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# Putting Oneself in the Task: Choice, Personalization, and Confidence

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*Incidental choice over the features of a task provides both control and personalization. Previous accounts of the tendency of choice to enhance task confidence have emphasized the importance of perceived control. The authors reexamined the enhancement effect to determine whether personalization is equally important. The results of two studies revealed that only choices reflecting personal preferences increased confidence in the task outcome (Study 1) and boosted performance-related self-esteem (Study 2). These findings point to the importance of self-identity expression for understanding the judgmental effects of choice.*

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Individuals clearly differ in the confidence with which they approach the same task, and the performances that result often reflect these differences. Specifically, those with faith in their abilities are more likely than those who lack it to put forward a strong, focused effort and to persevere through adversity. Accordingly, a healthy degree of confidence provides a significant advantage in developing the skills required for success or mastery at an activity (Bandura, 1992; Bardwell, 1984; Markus, Cross, & Wurf, 1990). The benefits of task confidence invite examination of its antecedents. Confidence is determined mainly by the individual's self-efficacy beliefs and outcome expectancies, which themselves reflect an extended history of interactions with the environment (Rodin, 1990). Beyond individual differences, situational factors are also important. As such, optimizing the task context to increase confidence is a promising strategy for promoting competence. Toward this end, we focus here on the contextual feature of incidental choice and reexamine its tendency to enhance task confidence independent of any immediate effect on objective performance. To better understand this form of enhance-

ment, we test the possibility that it depends as much on personalization as control. We begin by reviewing how choice is related to each.

## *Choice and Control*

Many of our daily activities are less than freely chosen. Even for compulsory tasks, however, a small modicum of freedom can increase motivation and improve performance. Thus, individuals given choice over incidental features of a task often experience an elevated sense of personal control (Chan, Karbowski, Monty, & Perlmutter, 1986), greater arousal and motivation (Perlmutter, Scharff, Karsh, & Monty, 1980), and sharpened cognitive engagement (Perlmutter, Goldfinger, Sizer, & Monty, 1989), allowing them to outperform those not given choice (Perlmutter, Monty, & Kimble, 1971). Heightened perceptions of control due to choice also boost self-efficacy and confidence (Henry, 1994; Henry & Sniezek, 1993). On the negative side, choices that raise self-presentational concerns (Burger, 1987) can lead to distraction and impaired performance (Burger, 1989). Furthermore, choices made under pressure or without sufficient information can decrease rather than increase perceived control (Paterson & Neufeld, 1995; Rodin, Rennert, &

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Solomon, 1980). Most minor, incidental choices, however, reflect aesthetic preferences that cannot be judged right or wrong. There is little risk of future regret if one happens to choose, for example, pink over yellow writing paper. Such choices rarely provoke anxiety. The general tendency, then, is for incidental choice over features of a task to enhance subjective control, performance, and confidence.

Even when choice has no bearing on performance, as in games of chance, it can produce a false feeling of control that raises the expectation of a positive outcome. According to Langer (1975, 1983), the perception of control in such contexts stems from our experience with skill-dependent tasks, where choice often does promote success. Through exposure to such tasks, we come to associate choice with enhanced performance. This learned association is then spontaneously but inappropriately applied to activities where the outcome is determined wholly by chance, producing an "illusion of control."

Finally, choice may increase confidence during and after skill-dependent tasks even when it does not do so before and independent of any effect it has on actual performance. This effect is distinct from Langer's associative cueing account, which boosts anticipatory confidence. Rather, it involves the merger of control derived from choice and control derived from working through the task. In this account, control is assumed to correspond with a specific emotional state in the actor, a distinctive form of excitation. For those emotions associated with elevated sympathetic activity, such as fear, anger, and sexual excitation, Zillmann (1983, 1996) has argued for the pervasiveness of excitation transfer, whereby the residual activation stemming from a prior event intensifies the emotional reaction to a current event. The intensification occurs because

individuals do not partition excitation compounded from reactions to different inducing conditions. . . . As a result, individuals tend to ascribe their excitatory reaction in toto to one specific, though potentially complex, inducing condition. (Zillmann, 1983, p. 225)

Admittedly, the emotional consequences of choice are quite different from the "acute" emotions (Leventhal, 1979) addressed by excitation transfer theory. In fact, little is known about transfer in relation to less vivid emotional states, such as that produced by choice. Here, the pronounced and nonspecific aspects of acute sympathetic activation (Smith, 1973) are absent, suggesting that any residual excitation available for transfer represents a more subtle and complex emotional reaction that may be unique to the type of inducing event. With this possibility in mind, Tafarodi, Milne, and Smith (1999)

proposed that choice-derived control gives rise to a form of excitation that persists into the performance of the task yet is not partitioned or distinguished by the actor as resulting from events that preceded the task. This residual excitation then combines with the excitation of working through the task (a second source of control) to produce a more positive overall perception of one's performance on the task than would otherwise be the case. This augmentation hypothesis was confirmed in two studies that showed choice to enhance perceived performance even when it had no effect on actual performance. The absence of performance benefits in these studies reflects the use of a highly interesting task. Motivation tends to be spontaneously high for such tasks and is affected only negligibly by choice. In contrast, most studies revealing improved performance through choice have featured relatively uninteresting tasks (e.g., paired-associate learning). The demonstration that choice can enhance confidence independent of performance effects raises an important question. Namely, it is unclear whether simple control or something more complex is responsible for the critical excitation produced by choice. One possibility, which we pursue here, is that the observed benefits of choice depend as much on self-expression and personalization as they do on control.

#### *Personalization*

Tasks can be tailored to reflect elements of the actor's experience or identity. Personalizing the task in this way has been shown to enhance motivation and performance (Anand & Ross, 1987; Wright & Wright, 1986) by increasing contextual familiarity (Ross, McCormick, & Krisak, 1986) and self-relevance (Cordova & Lepper, 1996). Might not personalization, then, independent of choice, boost task confidence? A study by Cordova and Lepper (1996) is suggestive here. In that study, children learned math rules by playing a computer game. Children given choice over screen icons and character names performed better and reported higher perceived competence than those who played the standard version of the game. Incorporation of personally relevant details into the fantasy context of the game provided similar benefits. Accordingly, the authors concluded that choice and personalization had separate salutary effects on math learning. Although this interpretation may be correct, it cannot be known from their study. This is because aesthetic choices are themselves inherently personalizing. Choices that reflect the actor's personal preferences and influence the form of the task provide both control and personalization. On one hand, the actor selects from a set of options, thereby exercising a degree of "decision freedom" (Steiner, 1970). On the other hand, the actor's expression of individual preference is an

assertion of self-identity and places a personal imprint on the task. As such, the enhancement that Cordova and Lepper attributed to choice, independent of personalization, may in fact have been due to personalization. More generally, this raises the possibility that the personalizing aspect of choice may be critical to understanding its benefits.

