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Talking About Behaviors in the Passive Voice Increases Task Performance

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Summary: Self-talk can help people redirect their attention focused on themselves to the tasks they are working on with important consequences for their task performance. Across four experiments and two different types of languages, Turkish and Slovak, people describing their own behaviors to themselves, as well as merely reading or writing sentences depicting some fictitious events, in the passive (vs. the active) voice performed better on various tasks of motor and verbal performance. The effect was present to the extent that people maintained their control over task-distracting thoughts or felt more responsible for their task success/failure. In sum, talking about task behaviors in the passive voice may increase the perceived role of task-related factors while decreasing the role of agent-related factors in achieving task success, whereby the task focus, hence performance, increases. The results are important for understanding the role of self-talk in performance with implications for changing important outcomes. Copyright © 2014 John Wiley & Sons, Ltd.

After it was first proposed by L. S. Vygotsky (1934/1987), numerous studies have shown the fundamental role played by self-talk in the control of thoughts and behaviors (e.g., Winsler, Fernyhough, & Montero, 2009). In the present investigation, we focus on self-talk about task performance. We ask if the grammatical structure of self-talk can give us a clue about its role in improving task performance. Can, for example, a subtle difference in the way in which we linguistically think of our behaviors as the causes of task success, such as the difference between 'I will do it' versus 'It will be done', change our task performance? If yes, we can not only better understand the phenomenon of self-talk as it links language and behavior but also improve behavioral performance in various domains of psychology including athletic performance, work, school, health, and clinical contexts.

Self-talk can improve task performance by directing people's attention either to themselves or to the tasks they may be working on. In athletic performance settings, for example, athletes use self-talk for two basic purposes: self-instruction and motivation (for a review, see, e.g., Hardy, 2006). The self-instructional self-talk relates to the technical aspects of tasks (e.g., 'I see the target') whereas the motivational self-talk focuses on people's own role in these tasks (e.g., 'I can do it'). Given the beneficial effects of both types of self-talk on task performance (Hardy, Gammage, & Hall, 2001), it becomes critical to understand how agents versus tasks can be differentially highlighted via language.

SELF-FOCUS VERSUS TASK FOCUS IN LANGUAGE

Most languages have a grammatical device, that is, the passive versus active voice, which can be used to represent a relationship between an agent and a task by emphasizing either one or the other's role in producing observed changes in events. Forming a passive (e.g., 'B was hit by A') as opposed to an active sentence (e.g., 'A hit B') to describe an actor's (*A*) behavior may decrease the responsibility attributed to that actor in producing changes in an acted-upon entity (*B*) while increasing the latter's responsibility for these changes. People rated the actor of a passive sentence on a semantic-differential scale as involving lesser levels of animacy than the acted-upon entity of this sentence, whereas in an active sentence, the actor was judged as being more animate than the acted-upon entity (Johnson, 1967). When an inanimate entity happened to be an actor such as in the case of a brick hitting a man, it was more common for speakers to form a passive sentence (i.e., 'The man was hit by the brick') rather than an active sentence to talk about this event (Harris, 1978). Finally, people who watched a video clip depicting a rape incident between two dating individuals were more likely to use a passive sentence to describe this incident if they attributed the responsibility to the victim as opposed to the assailant or embraced commonly held myths accusing victims for provoking rapes to a greater extent (Bohner, 2001). Together, these findings suggest that when used in self-talk, the passive voice as compared with the active voice (e.g., 'It will be done' vs. 'I will do it') may shift people's attention away from themselves (i.e., away from the actor) and to the tasks they are assigned to (i.e., on the acted-upon entity). Given the positive effects of both self-focus and task focus on task performance, trading one for the other type of focus via a change in self-talk's sentence voice may be expected not to change performance as much. However, if, as will be discussed later, task focus is more important than self-focus for task performance, then we might observe a difference in performance as a function of the self-talk's sentence voice.

SELF-FOCUS VERSUS TASK FOCUS AND PERFORMANCE

Previous studies investigating the relationship between self-focused attention and task performance have shown that a

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greater level of self-focus does not always increase task performance. When people worked on various tasks (e.g., solving anagrams or tracing the lines of a figure without lifting their pen) in front of a mirror as compared with when they were not in front of a mirror, and thereby, felt more self-aware, they showed greater persistence and performance only when they were previously led to expect success (Carver, Blaney, & Scheier, 1979; Strack, Blaney, Ganellen, & Coyne, 1985). However, they showed lower persistence and performance if they were previously led to expect failure. Moreover, success at trying to form a new concept, solving anagrams, or offering effective solutions to interpersonal problems decreased among those who were depressed, were dysphoric, were more self-conscious, or had low self-esteem when they worked on these tasks in front of a mirror or focused on their abstract self (i.e., thoughts, emotions, and personality) as compared with when there was no mirror in the environment or when people turned their attention to external events (Brockner, 1979; Lyubomirsky & Nolen-Hoeksema, 1995; Strack et al., 1985). Shifting the attention of individuals who were depressed, dysphoric, pessimistic, or more self-conscious away from themselves such as instructing them not to think about how well they are doing on tasks, having them imagine external events (e.g., a sailing boat or mountain scenery), or instructing them to increase their task focus restored their performance (Brockner, 1979; Coyne, Metalsky, & Lavelle, 1980; Lyubomirsky & Nolen-Hoeksema, 1995; Strack et al., 1985).

