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Aligning Task Control with Desire for Control: Implications for Performance

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Abstract

The current study examined whether matches between task control and participants' desire for control over their environment lead to better task performance than mismatches. Work control and desire for control were manipulated, and participants engaged in timed tasks. As predicted, performance was higher in cases of match, even when task control and desire for control were low. Task control and desire for control may predict work performance in combination, highlighting the importance of Person-Environment Fit theory for both selection and work design. By manipulating desire for control, our research also explores the potentially state-dependent quality of this individual difference variable.

Keywords

control; desire for control; performance; Person-Environment Fit; Demand-Control

In recent years, recessions, downsizing, and a trend towards shorter contracts have left a smaller, insecure workforce with more to do and less control with which to do it (Mikkelsen, Ogaard, & Landsbergis, 2005). This development is partly responsible for a multitude of negative work-related consequences, including low productivity and poor performance (Edwards, Guppy, & Cockerton, 2007). As workplace performance is of utmost importance to organizations, it is critical to identify the key predictors of employee performance.

Demand-Control Model

Two factors thought to be particularly important for employee performance are job demands and job control (Flynn & James, 2009; Searle, Bright, & Bochner, 1999). Job demands are described as the amount and difficulty of an employee's work and may be conceptualized in terms of quantitative workload or time pressure (Parker, Jimmieson, & Amiot, 2009). Job control is characterized by the degree of autonomy, active participation, and decision-making latitude an employee possesses within an organization. Researchers have operationalized job control as freedom to manipulate job demands and control one's outcomes (Karasek, 1979).

One influential model within the occupational stress literature is Karasek's (1979) Demand-Control Model (D-CM). Karasek theorized that work demands and job control interact to

predict work performance and productivity. The D-CM asserts that the most detrimental work-related outcomes result from high demand, low control situations. Performance and productivity are presumably hindered by the stress experienced in these situations, referred to as “high strain” work conditions (Karasek, 1979). Another expectation of the D-CM is that the most positive work-related outcomes stem from high demand, high control situations. Jobs that are consistently demanding, yet afford employees the outlet of control to cope with the demands are known as “active” jobs. High levels of work control and demands are thought to result in constructive work-related outcomes such as increased performance, motivation, adjustment, and satisfaction (Karasek & Theorell, 1990).

A third assumption of Karasek's model is that jobs low in both demands and control, or “passive” jobs, are less satisfying to employees due to the lack of challenges and control. Such work conditions often lead to declines in work performance and overall activity, indicative of a “learned helplessness” response (Maier & Seligman, 1976). The final prediction of the D-CM is that high control in low demand jobs, or “low strain” jobs, protects against learned helplessness, but does not foster the high levels of productivity of “active” jobs (Karasek & Theorell, 1990). The majority of research on this model has focused on “active” and “high strain” work conditions because high demands are understood to be a “necessarily evil” of the workplace, representing the general state of affairs in most organizations. Therefore, the current study only investigates the influence of control in high demand contexts.

Limited empirical evidence has suggested that work performance and academic achievement are influenced by the demand-control interaction (Jimmieson & Terry, 1999). The majority of findings, however, indicate weak or mixed results for the benefits of control on task satisfaction, subjective task performance, and quantitative work output in demanding environments (Jimmieson & Terry, 1999; Parker et al., 2009). Interestingly, some research suggests that possessing control can negatively impact individuals in a variety of ways. Being afforded an overload of choices or unconstrained freedom can deplete regulatory resources (Vohs et al., 2008) and lead to raised expectations, missed opportunities, behavioral paralysis, and feelings of regret (Schwartz, 2009). Perhaps the relative awareness of these drawbacks leads some individuals to prefer less control than others.

Indeed, it appears that some individuals may not respond positively to high levels of control (van der Doef & Maes, 1999). In their revision of the D-CM, Karasek and Theorell (1990) emphasize the potential interactions between individual and situational factors. Much attention has since shifted to interactive models, such as Person-Environment Fit (Meier, Semmer, Elfering, & Jacobshagen, 2008; Parker et al., 2009), that can further clarify the relationship between work characteristics (e.g., task control), individual characteristics (e.g., desire for control), and work-related outcomes (e.g., task performance). Importantly, however, little to no research has examined work-related performance as a function of actual control of the environment and desired control of the individual. This will be necessary to better understand the interactional influence of control and desire for control and to convince organizational leaders that these factors are worth considering in practice.

Person-Environment Fit and Desire for Control

Person-Environment (P-E) Fit aims to maximize vocational success by matching individuals with suitable work environments (French & Kahn, 1962). Previous studies have combined the models of P-E Fit and Demand-Control in order to more clearly predict performance and stress outcomes (Parker et al., 2009; Schaubroeck, Jones, & Xie, 2001). Due to inconsistent findings regarding the Demand-Control interaction, researchers have investigated individual difference measures that could act as potential moderators of the link between job control and work performance.