In their interpretation of choice-enhanced confidence, Tafarodi et al. (1999) focused on perceived control as the key mediator. The foregoing discussion, however, suggests that personalization may be of equal or greater importance for understanding the underlying process. To examine this possibility, we revisited the effect of choice on self-perceived performance. We manipulated choice to provide or prevent personalization, enabling us to assess the importance of the latter. Extending beyond evaluations of task performance, we also examined the effects of choice-derived personalization and control on state self-esteem.

## STUDY 1

### *Overview*

College students were asked to read and understand a short story. Prior to reading, some were allowed to choose the names of the characters that appeared in the story, whereas others were not. For those given choices, some chose on the basis on personal preference, whereas others chose on the basis of what they thought most other students might prefer. Story comprehension was tested afterward. Post-task self-ratings of comprehension and test performance were examined as a function of choice and personalization, controlling for actual performance.

### *Method*

#### *PARTICIPANTS*

Participants were 215 students (105 women and 110 men) enrolled in an introductory psychology course at the University of Toronto. All participated in exchange for course credit. The ethnic composition of the class from which participants were recruited was 47% European; 29% East or Southeast Asian; 7% South Asian; 3% Middle Eastern; 3% Caribbean; 2% Latin, Central, or South American; 1% African; < 1% Aboriginal; < 1% Pacific Islander; and 7% unidentified. All participants were fluent in English. The modal age was 19.

#### *MATERIALS AND PROCEDURE*

Participants were tested individually by a female experimenter. The session involved working through a computerized task. The task was a modified version of that used by Tafarodi et al. (1999) to demonstrate the

effect of choice on confidence. Participants are asked to read and understand a story presented on a computer. The story is a self-standing excerpt from a novel by Buchi Emecheta (1979) and describes a young Nigerian tribesman's betrayal of his sister. It was selected because of its simple, action-focused style and exotic character names that can be easily manipulated to create equally unfamiliar choice options.

The studies reported by Tafarodi et al. (1999) relied on female samples, limiting generalization of the findings. Evidence that men may be more sensitive than women to certain control manipulations (e.g., Burger & Cooper, 1979; Henry, 1994) recommends that gender differences be examined here. As such, we decided to block on gender. The full design was a 2 (gender)  $\times$  2 (self-relevance: personal, impersonal)  $\times$  3 (choice: effective, ineffective, no), with all factors being between-groups. Men and women were assigned separately to one of the six experimental conditions: personal effective choice, personal ineffective choice, personal no choice, impersonal effective choice, impersonal ineffective choice, and impersonal no choice. Before reading the story, participants in the effective choice and ineffective choice conditions were asked to make some selections. Six sets of names were presented in series. Each set consisted of six highly similar names that had been created by transposing one pair of consonants within an original name (e.g., Ojeteba, Otejeba, Obejeta, Obeteja, Otebeja, Ojebeta). This strategy ensured very subtle differences among options, which tends to produce the highest degree of perceived choice (Harvey & Harris, 1975; Harvey & Johnson, 1973; Jellison & Harvey, 1973; Steiner, Rotermund, & Talaber, 1974). More pronounced differences can lead to obvious choices that reduce perceived freedom. In the personal ineffective choice and personal effective choice conditions, participants were instructed to choose the option that they personally liked the best, based on sound and appearance. In the impersonal ineffective choice and impersonal effective choice conditions, participants were instructed to choose the option that they thought most other University of Toronto students of their age and sex might like the best, based on sound and appearance. Impersonal choice was intended to provide control without the self-expressive, individuating significance of personal choice. In both cases, it was impressed on participants that the choices were purely a matter of opinion and could not be judged right or wrong.<sup>1</sup> Furthermore, none of the participants had reason at this point to suspect that the choices they were making would in any way affect the story that was to follow. Rather, they were simply told that the researchers were surveying name preferences and would appreciate the participants' opinions

before proceeding to the story. The choice procedure was skipped for participants in the no choice condition.

Participants in the effective choice conditions then learned that their six selections would be used as character names in the story. Participants in the ineffective choice conditions, in contrast, were told that the character names would be randomly selected from the lists that they had viewed. The intent here was to separate the act of choosing, present in both the effective choice and ineffective choice conditions, from the recognition of its impact on the form of the task, present in only the effective choice conditions. Only choice that is perceived to affect the task should boost confidence; choice for its own sake should not. All participants then rated their liking, on a 1 (*not at all*) to 10 (*very much*) scale, of each of six names that would appear in the story they were about to read. These ratings allowed for analysis of name liking as a function of experimental condition. If the options were successful in producing subtle preferences, as intended, then any differences across conditions should be modest.

In the effective choice conditions, participants were assigned the six names they had chosen. In the ineffective choice conditions, the names were not randomly selected as the participants had been told but, rather, were the names that a yoked effective choice participant had chosen. In instances where the two yoked participants had made the same choice, a substitute was randomly selected from the six-option list. This ensured that ineffective choice participants were not coincidentally assigned any of the names they had chosen. Participants in the no choice condition also were assigned the choices of a yoked effective choice participant. The systematic matching required four no choice conditions, corresponding to the separate male and female personal and impersonal choice conditions.

All participants then rated on a 1 (*not at all*) to 10 (*completely*) scale how well they expected to understand the story they were about to read. They were informed that the story was written in simple language, had a linear structure, and would be presented at a speed that was not overly difficult to keep up with. This rating provided a measure of anticipatory confidence, which was not expected to differ across conditions. In contrast to the cueing effect of Langer (1975), augmentation should not occur before the task, in this case reading, is underway. To check that personal and impersonal effective choice led to similarly enhanced perceptions of control, as intended, participants then rated on a 1 (*none*) to 10 (*a lot*) scale how much control they felt they had over the form of the reading task.