Whereas self-focus had variable effects on performance, task focus has consistently increased task performance. Many clinical and developmental studies showed that increasing task focus by simply having children verbally label task materials (e.g., naming the colors of pegs touched in a specific order) or repeat task instructions increased their performance on various cognitive and motor tasks (e.g., Muller, Zelazo, Hood, Leone, & Rohrer, 2004; Winsler, Manfra, & Díaz, 2007). Regardless of whether they were in front of a mirror, hence had a relatively increased self-focus, people performed better on a concept formation task when they were reminded of the importance of task focus on the study instructions (Brockner, 1979). Additionally, in this same study, shifting the focus of more self-conscious individuals away from themselves by increasing their task focus also increased their task performance. In the context of self-talk, individuals who were asked to use a type of instructional self-talk (e.g., 'I see the net, breath out, I stretch fast and strong') that highlighted their task behaviors more (task focus) than their self-involvement (self-focus) performed better on various motor tasks (e.g., badminton serve task, soccer skills, and sit-ups) as compared with others who used a type of motivational self-talk that highlighted their own ability to perform better (e.g., 'I can'; Theodorakis, Weinberg, Natsis, Douma, & Kazakas, 2000). In this study, the motivational self-talk sometimes failed to increase task performance as compared with not using any type of self-talk. Together, these findings suggest that task focus, regardless of whether induced by self-talk or study instructions, is a better facilitator of task performance than self-focus.

THE PRESENT STUDY

Although previous studies identify self-focus and task focus as two important predictors of performance in general and as the factors that underlie the effects of self-talk on task performance, they provide little guidance on how we can control and change these two types of focus during task performance. Given that task focus may be superior to self-focus at increasing performance, it becomes important to determine whether and/or how the attention focused on agents themselves can be shifted to the tasks they are assigned to. One way in which this can be carried out may be to use the passive (vs. active) voice in self-talk. As described earlier, self-talk in the passive versus active voice ('It will be done' vs. 'I will do it') may potentially pit self-focus against task focus. Self-talk in the passive voice may highlight the role of task-related factors, as opposed to the role of agent-related factors, in achieving task success to a greater extent, increasing the relative task focus. Self-talk in the active voice, on the other hand, may highlight the role of agent-related factors, as opposed to that of the task-related factors, in achieving task success to a greater extent, increasing the relative self-focus. If, as previous studies suggest, task focus is more effective than self-focus in increasing task performance, then a self-talk in the passive voice should benefit task performance to a greater extent.

Furthermore, the passive voice assigns the role of actors to the entities acted upon in depicted events (Bohner, 2001; Harris, 1978; Johnson, 1967). Thus, the greater the role of an actor in producing changes in events, the greater the role of the acted-upon entity will become when the relationship between the two is represented in the passive voice. When used in self-talk, the passive voice may similarly shift the source of responsibility for task success/failure from being agent-related factors to task-related factors. Therefore, agents representing their own behaviors in the passive voice may achieve a better task focus, hence better performance, if they attribute a greater responsibility to themselves for their task success/failure. That is, the effect of the passive voice on performance should be present to the extent that people see themselves as being more responsible for their task success/failure.

In sum, the present study investigates how attention can be effectively managed during task performance. Across two languages from different language families and with different default word orders, Turkish (Experiments 1, 2, and 3) and Slovak (Experiment 4), participants were asked to covertly talk to themselves (Experiment 1) or were led through supraliminal priming to unintentionally think about some task behaviors that they were going to perform (Experiments 2, 3, and 4) in either a passive-sentence (e.g., 'It will be done') or active-sentence (e.g., 'I will do it') frame. Thinking in a passive-sentence frame was expected to increase performance both on motor (Go/No-Go Task) (Experiments 1 and 2) and verbal (anagram-solving; Experiments 3 and 4) performance tasks.

Because the passive voice is expected to increase the relative task focus, we expected that thoughts interfering with performance will be better controlled by the use of the passive voice. Task-distracting thoughts usually involve a

maladaptive focus on self such as having the form of 'I will fail the task' and 'I am not as smart as others' (Hembree, 1988; Seipp, 1991). Thus, we specifically predicted that those with a more chronic experience of such intrusive thoughts (Experiment 3), as well as those who lose control over such thoughts during their task performance more often (Experiment 4), will be less likely to benefit from talking to themselves in the passive voice. Finally, if self-talk in the passive voice assigns the role of agent-related factors to task-related factors in changing task performance, then the self-talk in the passive voice should affect performance to the extent that people attribute their task success/failure to their own efforts and skills rather than to some external factors. That is, the greater the role agents attribute to themselves in achieving task success, the greater will be the role attributed to task-related factors when task behaviors are represented in the passive voice (Experiment 4).

EXPERIMENT 1

Participants in Experiment 1 were asked to work on a Go/No-Go task while covertly repeating task instructions by using either an active sentence or a passive sentence. A separate group of participants constituted the control group and repeated a task-unrelated word (i.e., *one*) while working on the same Go/No-Go task. We expected the group using passive sentences to show better task performance than the others.

Method

Participants

One hundred fourteen undergraduates who were native Turkish speakers (82 women) participated in the main experiment, and a separate group of 32 undergraduates (20 women) participated in the norming phase of the study in return for course credit. About 35–40 participants were randomly assigned to each of the three conditions in the main experiment.

