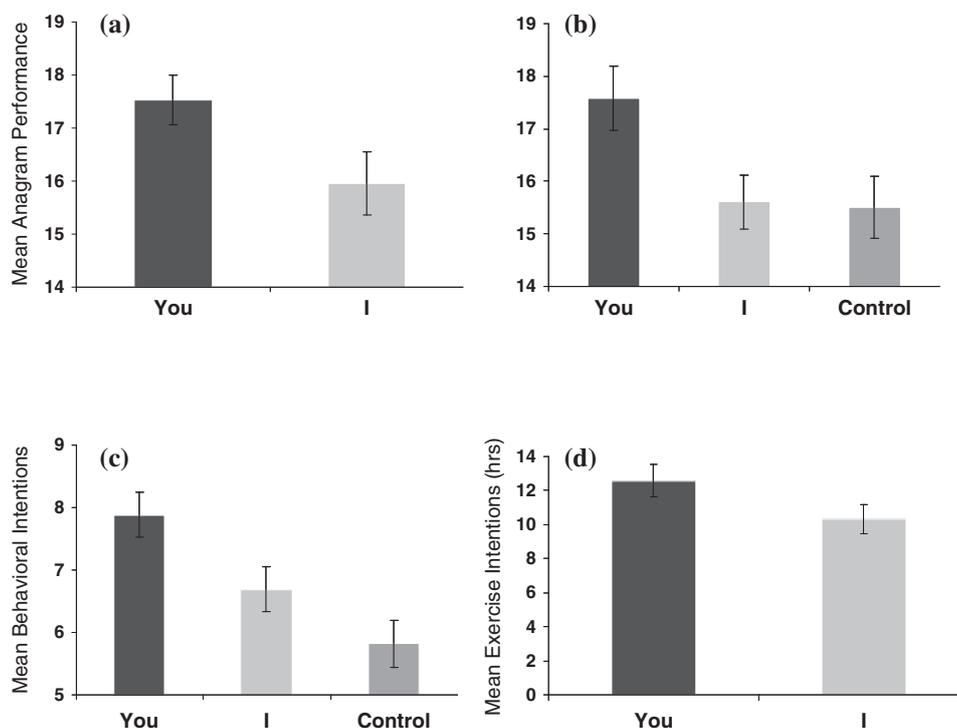

Figure 1. Mean number of correctly solved anagrams and behavioral intentions as a function of word prime. (a) Mean anagram performance in Experiment 1; (b) mean anagram performance in Experiment 2; (c) behavioral intentions in Experiment 2; (d) behavioral intentions in Experiment 3. Error bars represent one standard error.

condition completed only the anagram section of the task. The outcome measure was the actual behavior performance, as reflected in the number of correctly solved anagrams. Participants also rated their experience with the anagram task on an 11-point scale ranging from 1 (*not at all*) to 11 (*extremely*). One item (*I would work on a similar task on another opportunity*) was used to measure behavioral intentions, and two items (*The anagram task was interesting* and *I was happy to work on this task*; $\alpha = .78$) were used to measure participants' attitudes toward the task.

Results and Discussion

All participants in the study chose to complete the anagram task. A one-way analysis of variance (ANOVA) showed a significant effect of condition on anagram performance, $F(2, 140) = 3.91$, $p = .022$, $\eta^2 = 0.05$. As expected and shown in Figure 1(b), participants who prepared for the anagram task using sentences starting with *You* solved significantly more anagrams ($M = 17.58$, $SD = 3.85$) than participants using sentences starting with *I* ($M = 15.61$, $SD = 3.68$), $t(140) = 2.40$, $p = .018$; $d = 0.52$, or the control group ($M = 15.51$, $SD = 4.21$), $t(140) = 2.52$, $p = .013$, $d = 0.51$. Anagram performance did not differ between the group primed with *I* and the control group, $t(140) = 0.13$, $p = .90$; $d = 0.02$. There were also significant differences in attitudes between the groups who used *You* and *I* self-talk and the control group, $F(2, 140) = 5.83$, $p = .004$, $\eta^2 = 0.08$. As predicted, participants primed with *You* reported more positive attitudes ($M = 7.62$, $SD = 1.77$) than those primed with *I* ($M = 6.79$, $SD = 2.09$), $t(140) = 1.99$, $p = .048$; $d = 0.43$, and controls ($M = 6.20$, $SD = 2.02$), $t(140) = 3.41$, $p = .001$; $d = 0.75$. There were no significant differences in attitude between the group primed with *I* and the control group, $t(140) = 1.50$, $p = .136$; $d = 0.29$. In addition, there was a significant effect of condition on participants' intentions to perform similar anagram tasks in the future, $F(2,140) = 7.45$, $p = .001$, $\eta^2 = 0.1$ (Figure 1(c)). Similar to behavior performance and attitudes, participants who used *You* self-talk reported higher behavioral intentions ($M = 7.88$, $SD = 2.30$) than participants using sentences starting with *I* ($M = 6.69$, $SD = 2.55$), $t(140) = 2.24$, $p = .027$; $d = 0.49$, or the control group ($M = 5.82$, $SD = 2.70$), $t(140) = 3.86$, $p < .0001$; $d = 0.82$. Behavioral intentions did not differ significantly between the group primed with *I* and the control group, $t(140) = 1.72$, $p = .088$; $d = 0.33$.