The story was then presented as a single line of text that crawled from right to left at 7 cm/s across the mid-

dle of the monitor screen. Controlled presentation was used to keep reading speed constant across participants. Following the 30-minute story, participants rated on a scale of 1 (*not at all*) to 10 (*very*) how interesting they found the story. Self-reported interest provides a simple measure of intrinsic motivation (Reeve & Nix, 1997), which is not expected to vary much as a function of choice for a task that is already highly engaging (see Tafarodi et al., 1999). Moreover, the predicted enhancement of confidence is assumed to occur independent of any change in intrinsic motivation. Participants then rated on a 1 (*not at all*) to 10 (*completely*) scale how well they felt they had understood the story. This was the first post-task measure of confidence. The ratings were followed by 26 four-option multiple-choice questions. This test assessed knowledge of the actions and qualities of the characters and places in the story, providing an objective index of task performance. The test had been confirmed as providing good discrimination with no floor or ceiling effects. The computer recorded how much time was spent on each test question. After completing the test, participants estimated how many of the 26 questions they had answered correctly, providing a second post-task measure of confidence.

Finally, participants completed a short, unrelated questionnaire before being debriefed on the nature and purpose of the study. During debriefing, participants were probed as to their thoughts during the procedure. No problematic suspicions or interpretations were revealed. The entire session lasted approximately 45 minutes.

## Results

### PRELIMINARY

The sample was screened for univariate and multivariate outliers. None were found. The 12 cell sizes were approximately equal, ranging from 17 to 19. The total-sample correlation matrix for the variables analyzed below appears in Table 1. Notably, self-rated understanding, estimated test score, and actual test score were all moderately intercorrelated, suggesting that participants' judgments were informed to some degree by how well they did on the task. In contrast, anticipated understanding was not correlated with test score, reflecting the fact that participants had yet to read the story when they made this rating. Means and standard deviations for all variables analyzed below as a function of condition and gender appear in Table 2.

First, correspondence with the findings of Tafarodi et al. (1999) was examined. Whereas the previous studies found no differences in average liking for the six names as a function of choice, a 2 (gender)  $\times$  2 (self-relevance)  $\times$  3 (choice) ANOVA revealed a main effect for choice here,  $F(2, 203) = 10.17, p < .0001$  (all other  $ps > .30$ ). Post

**TABLE 1: Total-Sample Correlation Matrix for Variables Analyzed in Study 1**

Variable	1	2	3	4	5	6	7	8	9
1. Liking of names	—	.10	.27*	.24*	.01	.14	.12	.02	.03
2. Anticipated understanding		—	.04	.13	.13	.39*	.20	-.08	.00
3. Perceived control			—	.12	-.05	.13	.17	.12	.07
4. Interest				—	.32*	.41*	.35*	.04	.17
5. Test score					—	.38*	.57*	-.26*	.07
6. Self-rated understanding						—	.58*	-.11	.08
7. Estimated test score							—	-.29*	.03
8. Time spent on test questions answered correctly								—	.50*
9. Time spent on test questions answered incorrectly									—

\* $p < .001$  (Bonferroni-adjusted value for overall  $\alpha = .05$ ).

hoc comparisons using Tukey's honestly significant difference (HSD) criterion (overall  $\alpha = .05$ ) revealed that liking in the effective choice conditions ( $M = 5.72$ ) and ineffective choice conditions ( $M = 5.47$ ) was significantly higher than in the no choice condition ( $M = 4.61$ ). The effective and ineffective choice conditions, however, did not differ significantly. Why might participants in both choice conditions like the names more than participants in the no choice condition? There is no obvious reason for this difference because participants in the ineffective choice condition were not assigned their preferred names any more than were participants in the no choice condition. One possible explanation is the influence of mere exposure on liking. Participants in both choice conditions had previously viewed, during the choice phase, each of the names they were asked to rate, whereas participants in the no choice condition had not. The double exposure of the former group may account for their greater liking for the names, consistent with research on the attitudinal effects of familiarity (Bornstein & D'Agostino, 1992; Grush, 1976; Zajonc, 1968).

Additional ANOVAs revealed an absence of group differences on anticipated understanding (all  $ps > .19$ ), interest (all  $ps > .35$ ),<sup>2</sup> test score (all  $ps > .17$ ), and time spent per test question (all  $ps > .40$ ). For perceived control, only a main effect for choice was found,  $F(2, 203) = 46.76$ ,  $p < .0001$  (all other  $ps > .43$ ). Planned comparisons confirmed that participants in the effective choice condition felt they had more control over the form of the task than did participants in the ineffective choice condition ( $M = 6.82$  vs.  $M = 3.74$ ),  $F(1, 203) = 67.20$ ,  $p < .0001$ , and no choice condition ( $M = 3.58$ ),  $F(1, 203) = 73.29$ ,  $p <$

.0001. The latter two conditions did not differ significantly,  $F(1, 203) = .18$ ,  $p = .67$ . The results for these five variables replicate the findings of Tafarodi et al. (1999).

#### POST-TASK CONFIDENCE

Consistent with previous findings, post-task confidence should be heightened in the personal effective choice condition. Whether this enhancement depends on personalization will be apparent in comparison of the personal and impersonal effective choice conditions. The correlation of both measures of post-task confidence with actual test score recommends that the latter be controlled for when comparing confidence across gender and conditions. To accomplish this, separate 2 (gender)  $\times$  2 (self-relevance)  $\times$  3 (choice) ANCOVAs were conducted on self-rated understanding and estimated test score, with actual test score included in the models as a covariate.<sup>3</sup> For self-rated understanding, the results yielded only the expected positive association of the covariate,  $F(1, 202) = 46.91$ ,  $p < .0001$ ,  $\eta^2 = .17$ , a small main effect for choice,  $F(2, 202) = 3.78$ ,  $p = .02$ ,  $\eta^2 = .03$ , and a strong qualifying Self-Relevance  $\times$  Choice interaction,  $F(2, 202) = 8.63$ ,  $p = .0003$ ,  $\eta^2 = .06$  (all other  $ps > .11$ ). The interaction decomposed into a significant effect for choice in the personal condition,  $F(2, 202) = 11.55$ ,  $p < .0001$ ,  $\eta^2 = .09$ , but not in the impersonal condition,  $F(2, 202) = .92$ ,  $p = .40$ . These results indicate an absence of any form of choice-induced confidence in the impersonal condition. For the personal condition, in contrast, planned comparisons confirmed that, as expected, participants given effective choice were more confident of their understanding of the story than were participants given ineffective choice (adj.  $M = 7.90$  vs. adj.  $M = 6.20$ ),  $F(1, 202) = 21.01$ ,  $p < .0001$ ,  $\eta^2 = .08$ , and participants given no choice (adj.  $M = 6.57$ ),  $F(1, 202) = 12.64$ ,  $p = .0005$ ,  $\eta^2 = .05$ . The latter two groups did not differ significantly,  $F(1, 202) = 1.03$ ,  $p = .31$ .