Materials

Realistic photos of eight healthy (e.g., fruits, vegetables, salad, and nuts) and eight unhealthy (e.g., burgers, fries, high-calorie desserts, and candies) foods, which were cropped to be 512 × 512 pixels in size, were selected from a pool of 29 pictures. Thirty-two undergraduates who did not participate in the main experiment used a self-assessment manikin (Bradley & Lang, 1994) to rate each picture on a 7-point scale indicating how much they felt excited and happy while looking at it. Two sets of four healthy and four unhealthy food pictures were selected with the condition that the healthy food pictures in each set were neither more arousing ($M = 5.13$, $SD = 2.06$, for Set 1; $M = 4.11$, $SD = 1.63$, for Set 2) than the unhealthy ones ($M = 5.61$, $SD = 1.67$, for Set 1; $M = 4.42$, $SD = 1.72$, for Set 2) nor more pleasurable ($M = 6.41$, $SD = 1.65$, for Set 1; $M = 6.12$, $SD = 1.44$, for Set 2) than the unhealthy ones ($M = 6.54$, $SD = 1.59$, for Set 1; $M = 5.87$, $SD = 1.55$, for Set 2), t's(31) = 1.102 and 0.774, p's > .05, for arousal in Sets 1 and 2, respectively, and t's(31) = 0.420 and 0.901, p's > .05, for valence in Sets 1 and 2, respectively.

Procedure

Participants were given a computerized Go/No-Go task. To mimic an important everyday task, they were asked to make a decision about healthy versus unhealthy food targets. They had to press a response key (i.e., spacebar) when they were presented with any one of a set of four pictures (e.g., four *healthy* food photos) and had to withhold their key press when presented with any one of a contrasting set of four pictures (e.g., four *unhealthy* food photos). Before the participants started the task, in the active-voice condition, they were instructed on the computer screen to covertly say 'I will do it' in Turkish (*yapacağım*, trans.) at about the same time as they were pressing the response key and 'I will not do it' (*yapmayacağım*, trans.) when they had to withhold their key press in response to a presented picture. In the passive-voice condition, they had to either say 'It will be done' (*yapılacak*, trans.) or 'It will not be done' (*yapılmayacak*, trans.) while pressing versus not pressing the response key, respectively. In the control group, participants were asked to repeat the word *one* in Turkish (*bir*, trans.) whenever they responded or withheld their response to a picture. The reason given for the self-talk manipulation was that engaging in self-talk could increase participants' concentration.

All pictures were normed to be comparable for their effects on arousal and mood. Whether a particular set of pictures included the photos of healthy or unhealthy food was counterbalanced across participants in each self-talk group (i.e., the active-voice, passive-voice, and control groups). Whereas half the participants in each group were asked to press the response key in response to healthy food pictures, the other half had to press the key in response to the unhealthy food pictures. Each picture was presented 20 times to cue response execution or suppression.

Each picture appeared in the center of the screen against a gray background for up to 1 second until the response key was pressed. The picture was preceded by a blank gray screen for 100 milliseconds, which replaced a series of crosses (+++++) that appeared in the center of the screen for 600 milliseconds (stimulus onset asynchrony = 1700 milliseconds).

Results and discussion

To measure the performance accuracy on the Go/No-Go task, in line with signal detection theory (Green & Swets, 1966), we calculated d' scores that corrected for a possible bias to press or not to press keys for any picture regardless of the response accuracy. The formula we used for d' was the difference between the z-scores of hit rates (rate of correctly pressing the key in response to a target) and false alarms (rate of incorrectly pressing the key for a target; MacMillan & Creelman, 2005):

$$d' = Z(hit\ \ rate) - Z(false\ \ alarm\ \ rate)$$

An analysis of variance (ANOVA) with one factor having three levels (the active-voice, passive-voice, and control groups) was performed on participants' d' scores, yielding

no significant overall effect, $F(2, 111) = 2.192$, $p > .1$. There was no difference in d' scores between the active-voice ($M = 3.76$, $SD = 0.40$) and control conditions ($M = 3.79$, $SD = 0.26$), $t(108) = 0.374$, $p > .1$. However, as expected and revealed in planned contrasts, as well as shown in Figure 1, the passive-voice group performed significantly better than the others, $t(108) = 2.075$, $p = .040$, $g = 0.42$, 95% CI [0.02, 0.82]. The passive-voice group had a higher *d'* score ($M = 3.89$, $SD = 0.11$) as compared with the others ($M = 3.77$, $SD = 0.33$). The hit rates (i.e., the rate of correct key presses) were 0.99 ($SD = 0.01$) and 0.98 ($SD = 0.02$) for the passive-voice group and the others, respectively. The false alarm rates (i.e., the rate of incorrect key presses) were 0.01 ($SD = 0.02$) and 0.03 ($SD = 0.04$) for the passive-voice group and the others, respectively.

The groups did not differ from one another on reaction times, $F(2, 107) = 1.977$, $p > .05$. The passive-voice group ($M = 540$ milliseconds, $SD = 37$) was not slower than the others ($M = 546$ milliseconds, $SD = 43$) during correct key presses, $t(108) = 0.491$, $p > .1$. In other words, participants did not trade speed for accuracy. These results show that self-talk about behaviors in the passive voice as compared with a self-talk in the active voice or task-irrelevant self-talk improves the control of task behaviors. The next experiment was an attempt to replicate this effect by leading participants to unintentionally think about their behaviors either in a passive-sentence or active-sentence frame.