To determine whether attitudes mediated the relation between the *You/I* prime and our outcome measure, we conducted mediation analyses. To assess mediation, we estimated the standard deviation of the indirect effect of type of self-talk (*You/I*), via attitudes, on task performance and prospective behavioral intentions, for 5000 bootstrapped samples (Preacher & Hayes, 2008). The bootstrap results indicated that attitudes did mediate the effect of *You/I* self-talk on performance and behavioral intentions (Figure 2(a and b)). The mediation analyses revealed that the indirect effect of the *You/I* self-talk manipulation on the outcome variable through attitudes was significant, with a point estimate of 0.44 and a 95% bias-corrected bootstrap confidence interval of [0.01 to 1.06] for anagram performance, and a point estimate of 0.75 and a 95% bias-corrected bootstrap confidence interval of [0.05 to 1.49] for future intentions.

Because zero is not in this interval, these data suggest that *You* self-talk led to better anagram performance and higher intentions to perform similar tasks by increasing participants' positive attitudes toward the task.

One possible limitation of this experiment is that attitudes, measured after the anagram task, could have been influenced by performance on the anagram task. In the next experiment, we addressed this possible limitation by comparing the effects of the two pronominal persons *before* performance was assessed. In addition, we investigated the effects of these pronouns on a different outcome, namely anticipated exercise intentions, and examined their potential influence on participants' attitudes toward exercise.

EXPERIMENT 3

Experiment 3 was designed to accomplish two important objectives. First, we attempted to replicate our findings by examining the effects of self-advice using the first- and second-person pronouns on a completely different task, namely exercise intentions. Second, we measured participants' attitudes toward exercise to determine their role in the effect of grammatical person. These measures included behavioral outcomes, which are an indirect measure of attitudes in the Ajzen and Fishbein's tradition (Ajzen, Albarracín, & Hornik, 2007).

Participants and Procedure

Participants were 135 introductory psychology students, who received course credit for their participation. They were randomly assigned to the *You* or *I* self-talk conditions. Participants were told that the researchers were interested in activities that college students conduct on a regular basis, and that they were going to be asked about their intentions to engage in physical activities within the next 2 weeks. Prior to this assessment, however, participants were asked to take a few minutes to write down their thoughts/self-directed advice about exercising in the next 2 weeks. As in the previous experiments, under the pretense that researchers were trying to collect thoughts in a special format that yielded standardized data, they were asked to record the first 10 pieces of advice they had by beginning each statement with *I* or *You*. Participants then reported the number of hours they intended to exercise in the following 2 weeks and rated on a 7-point scale (*not at all to very much*) their attitudes toward exercising, using four items: *Enjoyment*, *Fun and Interest*, *Personally important*, and *Having a strong value for being active and healthy* ($\alpha = 0.89$). At the end of the study, participants also reported the number of hours they exercised each week.