The results for the second post-task measure of confidence, estimated test score, were parallel to those obtained for self-rated understanding. The ANCOVA yielded only the expected positive association of the covariate,  $F(1, 202) = 139.74$ ,  $p < .0001$ ,  $\eta^2 = .38$ ; main effects for self-relevance,  $F(1, 202) = 6.19$ ,  $p = .01$ ,  $\eta^2 = .02$ ; and choice,  $F(2, 202) = 6.74$ ,  $p = .002$ ,  $\eta^2 = .04$ ; and a strong qualifying Self-Relevance  $\times$  Choice interaction,  $F(2, 202) = 10.62$ ,  $p < .0001$ ,  $\eta^2 = .06$  (all other  $ps > .37$ ). As before, the interaction decomposed into a significant effect for choice in the personal condition,  $F(2, 202) = 17.24$ ,  $p < .0001$ ,  $\eta^2 = .09$ , but not in the impersonal condition,  $F(2, 202) = .26$ ,  $p = .77$ . Thus, there was again no evidence of choice-induced confidence in the impersonal condition. For the personal condition, in contrast, planned comparisons confirmed that participants given

TABLE 2: Means on Variables Analyzed as a Function of Gender, Self-Relevance, and Choice in Study 1

Variable	Self-Relevance	Choice	Gender					
			Women			Men		
			M	SD	Adj. M <sup>a</sup>	M	SD	Adj. M
Liking of names	Personal	Effective	6.07	(1.66)	—	5.70	(1.32)	—
		Ineffective	5.20	(1.78)	—	6.06	(0.98)	—
		No	4.34	(1.31)	—	4.77	(1.58)	—
	Impersonal	Effective	5.48	(1.54)	—	5.62	(1.35)	—
		Ineffective	5.16	(1.47)	—	5.46	(1.59)	—
		No	4.71	(1.51)	—	4.64	(2.04)	—
Anticipated understanding	Personal	Effective	8.00	(1.06)	—	8.00	(1.41)	—
		Ineffective	8.56	(1.15)	—	7.72	(1.02)	—
		No	8.11	(1.64)	—	7.83	(1.50)	—
	Impersonal	Effective	8.29	(1.16)	—	7.78	(1.40)	—
		Ineffective	7.67	(1.28)	—	7.89	(1.82)	—
		No	8.06	(1.64)	—	7.94	(1.63)	—
Perceived control	Personal	Effective	6.76	(2.31)	—	7.21	(2.32)	—
		Ineffective	3.94	(1.98)	—	3.17	(2.36)	—
		No	3.72	(2.59)	—	3.72	(2.08)	—
	Impersonal	Effective	6.47	(1.91)	—	6.83	(2.38)	—
		Ineffective	4.06	(2.75)	—	3.79	(2.25)	—
		No	3.76	(2.33)	—	3.11	(1.49)	—
Interest	Personal	Effective	7.18	(1.55)	—	5.21	(2.20)	—
		Ineffective	6.39	(2.03)	—	5.83	(1.62)	—
		No	5.94	(2.39)	—	5.44	(2.73)	—
	Impersonal	Effective	6.65	(1.50)	—	5.67	(2.63)	—
		Ineffective	6.33	(1.64)	—	5.32	(2.00)	—
		No	6.76	(1.99)	—	5.28	(2.19)	—
Test score	Personal	Effective	19.24	(2.46)	—	18.32	(2.93)	—
		Ineffective	19.22	(3.70)	—	19.67	(3.93)	—
		No	19.50	(3.91)	—	20.44	(3.36)	—
	Impersonal	Effective	20.12	(3.95)	—	20.78	(3.62)	—
		Ineffective	20.06	(2.18)	—	19.42	(2.41)	—
		No	20.18	(3.63)	—	19.50	(2.50)	—
Estimated test score	Personal	Effective	19.76	(2.08)	20.14	20.58	(3.53)	21.72
		Ineffective	16.83	(5.92)	17.22	17.06	(4.15)	17.08
		No	16.89	(5.49)	17.05	17.28	(5.69)	16.66
	Impersonal	Effective	17.35	(4.73)	17.00	17.67	(3.73)	16.77
		Ineffective	17.78	(3.61)	17.48	17.16	(3.52)	17.38
		No	17.24	(3.51)	16.84	17.56	(3.13)	17.72
Self-rated understanding	Personal	Effective	7.65	(1.11)	7.75	7.74	(1.37)	8.06
		Ineffective	6.28	(1.32)	6.39	6.00	(1.68)	6.01
		No	6.61	(2.30)	6.66	6.67	(2.17)	6.49
	Impersonal	Effective	6.53	(1.33)	6.43	6.56	(2.41)	6.30
		Ineffective	6.94	(1.59)	6.86	6.74	(1.37)	6.80
		No	6.59	(1.97)	6.48	6.33	(1.75)	6.38
Time <sup>b</sup> spent on test questions answered correctly	Personal	Effective	8.87	(2.48)	—	9.37	(1.99)	—
		Ineffective	9.08	(3.33)	—	8.91	(2.62)	—
		No	9.99	(2.70)	—	8.98	(2.33)	—
	Impersonal	Effective	9.06	(1.88)	—	8.63	(1.64)	—
		Ineffective	8.98	(2.08)	—	9.80	(2.68)	—
		No	9.69	(2.68)	—	9.04	(1.62)	—
Time spent on test questions answered incorrectly	Personal	Effective	15.11	(6.65)	—	15.38	(5.87)	—
		Ineffective	15.12	(10.23)	—	13.17	(3.72)	—
		No	15.15	(5.10)	—	14.94	(5.18)	—
	Impersonal	Effective	14.44	(5.11)	—	12.70	(3.28)	—
		Ineffective	13.70	(7.32)	—	14.81	(5.26)	—
		No	15.42	(7.36)	—	14.99	(4.77)	—

NOTE: Scale ranges are 0 to 26 for estimated and actual test score and 1 to 10 for all other ratings.

a. Means adjusted for actual test score.

b. Average time per question, in seconds.

effective choice gave higher test score estimates than did participants given ineffective choice (adj.  $M = 20.93$  vs. adj.  $M = 17.15$ ),  $F(1, 202) = 24.00$ ,  $p < .0001$ ,  $\eta^2 = .07$ , and participants given no choice (adj.  $M = 16.85$ ),  $F(1, 202) = 27.71$ ,  $p < .0001$ ,  $\eta^2 = .08$ . As before, the latter two groups did not differ significantly,  $F(1, 202) = .15$ ,  $p = .70$ .