EXPERIMENT 2

Participants in Experiment 2 read a series of sentences written either in the active or passive voice as part of a presumably upcoming memory test. Those who read passive sentences were expected to perform better on a subsequent Go/No-Go task.

Method

Participants

Eighty-six undergraduates (52 women) who were native Turkish speakers participated in the study in return for course credit. About 42 participants were assigned to each of the two study conditions.

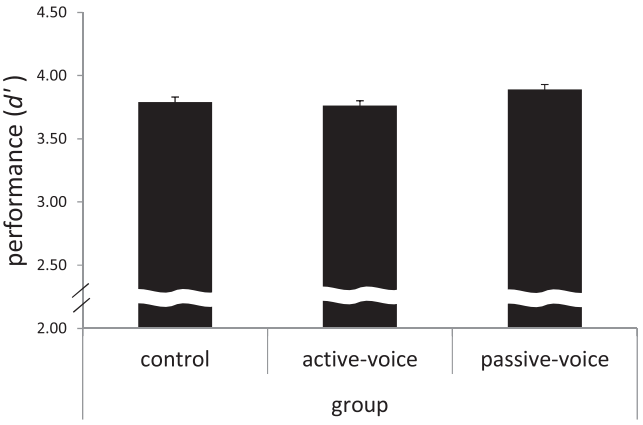

Figure 1. Performance on the Go/No-Go task (d' scores) with error bars as a function of the passive-voice, active-voice, and control groups

Procedure

In line with the sentence-voice priming procedures (Bock, 1986), the participants were asked to study a list of Turkish sentences and another list of cartoon pictures for a seemingly upcoming memory test. Later, they were given a list of 15 sentences and a list of 15 pictures, all of which had some old items from the previously studied lists plus some new items. For roughly half the participants, 11 of the 15 sentences were a Turkish passive transitive sentence, and for the other half, 11 of the 15 sentences were a Turkish active transitive sentence. Each sentence was depicting a fictitious event taking place between an actor and an acted-upon entity either in the active or passive voice (e.g., 'The principal killed the doctor many years ago' vs. 'The doctor was killed by the principal many years ago', trans.). There were also four filler, predicate, and/or non-transitive sentences interspersed among the other transitive ones (e.g., 'The every other Wednesday of each month is our meeting day', trans.). Participants were first asked to read out loud each sentence and then to state if they saw it on the list that they studied before. After each sentence, they were shown either a previously seen or new cartoon picture depicting an event between an actor and an acted-upon entity (e.g., a whale swallowing a man). They were first asked to describe the event in the picture in a single sentence and then to report if they saw the picture among the previously studied pictures. Their descriptions were later used to check if reading a passive (vs. active) sentence did indeed lead them to think of, hence describe, a picture in a passive (vs. active) sentence.

After the priming phase, as part of a presumably separate study, participants were asked to work on a Go/No-Go task, which was the same as the one used in Experiment 1 except for two changes. First, there were two pictures to respond to and two pictures to withhold responses to. Second, each picture remained on the computer screen for up to 600 milliseconds (stimulus onset asynchrony = 1300 milliseconds). Participants were not given any explicit self-talk instructions.

After the Go/No-Go task, the participants were asked to fill out the Turkish version of a self-talk scale (Brinthaupt, Hein, & Kramer, 2009) measuring on a 5-point scale with 16 items the frequency of using self-talk for four different purposes: social assessment (e.g., 'I talk to myself when I'm imagining how other people respond to things I've said'; $\alpha = 0.70$), self-management (e.g., 'I talk to myself when I need to figure out what I should do or say'; $\alpha = 0.76$), self-reinforcement (e.g., 'I talk to myself when I am really happy for myself'; $\alpha = 0.73$), and self-criticism (e.g., 'I talk to myself when I am really upset with myself'; $\alpha = 0.74$). Higher scores indicated a more frequent use of self-talk.

Results and discussion

Manipulation checks. Participants who read passive sentences described a greater number of pictures in a passive sentence ($M = 0.91$, $SD = 1.12$) as compared with those who

read active sentences ($M = 0.14$, $SD = 0.42$), showing that the manipulation did indeed change whether people thought about events in an active-sentence or passive-sentence frame, $t(84) = 4.176$, $p = .001$, $g = 0.90$, 95% CI [0.46, 1.35]. We also checked to see if the recent experience of being primed to think in the passive versus active voice in Experiment 2 led participants to remember using different types of self-talk in general, indicating that the priming also had an effect on self-talk *per se*. The passive-voice group reported using a self-critical self-talk in general to a lesser extent than the active-voice group ($M = 3.24$, $SD = 0.90$ vs. $M = 3.61$, $SD = 0.67$), $t(95) = 2.290$, $p = .024$, $g = 0.47$, 95% CI [0.62, 0.87]. There was no difference on other types of self-talk. The mean frequencies of the self-reinforcement self-talk for the passive and active voice were $M = 3.06$, $SD = 0.85$ vs. $M = 3.25$, $SD = 0.73$, respectively, $t(95) = 1.203$, $p > .1$. The frequencies of using the self-management self-talk for the passive-voice and active-voice groups were $M = 3.53$, $SD = 0.80$ vs. $M = 3.78$, $SD = 0.73$, respectively, $t(95) = 1.647$, $p > .1$. For the social assessment self-talk, the means of the passive-voice and active-voice groups were $M = 3.06$, $SD = 0.90$ versus $M = 3.33$, $SD = 0.71$, respectively, $t(95) = 1.630$, $p > .1$. These results indicate that the priming procedure did have an effect on self-talk *per se*.