Results and Discussion

Seven participants were eliminated for various reasons. We excluded one participant whose reported number of hours of exercise/week (i.e., 40 hours) and intended hours to exercise for the following 2 weeks (i.e., 100+) were more than three standard deviations above the group mean, and six participants who used incorrect pronouns during the self-advice task or
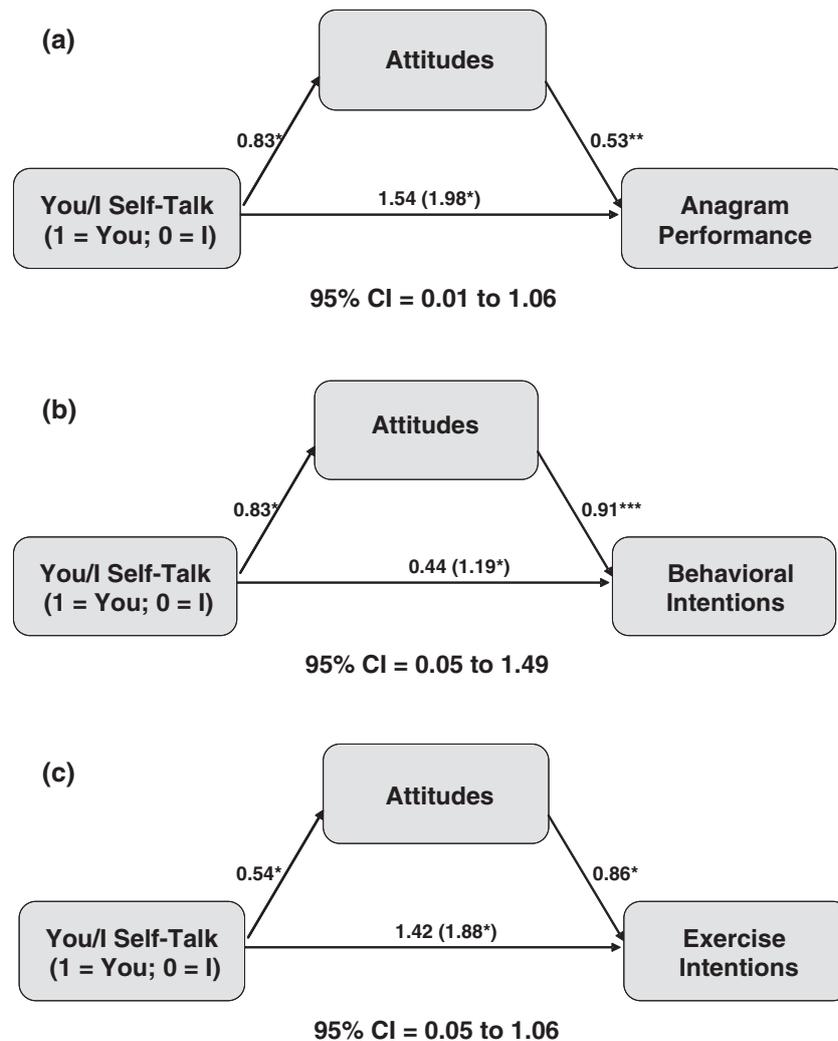
(a)

(b)

(c)

Figure 2. Attitudes as a mediator of the effect of *You*/*I* self-talk on anagram performance (a) and behavioral intentions (b) in Experiment 2 and on exercise intentions (c) in Experiment 3. Path values represent unstandardized regression coefficients. CI, bias-corrected bootstrap confidence intervals. $^{*}p < .05$. $^{**}p < .01$, $^{***}p < .001$

guessed the purpose of the study. Because exercise intentions are highly correlated with past exercise, the analysis included weekly exercise hours as a covariate. As expected and shown in Figure 1(d), participants' intentions to exercise were higher when they gave self-advice using *You* ($M = 12.59$, $SD = 7.45$) than when they gave self-advice using *I* ($M = 10.34$, $SD = 7.05$), $F(2, 125) = 3.97$, $p = .049$, $\eta^2 = 0.03$.

Analysis of variance comparing attitudes toward exercise among the two experimental groups revealed that the *You* group showed more positive attitudes toward exercising ($M = 5.67$, $SD = 1.10$) than the *I* group ($M = 5.13$, $SD = 1.31$), $t(126) = 2.5$, $p = .014$; $d = 0.45$. To determine whether these positive attitudes mediated the effect of the *You*/*I* manipulation on exercise intentions, we conducted mediation analyses. Specifically, we estimated the standard deviation of the indirect effect of type of self-talk (*You*/*I*), via attitudes, on exercise intentions, for 5000 bootstrapped samples (Preacher & Hayes, 2008). The bootstrap results indicated that attitudes did mediate the effect of *You*/*I* self-talk on exercise intentions (Figure 2(c)). The mediation analyses revealed, with 95% confidence, that the indirect effect of the *You*/*I* self-talk manipulation on the outcome variable through attitudes was significant, with a point estimate of 0.46, and a 95% bias-corrected bootstrap

confidence interval of [0.05 to 1.06]. Because zero is not in this interval, these data suggest that *You* self-talk led to higher intentions to exercise by increasing participants' positive attitudes.

In sum, Experiment 3 replicated the positive effects of self-advice using the second-person pronoun on a completely different variable, namely exercise intentions, and also revealed that the second-person self-talk focuses people on positive attitudes toward the behavior.

GENERAL DISCUSSION

Can people's attitudes and performance for an upcoming activity be enhanced by using second-person self-talk? By demonstrating that self-talk using *You* strengthens task performance and behavioral intentions and increases positive attitudes more than self-talk using *I*, the three experiments presented in this paper suggest a positive answer to this question. Experiment 1 revealed that self-advice using *You* in an unrelated domain increased anagram performance to a greater extent than self-advice using *I*. Experiment 2 indicated that using *You* self-talk in preparation for an anagram task enhanced

anagram performance and intentions to perform similar anagram tasks to a greater extent than *I* self-talk, and that this effect was mediated by participants' positive attitudes toward the task. Experiment 3 extended these findings to a completely different domain, namely exercise intentions, and confirmed the mediating effect of attitudes. Altogether, the current research showed that second-person self-talk strengthens both actual behavior performance and prospective behavioral intentions more than first-person self-talk, and that these effects are mediated by attitudes.