### Discussion

The results replicate Tafarodi et al.'s (1999) finding that only choices with perceptible consequences for the task lead to enhanced confidence. Control is therefore a critical ingredient for enhancement. This was evident in relation to self-perceptions of both story comprehension and test performance and was independent of actual performance, which did not differ as a function of choice. The latter result fits with the lack of difference across conditions in intrinsic motivation, test speed, and pretask confidence in suggesting that motivation was not appreciably increased by incidental choice on this naturally interesting task. The absence of effect on pretask confidence is consistent with the hypothesized excitation transfer, which is assumed to occur during but not before the task. The relevant consequences of choice appear to require engagement with the task for their expression. What are these consequences? The increment of control derived from effective choice was previously assumed to explain the enhancement effect. The present findings suggest otherwise. Recall that impersonal and personal effective choice boosted perceptions of control to the same degree, but only the latter enhanced confidence. Hence, it appears that increased control is a necessary but insufficient condition for enhancement to occur. The choices also must personalize the task by impressing the actor's own preferences on it.

Prior to consideration of the long-term consequences of enhanced task confidence, its more immediate benefits deserve closer attention. One important concomitant of feeling effective is increased self-esteem (Bandura, 1990; Bernard, Hutchison, Lavin, & Pennington, 1996; Stanley & Murphy, 1997; White, 1963). The choice-enhanced confidence demonstrated in Study 1 was reflected in judgments of performance. Evidence that judgments of self are similarly affected would suggest that the effects of choice are more than trivial and hold the potential to bolster self-worth, at least temporarily. The enhancement of self-esteem by incidental choice represents a more generalized form of confidence with promising implications. If confirmed, such enhancement would point to choice as a means of combating the deleterious effects of negative self-regard. To examine this issue, we focused on self-esteem in Study 2 and tested the prediction that personalizing choice would selec-

tively boost the performance-related dimension of state self-esteem.

### STUDY 2

#### Overview

College students completed one of three versions of a state self-esteem measure consisting of multiple items. In one version, students responded to the items in the order they appeared on the questionnaire. In the other two versions, students were allowed to choose the order. Half of those given this choice ordered the items according to personal preference, whereas the other half ordered the items according to what they thought most other students would prefer. Perceived control and self-esteem scores were compared across versions to test predictions.

#### Method

##### PARTICIPANTS

Participants were 86 students (63 women and 23 men) enrolled in an introductory psychology course at the University of Toronto. The ethnic composition of the class from which they were recruited was comparable to that reported in Study 1. All were fluent in English. All participated in exchange for course credit or a small cash payment. The modal age was 19.

##### MATERIALS AND PROCEDURE

Participants were tested in small groups by a female experimenter. All completed the State Self-Esteem Scale (SSES) (Heatherton & Polivy, 1991), a self-report instrument designed to detect short-term shifts in self-esteem. SSES respondents indicate, using a 5-point scale anchored with *not at all* and *extremely*, how well each of 20 statements describes how they are feeling at the moment. The statements are of three types, representing performance (e.g., "I feel confident about my abilities"), social (e.g., "I am worried about what other people think of me"), and appearance (e.g., "I feel satisfied with the way my body looks right now") self-esteem. The reliability and validity of the SSES have been shown to be adequate (Heatherton & Polivy, 1991). Because performance self-esteem is clearly linked to control and self-expression, we hypothesized that it would be uniquely sensitive to enhancement by personal choice. Social and appearance self-esteem, in contrast, are not directly relevant and should not be affected by choice.

Participants were randomly assigned to complete one of three versions of the SSES. In the no choice condition, participants were instructed to complete the 20 items in the order in which they appeared on the page. In the personal choice condition, participants were instructed to read through all 20 statements before choosing the

**TABLE 3: Total-Sample Correlation Matrix for Variables Analyzed in Study 2**

Variable	1	2	3	4
1. Performance self-esteem	—	.55*	.39*	.03
2. Social self-esteem		—	.41*	-.15
3. Appearance self-esteem			—	-.16
4. Perceived control				—

\* $p < .008$  (Bonferroni-adjusted value for overall  $\alpha = .05$ ).

one they preferred to respond to first, then read through the remaining statements to choose the one they preferred to respond to next, and so on. In the impersonal choice condition, the instructions were identical to those for personal choice, with the exception that participants' choices were to reflect their judgment of what other University of Toronto students of their age and sex might prefer. For both choice conditions, participants indicated the ordinal position (1-20) of each statement before responding to it.

After completing the SSES, all participants indicated, using a 10-point scale anchored with *none* and *a lot*, how much control they felt they had in filling out the measure. Finally, participants were debriefed on the nature and purpose of the study. The entire procedure lasted approximately 20 minutes.

## Results

### PRELIMINARY

One participant was eliminated because of missing responses. There were no univariate or multivariate outliers. The three cell sizes were roughly equal, ranging from 27 to 29. Because all results were similar for men and women, gender will not be discussed further.

The total-sample correlation matrix for the variables analyzed below appears in Table 3. Means and standard deviations appear in Table 4. As found in past research (Heatherton & Polivy, 1991), the three SSES subscale scores (performance, social, and appearance) were all moderately intercorrelated.