Task performance. Replicating the results of Experiment 1, the passive-voice group showed better performance on the Go/No-Go task as indicated by a higher *d'* score ($M = 0.85$, $SD = 0.02$) than the active-voice group ($M = 0.83$, $SD = 0.04$), $t(84) = 2.03$, $p = .046$, $g = 0.44$, 95% CI [0.01, 0.87]. The passive-voice group had a hit rate of 0.94 ($SD = 0.06$) and a false alarm rate of 0.06 ($SD = 0.05$), whereas the active-voice group had a hit rate of 0.89 ($SD = 0.12$) and a false alarm rate of 0.07 ($SD = 0.06$). The passive-voice group was also faster this time ($M = 430$ milliseconds, $SD = 30$) than the active-voice group ($M = 446$ milliseconds, $SD = 30$) during their correct key presses, indicating a more accurate and faster performance when the behaviors were represented in the passive voice, $t(84) = 2.561$, $p = .012$, $g = 0.55$, 95% CI [0.12, 0.98]. These results suggest that unintentional thoughts arising from exposure to passive versus active sentences can change task performance in the same way as the explicit self-talk does, replicating the results of Experiment 1 more directly. The next experiment extended these findings to tasks of verbal performance and investigated the role of task-distracting thoughts.

EXPERIMENT 3

Participants in Experiment 3 were asked to handwrite a sentence in either the passive or active voice for a number of times as part of a study presented as an investigation of attitudes toward handwriting. Before the handwriting task, they were asked to fill out a questionnaire measuring how often they experience distracting thoughts in general and, after the task, to solve a list of anagrams as part of an allegedly separate study. In line with previous studies showing that thoughts resulting from a maladaptive focus on self (i.e., 'I am not as smart as others') disrupt performance (Hembree, 1988; Seipp, 1991), we predicted that people who experience such thoughts that will distract them from working on the task will perform worse on the anagram task. Furthermore, people with a more frequent experience of distracting thoughts were expected to fail to improve their task performance as a result of being exposed to the passive voice. This is because the passive voice was expected to increase task focus or decrease task-distracting thoughts. When distracting thoughts are chronic and hence are less malleable to change, the effectiveness of the passive voice in facilitating performance should be reduced.

Method

Participants

Eighty-one undergraduates (48 women) who were native Turkish speakers participated in the experiment in return for course credit. Thirty-five participants were randomly assigned to the passive-voice condition.

Procedure

Participants were asked to complete the Turkish version of the unwanted intrusive thoughts subscale ($\alpha = 0.83$; Blumberg, 2000) of the White Bear Thought Suppression Inventory (Wegner & Zanakos, 1994), measuring the chronic experience of distracting thoughts in general (e.g., 'I have thoughts that I cannot stop'). Responses ranged from 1 to 5, with higher scores indicating a more frequent, or chronic, experience. Then, as part of a seemingly separate study presented as an investigation of attitudes toward handwriting, participants were randomly assigned to handwrite a sentence in either the passive or active voice for 20 times by using one of a set of four, randomly assigned Turkish verbs that had similar word frequencies in Turkish (*anlatmak*: *to recount*, trans.; *söylemek*: *to say*, trans.; *kullanmak*: *to use*, trans.; *getirmek*: *to bring*, trans.; e.g., 'I will use it' vs. 'It will be used', trans.). In the next 5 minutes, they worked on rearranging the letters of 12, five-letter anagrams in Turkish. Their goal was to make up a new word from each anagram (e.g., *antik*, trans. *ancient*, from *nakit*, trans. *cash*). Participants were not given any explicit self-talk instructions.

Results and discussion

When we first regressed the number of correctly solved anagrams on (the passive-voice vs. active-voice) group—with the passive-voice condition being coded as 1—the effect of group was positive but not significant, $b = 0.263$, $t(79) = 0.647$, $p > .1$, $R^2 = .005$, 95% CI [−0.03, 0.04], $F(1, 79) = 0.418$, $p > .1$. When the variable distracting thoughts was added as a covariate to the model, the effect of group did not change significantly, $b = 0.281$, $t(78) = 1.125$, $p > .1$, $\Delta R^2 = .006$, $F(1, 78) = 1.26$, $p > .1$. However, when distracting thoughts were added both as a covariate and an interaction term to the model, group's positive effect on performance became significant, replicating the findings in the previous two experiments, $b = 2.645$, $t(77) = 2.324$, $p = .023$, $\Delta R^2 = .03$, $\Delta F(1, 77) = 5.28$, $p = .024$. The effect of distracting thoughts and this variable's interaction with group was both negative and significant, $b = -1.490$, $t(77)$

$= 9.151$, $p < .001$, $\Delta R^2 = .38$, $\Delta F(1, 77) = 83.6$, $p < .001$; $b = -0.702$, $t(77) = 2.127$, $p = .037$, $\Delta R^2 = .02$, $\Delta F(1, 77) = 4.4$, $p = .039$, respectively. As expected, a more chronic experience of distracting thoughts disrupted performance in general and especially in the passive-voice condition.