The pattern of self-talk that emerged from our current studies complements past intuitions and descriptive data on the role of self-talk (for reviews, see Dolcos, Wilson, Sánchez, Zell, & Albarracín, 2014; Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis, 2011). For example, previous research has documented that people tend to use second-person self-talk in contexts requiring self-regulation (Zell et al., 2012), and that exercisers tend to refer to themselves in the second-person more than in the first-person (Gammage et al., 2001), but ours is the first experimental demonstration of the success of this strategy. Second-person self-talk has been shown to lead to more positive (i.e., challenging as opposed to threatening) appraisals of upcoming events (Kross et al., 2014), but our work is the first to demonstrate that positive attitudes such as increased interest and enjoyment of the activity (Studies 2 and 3), along with increased personal meaning or value ascribed to the activity (Study 3), mediate the behavioral benefits of second-person self-talk.

Our findings are consistent with recent evidence linking the second-person perspective to increased self-regulation and more positive, opportunity oriented appraisals (Kross et al., 2014), and with the cognitive appraisals literature, which shows that positive appraisals can have a strong influence on emotion, cognition, and performance (Alter et al., 2010; Jamieson et al., 2012; Wood Brooks, 2014). Also significant others (e.g., parents and teachers) help direct children's behavior using second-person instructions and encouragements, which makes children used to responding to others who provide direction in the second person. According to the habit theory and research, repetition of a behavior in a consistent context reinforces a mental context–behavior association, such that encountering the context can automatically trigger the associated habitual behavior (Lally et al., 2010; Wood & Neal, 2007). As a result, initial external encouragements expressed using *You* may become internalized and later may develop into self-encouragements, which, expressed using *You*, may enable individuals to automatically reproduce encouragements and appraisals previously received from others and to generate more positive attitudes, intentions, and behaviors. Future studies should examine whether internalization and other theoretically relevant variables mediate the beneficial effects of second-person self-talk on behavioral intentions and performance.

Although our results are consistent across the three experiments, future research should address a number of limitations that would improve our understanding of the factors that influence the use and effectiveness of second-person self-talk. Although previous studies have shown that self-talk is frequently engaged not only before but also during the task (Gammage et al., 2001), our studies did not specifically test participants' self-talk during the task and its potential influence

on future behaviors. Despite this limitation, the present results are clear in showing that the implicit and explicit use of *You* improves individual's appraisals of the upcoming task and its performance. Previous research revealed that tasks involving choice are more enjoyable than tasks without choice, and the provision of choice often induces greater feelings of confidence and success (Henry & Sniezek, 1993; Tafarodi, Milne, & Smith, 1999) and leads to improved task performance (Cordova & Lepper, 1996). Given the identified effects of choice on attitudes and behavior, further work must explore the influence of free versus forced choice on self-talk using the first- and second-person pronouns and their associated outcomes.

The undergraduate students who participated in the current studies may have been relatively well adjusted, with generally positive self-views. Further research must explore whether the positive effects of second-person self-talk would also generalize to samples that have more negative chronic self-views (e.g., low self-esteem and depressive attribution style; Libby, Valenti, Pfent, & Eibach, 2011; Wakslak, Nussbaum, Liberman, & Trope, 2008).). Moreover, self-talk is a valenced phenomenon and can range from positive evaluations of the self in the form of self-encouragement, self-compassion, and self-affirmation to negative evaluations in the form of self-criticism, rumination on negative self-aspects, and expressions of inadequacy or worry (Moran, 1996). The present experiments emphasized the use of self-talk for self-encouragement, but further research is needed to uncover the valence and role of the first- and second-person self-talk in tasks and situations with different degrees of difficulty, competitiveness, and personal relevance.

Given its behavioral, attitudinal, emotional, and cognitive benefits, *You* self-talk has potential practical implications for students, athletes, employees, people with mood and anxiety disorders, and, more generally, individuals who need to self-regulate their behavior to engage, continue, or excel in the activities they pursue. Our research suggests that the personal pronoun *You* may serve as a linguistic device that can change the focus of self-talk about a given behavior and the evaluative meaning of that behavior. People can clearly engage in *You* self-talk in a voluntary fashion, but, as shown by our studies, they can be also primed to use second-person self-talk. Future work should examine ways of actually training people to strategically use the second-person in ways that improve their self-regulation, which are likely to be important for a variety of domains, from health management and education to work performance.

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