### PERCEIVED CONTROL

Participants given either personal or impersonal choice were expected to experience greater control over the manner in which they completed the measure than were participants not given choice. A one-way (version) ANOVA revealed significant differences in self-rated control across conditions,  $F(2, 82) = 25.46, p < .0001, \eta^2 = .38$ . Planned comparisons confirmed that participants in the no choice condition felt less control ( $M = 3.96$ ) than did both those in the personal choice condition ( $M = 8.17$ ),  $F(1, 82) = 46.83, p < .0001, \eta^2 = .35$ , and those in the impersonal choice condition ( $M = 7.21$ ),  $F(1, 82) =$

**TABLE 4: Means on Variables Analyzed as a Function of Choice in Study 2**

Variable	Choice		
	None	Personal	Impersonal
Perceived control	3.96 (2.81)	8.17 (2.04)	7.21 (2.01)
Self-esteem <sup>a</sup>			
Performance	3.68 (0.76)	4.22 (0.70)	3.68 (0.69)
Social	3.67 (0.70)	3.64 (0.67)	3.42 (0.72)
Appearance	3.57 (0.54)	3.44 (0.50)	3.41 (0.71)
Choice position <sup>b</sup>			
Performance	—	9.91 (1.81)	9.45 (2.93)
Social	—	11.48 (2.15)	10.79 (2.25)
Appearance	—	10.05 (2.50)	11.39 (3.27)

NOTE: Scale ranges are 1 to 10 for perceived control, 1 to 5 for self-esteem scales, 4 to 17 for choice position of performance and social items, and 3.5 to 17.5 for choice position of appearance items. Standard deviations appear in parentheses.

a. Average item rating.

b. Average rank position of item in chosen order.

27.81,  $p < .0001, \eta^2 = .21$ . Furthermore, as expected, the two choice conditions did not differ significantly,  $F(1, 82) = 2.55, p = .11$ .

### STATE SELF-ESTEEM

To determine whether personal choice selectively enhanced performance self-esteem, as predicted, a one-way (version) MANOVA was conducted on the three SSES subscale scores (scaled as average item ratings). The results revealed significant multivariate differences across conditions, Wilks's  $\Lambda = .81, F(6, 160) = 2.98, p = .009$ . Univariate analyses revealed that the effect was due to differences in performance,  $F(2, 82) = 5.37, p = .006, \eta^2 = .12$ , but not social,  $F(2, 82) = 1.12, p = .33$ , or appearance,  $F(2, 82) = .53, p = .59$ , self-esteem. Furthermore, the pattern of differences on performance self-esteem was as predicted. Specifically, planned comparisons confirmed that participants given personal choice were higher on this dimension ( $M = 4.22$ ) than both those given impersonal choice ( $M = 3.68$ ),  $F(1, 82) = 8.20, p = .005, \eta^2 = .09$ , and those given no choice ( $M = 3.68$ ),  $F(1, 82) = 7.82, p = .006, \eta^2 = .08$ . Because the means for the latter two conditions were identical, statistical comparison was unnecessary.

### CHOICE ORDER

The mean within-subject correlation of item rating and rank position for those given either type of choice was negligible ( $r = .16$ ). This suggests that choice participants did not order the items according to how positively they felt they (or someone else) could respond to them. Moreover, there was no significant difference between personal versus impersonal choice in the average rank position participants gave to performance items ( $M_s =$

9.91 vs. 9.45),  $t(56) = .72$ ,  $p = .48$ . Hence, the enhanced performance self-esteem of those given personal choice cannot be attributed to choice order.

### Discussion

Study 2 was conducted to determine whether the immediate benefits of personal choice extend beyond enhanced perceptions of task performance. The results suggest that they do. Namely, participants who completed a state self-esteem measure in a manner that reflected their own preferences experienced both heightened control and increased performance self-esteem. On the other hand, those whose choices were deflected away from the self and toward the preferences of others experienced similarly heightened control but no corresponding increase in performance self-esteem. These results converge with those of Study 1 in suggesting that choice-derived control is a necessary but insufficient condition for enhanced self-evaluation. Only when choice serves as a vehicle for identity expression do actors end up feeling surer of their abilities. Furthermore, personal choice not only enhances judgments of task outcome but also bolsters one's self-image as a competent agent, at least temporarily. That is, actors who are able to affect the form of the task in a self-expressive manner appear to feel better about both the task and themselves.

### GENERAL DISCUSSION

Taken together, the two studies reported here suggest that choice boosts confidence by allowing the actor to form a personal connection to the task. The projection of one's own preferences, rather than those of another, on the shape of the task appears to give rise to a form of emotional excitation that is distinct from simple control. The characteristics and correlates of this emotional state remain to be explored. Whatever its defining features, the excitation resulting from choice appears to augment the excitation resulting from subsequent task activity to produce enhanced perceptions of performance and agency. Note that the merger of choice-dependent and task-dependent excitation does not imply that the two states are one and the same but, rather, that they have enough in common to permit "transfer" (Zillmann, 1996).

Why might choice have distinct emotional consequences of the sort posited here? The answer may lie in our distinctively human need for self-definition. Identity expression has long been viewed as a central aspect of motivation (Bakan, 1966; Guisinger & Blatt, 1994; Maslow, 1945; Sullivan, 1953). Beyond social ascription, identity is forged through action: We are what we do, especially what we *choose* to do. As such, it is hardly surprising that the expression of personal preference, when

untainted by fear of negative consequences, is associated with a specific, positive emotional state. The adaptive significance of this state may be its potential to intensify the contrast of ego boundaries ("me" vs. "not me"), heighten self-awareness of personal attributes, and positively reinforce the expression of autonomy. Deci and Ryan (1985) have attached similar functional significance to acts of "self-determination," as have Brewer (1991) and Snyder and Fromkin (1980) to the need for individuality and distinctiveness.

Our argument that identity may be key to understanding the effect of choice on confidence fits with a recent reinterpretation of the overconfidence effect as a dissonance reduction phenomenon. In a pair of studies, Blanton, Pelham, DeHart, and Carvallo (2001) found that task overconfidence increased with greater personal investment in the task and was reduced by affirming valued aspects of identity. The implication of self-related motives in the expression of a judgmental bias mirrors the broader significance of the present studies.

Practically, our findings suggest that tasks that allow for choice may increase perceived control yet have little influence on judgments of performance if the choices are made in accord with the presumed preferences of others or similarly external criteria. Task designers and administrators should therefore be attuned to the context of decision making when anticipating the psychological consequences of choice.