Next, we conducted a suppression analysis (MacKinnon, Krull, & Lockwood, 2000) to analyze the change in the effect of group on performance ($b = 0.263$ vs. 2.645) after accounting for the effect of the group–distracting thoughts interaction on performance. A suppression effect was detected, $z = 2.14$, $p = .032$. Distracting thoughts were more disruptive on performance in the passive-voice condition than they were in the active-voice condition because they were suppressing the positive effect of the passive voice on performance in that condition. As shown in Figure 2, the positive effect of the passive voice on performance was only observable at lower levels of distracting thoughts. When distracting thoughts were more chronic, or less malleable to change, the positive effect of the passive voice on performance was more reduced.

To further increase the internal and external validity of our results, we designed a fourth experiment. Previous experiments relied on people's individual differences (the chronic experience of distracting thoughts), which were not specifically linked with the performance that was being measured. Also, the results thus far were based on a single language, Turkish. The next experiment measured the failure of controlling distracting thoughts, or losing task focus, more directly and was conducted in a different culture and language, Slovak used in Slovakia. Lastly, we wanted to test if the passive voice used in self-talk increases task performance by redirecting agents' self-focused attention to the tasks they are working on.

EXPERIMENT 4

In Experiment 4, native Slovak speakers were asked to handwrite a Slovak sentence in either the passive or active voice as part of a seemingly separate study about their attitudes toward handwriting as in Experiment 3. Afterwards, they were asked to solve as many Slovak anagrams as possible in 10 minutes. About half the participants in both the passive-voice and active-voice conditions were told that their performance on the anagram task was largely dependent on their efforts and skills to solve anagrams rather than on how often the solution words were used in Slovak or how easily they came to mind (i.e., high self-focus condition). The other half, on the other hand, was told that their anagram-solving performance was dependent on how easily anagram solutions would come to mind rather than on how skilled they were for or how much effort they would put into finding new words (i.e., low self-focus condition). If a self-talk in the passive voice assigns the role of agent-related factors to task-related factors, the positive effect of the passive voice on performance should be present to the extent that agents attribute the responsibility for task success to themselves. Lastly, in line with the findings of Experiment 3, the effect of the passive voice on performance was expected to become weaker to the extent that the control over distracting thoughts, or task focus, was lost during the anagram task as measured by the participants' self-reports.

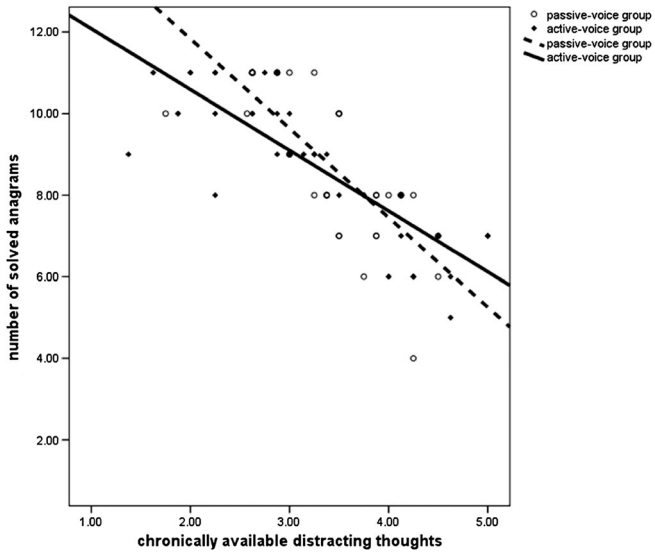

Figure 2. Scatterplot and best-fit lines of the number of successfully solved anagrams as a function of chronically available distracting thoughts in the passive-voice group only or the active-voice group only, overlaid on one graph

Method

Participants

Eighty-two native Slovak speakers (65 women) who were attending a university in Slovakia participated in Experiment 4 in return for course credit. Between 19 and 22 participants were randomly assigned to each of the four cells of the 2×2 study.

Procedure

Participants in Experiment 4 were asked to handwrite in Slovak either the expression 'I will write' (i.e., *napíšem*, trans.) or 'It will be written' (i.e., *bude napísané*, trans.) for 15 times as part of a presumably separate study presented as an investigation of people's attitudes toward handwriting. After the handwriting task, the participants were given 10 minutes to make up a new, six-letter Slovak word from each of a set of 20 six-letter Slovak anagrams by rearranging the letters of these anagrams (e.g., *MEXIKO*, *Mexico*, trans., solved as *KOMIXE*, *comics*, trans.). Each listed anagram had only one acceptable six-letter solution, and all anagram solutions had comparable word frequencies in Slovak. About half the participants who wrote in either the passive or active voice were told that their performance on the anagram task mostly depended on their skills and efforts to find new words and that it did not so much depend on how commonly the solution words were used in Slovak or how easily they came to mind. The rest was told that their task success mostly depended on how commonly the solution words were used in Slovak and that it did not so much depend on their skills and efforts to solve anagrams. After the anagram task, participants reported on a 1–7 scale how often they felt unable to stop distracting thoughts such as 'I cannot solve these anagrams' and 'I am not as smart as others' while they worked on anagrams. Higher scores indicated a more frequent loss of control over task-distracting thoughts, or a decrease in task focus. Participants were not given any explicit self-talk instructions.