The increased post-task confidence of participants who made consequential and personalizing choices in Study 1 is not a clear example of task overconfidence (Sniezek, Paese, & Switzer, 1990). Comparison of actual and estimated scores revealed that these participants overestimated the number of questions they answered correctly by 1.44 on average, whereas all other participants underestimated their scores by 2.60. Choice-enhanced confidence, then, led to slightly greater accuracy in estimation, not to pronounced overconfidence, which might be costly in contexts where realistic self-assessment is at a premium. In fact, participants not allowed to choose in the critical manner were somewhat diffident in their estimates, giving themselves less credit for their performance than their scores warranted. On the other hand, participants' predictions of how well they would understand the story were, on the whole, more positive than their post-task understanding ratings. This pre-post difference is consistent with Radhakrishnan, Arrow, and Sniezek's (1996) evidence that there is greater overconfidence before a task than after when self-diagnostic feedback is available. Furthermore, Radhakrishnan et al. found that the pre-post difference diminished with repeated exposure to the task. This finding raises the possibility that the effect of personal choice on confidence may weaken with extended

experience in the same performance context. The temporal limits of the effect therefore should be examined in future research.

Even if its potency as a confidence builder proves to be strongest when a task is first taken up, choice may be beneficial in settings that elicit fear and pessimism. High anxiety, excessive concern about failure, and depressed expectations tend to undermine learning and performance. For example, underachievement in school often stems from unwarranted lack of confidence and motivational withdrawal (Kniveton, 1998). Similarly, children with learning difficulties often approach classroom exercises with a sense of hopelessness that limits progress (Edmundson, 1990). Insofar as choice leads to greater faith in oneself and one's performance, it may at least partially offset such self-defeating tendencies, leading to fuller engagement and more positive outcomes. Consistent with this, allowance for self-direction and self-expression has been shown to promote children's engagement in reading (Guthrie, Cox, Anderson, Harris, Mazzoni, & Rach, 1998) and, more generally, to increase self-perceived competence (Deci, Schwartz, Sheinman, & Ryan, 1981). Similar benefits are evident in occupational settings (Deci, Connell, & Ryan, 1989).

Mirroring Tafarodi et al. (1999; see also Veitch & Gifford, 1996), the exercise of choice did not lead to improved performance in Study 1. Such benefits were not expected in relation to a single, brief exposure to a spontaneously engaging task. The self-realizing potential of strong efficacy convictions, however, would be apparent in the context of long-term skill acquisition. There, determination and persistence are needed to overcome the obstacles and setbacks that are an inevitable part of the learning process.

Whatever the extended benefits of confidence, the present findings suggest that its enhancement through freedom of choice requires personalization of the task. It is not simply control derived from choice that boosts perceptions of competence but, rather, a particular form of emotional excitation that depends on the self-assertion of identity. In a phrase, one must choose to put oneself in the task.

#### NOTES

1. Analysis of selection time (average time per choice in log ms), as measured by the computer, confirmed that impersonal choices did not take longer than personal choices,  $t(142) = .08, p = .95$ . This invariance suggests that, as intended, impersonal choice did not elicit greater concern with the objective significance of selections than did personal choice.

2. The one exception was a significant gender effect,  $F(1, 203) = 14.55, p = .0002$ , with women finding the story somewhat more interesting than men ( $M = 6.53$  vs.  $M = 5.45$ ). This difference may simply reflect the particular story used, which focuses more on the thoughts and feelings of the young girl featured than on those of her older brother.

3. For all ANCOVAs conducted, preliminary analyses confirmed homogeneity of covariance across conditions and gender. Also, in rec-

ognition of the interpretive hazards of interpreting residualized means (see Lees & Neufeld, 1994), supplementary ANOVAs (covariate eliminated) were conducted alongside the ANCOVAs. In all cases, the ANCOVA and ANOVA yielded the same pattern of results, indicating that the effects were not due to residualization. Finally, parallel ANCOVAs that included anticipated understanding as a second covariate were conducted. This additional control did not change the pattern of results.

#### REFERENCES

- Anand, P. G., & Ross, S. M. (1987). Using computer-assisted instruction to personalize arithmetic materials for elementary school children. *Journal of Educational Psychology, 79*, 72-78.
- Bakan, D. (1966). *The duality of human existence: Isolation and communion in Western man*. Boston: Beacon.
- Bandura, A. (1990). Conclusion: Reflections on nonability determinants of competence. In R. J. Sternberg & J. Kolligian, Jr. (Eds.), *Competence considered* (pp. 315-362). New Haven, CT: Yale University Press.
- Bandura, A. (1992). Exercise of personal agency through the self-efficacy mechanism. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 3-38). Washington, DC: Hemisphere.
- Bardwell, R. (1984). The development and motivational function of expectations. *American Educational Research Journal, 21*, 461-472.
- Bernard, L. C., Hutchison, S., Lavin, A., & Pennington, P. (1996). Ego-strength, hardiness, self-esteem, self-efficacy, optimism, and maladjustment: Health-related personality constructs and the Big Five model of personality. *Assessment, 3*, 115-131.
- Blanton, H., Pelham, B. W., DeHart, T., & Carvallo, M. (2001). Overconfidence as dissonance reduction. *Journal of Experimental Social Psychology, 37*, 373-385.
- Bornstein, R. F., & D'Agostino, P. R. (1992). Stimulus recognition and the more exposure effect. *Journal of Personality and Social Psychology, 63*, 545-552.
- Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*, 475-482.
- Burger, J. M. (1987). Increased performance with increased personal control: A self-presentational interpretation. *Journal of Experimental Social Psychology, 23*, 350-360.
- Burger, J. M. (1989). Negative reactions to increases in perceived personal control. *Journal of Personality and Social Psychology, 56*, 246-256.
- Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and Emotion, 3*, 381-393.
- Chan, F., Karbowski, J., Monty, R. A., & Perlmutter, L. C. (1986). Performance as a source of perceived control. *Motivation and Emotion, 10*, 59-70.
- Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization, and choice. *Journal of Educational Psychology, 88*, 715-730.
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology, 4*, 580-590.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., Schwartz, A. J., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology, 73*, 642-650.
- Edmundson, P. (1990). Meeting the needs of maladjusted children with specific learning difficulties. *Maladjustment and Therapeutic Education, 8*, 35-42.
- Emecheta, B. (1979). *The slave girl*. London: Collins/Fontana Books.
- Grush, J. E. (1976). Attitude formation and mere exposure phenomena: A nonartifactual explanation of empirical findings. *Journal of Personality and Social Psychology, 33*, 281-290.
- Guisinger, S., & Blatt, S. J. (1994). Individuality and relatedness: Evolution of a fundamental dialectic. *American Psychologist, 49*, 104-111.

- Guthrie, J. T., Cox, K. E., Anderson, E., Harris, K., Mazzoni, S., & Rach, L. (1998). Principles of integrated instruction for engagement in reading. *Educational Psychology Review*, *10*, 177-199.
- Harvey, J. H., & Harris, B. (1975). Determinants of perceived choice and the relationship between perceived choice and expectancy about feelings of internal control. *Journal of Personality and Social Psychology*, *31*, 101-106.
- Harvey, J. H., & Johnson, S. (1973). Determinants of the perception of choice. *Journal of Experimental Social Psychology*, *9*, 164-179.
- Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology*, *60*, 895-910.
- Henry, R. A. (1994). The effects of choice and incentives on the overestimation of future performance. *Organizational Behavior and Human Decision Processes*, *57*, 210-225.
- Henry, R. A., & Sniezek, J. A. (1993). Situational factors affecting judgments of future performance. *Organizational Behavior and Human Decision Processes*, *54*, 104-132.
- Jellison, J. M., & Harvey, J. H. (1973). Determinants of perceived choice and the relationship between perceived choice and perceived competence. *Journal of Personality and Social Psychology*, *28*, 376-382.
- Kniveton, B. H. (1998). Underachieving boys: A case for working harder or boosting self-confidence? *Emotional and Behavioural Difficulties*, *3*, 23-28.
- Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology*, *32*, 311-328.
- Langer, E. J. (1983). *The psychology of control*. Beverly Hills, CA: Sage.
- Lees, M. C., & Neufeld, R. W. J. (1994). Matching the limits of clinical inference to the limits of quantitative methods: A formal appeal to practice what we consistently preach. *Canadian Psychology*, *35*, 268-282.
- Leventhal, H. (1979). A perceptual-motor processing model of emotion. In P. Pliner, K. R. Blankstein, & I. M. Spigel (Eds.), *Advances in the study of communication and affect: Vol. 5. Perception of emotion in self and others* (pp. 1-46). New York: Plenum.
- Markus, H., Cross, S., & Wurf, E. (1990). The role of the self-system in competence. In R. J. Sternberg & J. Kolligian, Jr. (Eds.), *Competence considered* (pp. 205-225). New Haven, CT: Yale University Press.
- Maslow, A. H. (1945). A theory of human motivation. *Psychological Review*, *50*, 370-396.
- Paterson, R. J., & Neufeld, R. W. J. (1995). What are my options? Influences of choice availability on stress and the perception of control. *Journal of Research in Personality*, *29*, 145-167.
- Perlmutter, L. C., Goldfinger, S. H., Sizer, N. R., & Monty, R. A. (1989). Choosing to improve performance. In P. S. Fry (Ed.), *Psychological perspectives of helplessness and control in the elderly* (pp. 395-411). Amsterdam: North-Holland.
- Perlmutter, L. C., Monty, R. A., & Kimble, G. A. (1971). Effect of choice on paired-associate learning. *Journal of Experimental Psychology*, *91*, 47-53.
- Perlmutter, L. C., Scharff, K., Karsh, R., & Monty, R. A. (1980). Perceived control: A generalized state of motivation. *Motivation and Emotion*, *4*, 35-45.
- Radhakrishnan, P., Arrow, H., & Sniezek, J. A. (1996). Hoping, performing, learning, and predicting: Changes in accuracy of self-evaluations of performance. *Human Performance*, *9*, 23-49.
- Reeve, J., & Nix, G. (1997). Expressing intrinsic motivation through acts of exploration and facial displays of interest. *Motivation and Emotion*, *21*, 237-250.
- Rodin, J. (1990). Control by any other name: Definitions, concepts, and processes. In J. Rodin, C. Schooler, & K. W. Schaie (Eds.), *Self-directedness: Causes and effects throughout the life course* (pp. 1-17). Hillsdale, NJ: Lawrence Erlbaum.
- Rodin, J., Rennert, K., & Solomon, S. K. (1980). Intrinsic motivation for control: Fact or fiction. In A. Baum & J. E. Singer (Eds.), *Advances in environment psychology: Vol. 2. Applications of personal control* (pp. 131-148). Hillsdale, NJ: Lawrence Erlbaum.
- Ross, S. M., McCormick, D., & Krisak, N. (1986). Adapting the thematic context of mathematical problems to students' interests: Individualizing versus group-based strategies. *Journal of Educational Research*, *79*, 245-252.
- Smith, G. P. (1973). Adrenal hormones and emotional behavior. In E. Stellar & J. M. Sprague (Eds.), *Progress in physiological psychology* (pp. 299-351). New York: Academic Press.
- Sniezek, J. A., Paese, P. W., & Switzer, F. S., III. (1990). The effect of choosing on confidence in choice. *Organizational Behavior and Human Decision Processes*, *46*, 264-282.
- Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness: The human pursuit of difference*. New York: Plenum.
- Stanley, K. D., & Murphy, M. R. (1997). A comparison of general self-efficacy with self-esteem. *Genetic, Social, and General Psychology Monographs*, *123*, 79-99.
- Steiner, I. D. (1970). Perceived freedom. *Advances in Experimental Social Psychology*, *5*, 187-248.
- Steiner, I. D., Rotermund, M., & Talaber, R. (1974). Attribution of choice to a decision maker. *Journal of Personality and Social Psychology*, *30*, 553-562.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Tafarodi, R. W., Milne, A. B., & Smith, A. J. (1999). The confidence of choice: Evidence for an augmentation effect on self-perceived performance. *Personality and Social Psychology Bulletin*, *25*, 1405-1416.
- Veitch, J. A., & Gifford, R. (1996). Choice, perceived control, and performance decrements in the physical environment. *Journal of Environmental Psychology*, *16*, 269-276.
- White, R. W. (1963). Ego and reality in psychoanalytic theory: A proposal regarding independent ego energies. *Psychological Issues*, *3*(3, Monograph 11). New York: International Universities Press.
- Wright, J. P., & Wright, C. D. (1986). Personalized verbal problems: An application of the language experience approach. *Journal of Educational Research*, *79*, 358-362.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, *9*, 1-27.
- Zillmann, D. (1983). Transfer of excitation in emotional behaviour. In J. T. Cacioppo & R. E. Petty (Eds.), *Social psychophysiology: A sourcebook* (pp. 215-240). New York: Guilford.
- Zillmann, D. (1996). Sequential dependencies in emotional experience and behavior. In R. D. Kavanaugh, B. Zimmerman, & S. Fein (Eds.), *Emotion: Interdisciplinary perspectives* (pp. 243-272). Hillsdale, NJ: Lawrence Erlbaum.

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