Results and discussion

Self-focus versus task focus. A 2×2 ANOVA was conducted with group (active vs. passive voice) and self-focus (high vs. low) as the independent variables and the number of successfully solved anagrams as the dependent variable. The passive-voice group solved a greater number of anagrams, replicating the passive-voice effect in the Slovak language ($M = 4.18$, $SD = 2.37$ vs. $M = 3.19$, $SD = 1.87$), $F(1, 78) = 5.16$, $p = .026$, $\eta^2 = .06$. Self-focus also had a significant main effect $F(1, 78) = 5.064$, $p = .027$, $\eta^2 = .05$. Performance was greater in the high-self-focus as compared with low-self-focus condition ($M = 4.15$, $SD = 2.40$ vs. $M = 3.19$, $SD = 1.82$). There was also a significant group–self-focus interaction, $F(1, 78) = 4.978$, $p = .029$, $\eta^2 = .05$. As shown in Figure 3 and revealed in planned contrasts, a superior performance in the passive-voice condition was observed only when the success on anagram task was presented as being largely dependent on the participants' skills and efforts (i.e., high self-focus condition), $t(38) = 2.896$, $p = .006$, $g = 0.92$, 95% CI [0.25, 1.57]. When the performance on the anagram task was presented as primarily being based on how easily anagram solutions would come to mind (i.e., low self-focus condition), there was no difference between the passive-voice and active-voice conditions ($M = 3.20$, $SD = 1.96$ vs. $M = 3.18$, $SD = 1.74$), $t(40) = 0.032$, $p > .1$. These findings suggest that the passive voice in self-talk can increase performance to the extent that a focus on self is high and hence could be redirected to tasks.

Control of task-distracting thoughts. We further checked to see if losing control over distracting thoughts might have suppressed the effect of the passive voice on performance. Because the directionality of the suppression was already established in Experiment 3, we used a one-tailed test to analyze the effect. In line with the procedures of a suppression analysis (MacKinnon et al., 2000), first, the number of successfully solved anagrams was regressed on group (passive vs. active voice), self-focus (high vs. low), and the interaction of these two factors. The interaction was significant, $b = 2.002$, $t(78) = 2.231$, $p = .029$, $\Delta R^2 = .05$, $\Delta F(1, 78) = 4.996$, $p = .028$. When the lost control over distracting thoughts was added to the model as another independent predictor, the group–self-focus interaction became an even stronger predictor of performance, $b = 2.447$, $t(78) = 2.799$, $p = .006$, $\Delta R^2 = .08$, $\Delta F(1, 78) = 7.851$, $p = .006$. In addition, the lost control over distracting thoughts negatively correlated with performance, $b = -0.426$, $t(78) = 2.816$, $p = .006$, $\Delta R^2 = .08$, $\Delta F(1, 78) = 7.953$, $p = .006$. The increase in the predictive value of the group–self-focus interaction ($b = 2.002$ vs. 2.447) after accounting for the effect on performance of distracting thoughts was significant in a one-tailed analysis of suppression, $z = 1.41$, $p = .079$. These results show that the effect of the passive voice on performance was facilitated by self-focus to the extent that a control over distracting thoughts was maintained.

The results of Experiment 4 suggest that the passive voice increases performance when attention is focused on self and hence could be redirected via the use of the passive voice to tasks. Experiment 4 also replicates the findings of Experiment 3 by showing that task performance increases as result of the use of the passive voice in self-talk as long as a control over task-distracting thoughts is maintained. Finally, Experiment 4 extends the findings of previous experiments obtained in Turkish and replicates the passive-voice effect in a different language, Slovak.

GENERAL DISCUSSION

Overall, the results from four experiments and across two different languages showed that people who thought about their motor or verbal behaviors in a passive-sentence frame as opposed to an active-sentence frame induced by a covert self-talk (Experiment 1) or incidental exposure to passive (vs. active) sentences (Experiments 2, 3, and 4) showed a better control of these behaviors. The performance advantage gained from thinking in the passive voice was disrupted by a chronic experience of, or a lost control over, task-distracting thoughts (Experiments 3 and 4), suggesting that it was the control of task-distracting thoughts, or task focus, that underlay the effect of the passive voice on performance.

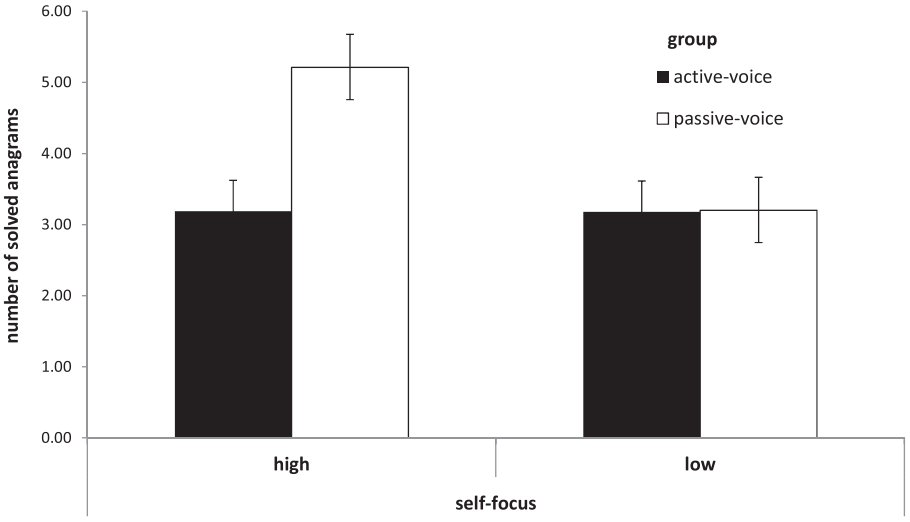

Figure 3. The mean number of successfully solved anagrams with error bars in the passive-voice versus active-voice conditions as a function of self-focus

Task focus induced by a self-talk in the passive voice benefitted people's performance to the extent that these people had higher levels of self-focus and maintained their control over task-distracting thoughts (Experiment 4). In sum, just as the causal role of actors becomes attributed to the acted-upon entities when actions are represented in the passive voice (Bohner, 2001; Harris, 1978; Johnson, 1967), agents' self-focused attention becomes redirected to the tasks they are working on when they talk about their behaviors in the passive voice. Thus, the effect of grammatical categories seems to go beyond influencing linguistic interpretations of how or why events happen, directly impacting performance as well.

Previous studies reported the positive impact of task focus on task performance (Brockner, 1979; Muller et al., 2004; Theodorakis et al., 2000; Winsler et al., 2007) and identified the types of task-related and self-focused self-talk, as the basic types of self-talk observed in performance settings (for a review, see, e.g., Hardy, 2006). Self-focus, too, was occasionally found to increase performance (Carver et al., 1979; Strack et al., 1985). Although previous studies identified task focus and self-focus as important predictors of performance, they did not specify whether or how these two types of focus can be shifted during task performance.

The present study tested if using the passive (vs. active) voice in self-talk has the potential to shift people's self-focused attention to the tasks they are assigned to. The results showed that even at the level of grammatical constructions, self-talk in the passive voice has the potential to increase task focus by redirecting self-talk users' self-focused attention to the tasks they are given, improving their task performance. These results identify self-talk as an effective means for managing attention during tasks. Thus, even a very subtle change in the grammar of self-talk may have important consequences for task performance.

Previous studies have reported similar language-mediated effects of a reduced self-focus on distracting thoughts. For example, depressed college students were reported to use the first-person singular pronoun *I* to a greater extent when they wrote about their distressing experiences (Rude, Gortner, & Pennebaker, 2004). A change over time in the pronoun use away from using the first-person pronouns (*I*, *me*, *mine*), or a reduced self-focus, in writing about distressing events resulted in a smaller number of visits to a nearby healthcare center (Campbell & Pennebaker, 2003). Not only a decreased focus on self but also an increased focus on causal explanations of events was associated with a better control of distracting thoughts. People using more causal words (e.g., *cause*, *because*, *reason*, and *effect*) over time in writing about their distressing experiences showed greater improvements in their physical health and academic performance (Pennebaker, Mayne, & Francis, 1997). These findings suggest that self-talk may help control distracting thoughts that can potentially harm performance by decreasing language users' perceived causal role in events. Similarly, in the present study, the passive voice when used in self-talk decreased self-talk users' perceived causal role in achieving task success, improving their performance.

The results from the present study are also important for understanding why sometimes a language-mediated reduction in self-focus may not have a significant effect on distracting thoughts. Previous attempts to change how people use language in talking about distressing experiences such as asking them not to use the first-person singular pronoun *I* proved unsuccessful in producing desirable effects on outcomes that are likely to be impacted by distracting thoughts (Chung & Pennebaker, 2007). Our results, too, showed that a change in self-focus cannot increase performance unless people's self-focused attention is redirected to tasks via the use of the passive voice in their self-talk (Experiment 4). Thus, future studies may investigate whether asking people to use the passive (vs. active) voice in talking about their distressing experiences may produce better health and performance outcomes than simply asking them not to use the first-person singular pronouns.

In the present study, self-talk effects were obtained without providing participants with an explicit training about how to use self-talk in their performance. A meta-analysis of previous self-talk studies has shown that the presence of such a training significantly increases the effect of self-talk on motor performance in athletic settings (Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis, 2011). Thus, more effective results are likely to be obtained when people are given explicit training about how they can use the passive voice in their self-talk.

The present study's findings may also relate to those of other studies showing that people refer to themselves as *you* when they need to directly regulate their behavior such as when they confront a negative event or when they are directly engaged in a behavior as opposed to preparing for a behavior (Zell, Warriner, & Albarracin, 2012). Furthermore, instructing people to explicitly refer to themselves as *you* has led them to better control their negative emotions (Ayduk & Kross, 2008). Together with ours, these findings suggest that a focus on self in the first-person singular is detrimental to behavioral and emotional regulation. Instead, focusing on self in the second-person singular or focusing on the task by using the passivized self-talk may benefit emotional and behavioral control better.

Finally, the results obtained in this study with Turkish and Slovak are likely to be true for other world languages allowing for the passivization of sentences. First of all, key differences between Turkish and Slovak increase the generalizability of the study results. Slovak is an Indo-European language with a preferred word order of subject–verb–object (SVO). Turkish, on the other hand, is a Turkic language largely used in Asia and has the preferred word order of subject–object–verb (SOV). Together, these two word orders (SVO and SOV) account for the sentence structures of about 75% of the world languages (Crystal, 1997). Second, there is evidence suggesting that the psychological experience of passivization may not be much different across languages. Spanish–English bilinguals were more likely to spontaneously produce an English passive after hearing a Spanish passive, for example (Hartsuiker, Pickering, & Veltkamp, 2004). Nevertheless, cross-linguistic differences in the effects of the passive versus active voice deserve further attention as another area of future research.

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