One variable that has strong potential as a moderator of the control-performance link is desire for control. Burger and Cooper (1979) describe desire for control as a stable personality variable addressing an individual's generalized preferences for establishing control over the events of one's life. As such, desire for control is essentially the motivation to exert and establish control over one's circumstances (Burger, 1992). Desire for control has been associated with an array of important outcomes, including task performance, academic performance, and motivation to achieve (Burger, 1992; Gebhardt & Brosscot, 2002). In general, higher levels of desire for control predict more positive, beneficial outcomes (Burger, 1992; Parker et al., 2009). Some evidence suggests, however, that the benefits of high desire for control may depend on the given environmental characteristics, which aligns with P-E Fit theory (Shapiro, Schwartz, & Astin, 1996).

In work environments, employees with a high desire for control may enjoy high work control and use it to perform better, but employees with a low desire for control may perceive high work control as an overwhelming and unwanted threat, hindering their performance. Individuals with a low desire for control are likely to be more comfortable and higher performing when work control is limited. However, those with a higher desire for control may feel constrained and withdrawn, performing below their potential when work control is low. Desire for control, with its emphasis on psychological reactions to environmental control, is uniquely suited as a moderator of the work control-performance link.

Desire for control is traditionally studied as a trait or individual difference variable. However, one's desired level of control may also be a state that can be temporarily altered by prior events. Withholding one's freedom of choice seems to induce attempts to reestablish control over one's environment (Brehm, 1966). Further, individuals who are initially deprived of control over task outcomes may be motivated to regain control in subsequent tasks (Pittman & D'Agostino, 1989). Despite evidence for its potential malleability, the construct of desire for control has not been directly examined as a manipulated variable. Doing so would help us better understand the nature of desire for control and more rigorously demonstrate that it has a direct influence on the control-performance relationship. The current study is unique in this endeavor.

Match and Mismatch between Desire for Control and Work Control

The relationship between desire for control and work control can be described in terms of match and mismatch. The importance of match between desire for control and work control

in predicting workplace-relevant outcomes has been documented (Parker et al., 2009). Gaziell (1989) demonstrated that the positive effects of job control on motivation and satisfaction were only found in employees with a high desire for control. However, a high desire for control can potentially prove detrimental, depending on the environmental characteristics. Employees who prefer high control experience the most negative emotional reactions when entering low control environments (West & Rushton, 1989). These findings suggest that detrimental outcomes may be a product of mismatches between actual and desired levels of control.

With regard to performance outcomes, Parkes, Styles, & Broadbent (1990) found that speed and accuracy on a mail-sorting task suffered in cases of mismatch. However, the mail-sorting task did not test the complex thinking and decision-making necessary in many organizational settings. Also, desired control was measured as an individual difference variable rather than experimentally manipulated. Finally, work control consisted only of allowing participants to self-pace, which is only one of many facets of work control (Ganster, 1988). More recently, Parker et al. (2009) found that students reported the highest perceived task mastery when actual and desired control were both high.

However, Parker et al. (2009) only examined the effect of match and mismatch on students' subjective perceptions of task mastery (i.e., perceived goal attainment). Highlighted as a study limitation, using the outcome measure of affective task reactions did not lend evidence for the impact of fit on objective performance measures. Research has not yet examined the effect of match and mismatch on a valid indicator of organizationally-relevant task performance, measured against objective criteria. Understanding the influence of match and mismatch on objective work-related performance adds methodological rigor to the existing literature by reducing issues of common method bias found in previous studies. Equally important, objectively-measured performance more directly informs the practical significance of the research, which is critically important in persuading managers and supervisors to consider promoting conditions of match within the workplace. Thus, the current research attempts to clearly establish the link between work control, desire for control, and actual task performance in demanding work environments. Additionally, whereas researchers have traditionally measured desire for control as a dispositional trait, this study developed and implemented a novel manipulation of desire for control. The use of this manipulation enhances the internal validity of our findings and affords the opportunity to make causal inferences about the effect of desire for control on the control-performance link. Finally, it helps provide a better understanding of the potentially state-dependent nature of this construct.

Hypothesis

Evidence for P-E Fit models suggests that personal and workplace outcomes may be more determined by interactions between individual and environmental characteristics than by environmental characteristics alone, challenging the assumptions of the D-CM (Meier et al., 2008; Schaubroeck et al., 2001). Previous research indicates that performance in high control conditions is further benefitted by high desire for control. This finding is predicted here; however, the current study also explores the possibility that better performance will be

found in low control situations, as compared to high control situations, for those with low desires for control. Therefore, we hypothesize that:

H1: Those in “matched” conditions of task control and desire for control (high/high or low/low) will outperform those in “mismatched” conditions of task control and desire for control (high/low or low/high).

This hypothesis challenges the assumptions of the D-CM, that high levels of task control universally benefit task performance and that low levels of task control impair performance. This hypothesis also opposes the assumption that higher levels of desire for control are always more beneficial for performance than lower levels of desire for control. Although Parker et al. (2009) found a positive main effect for measured desire for control on subjective goal attainment, theory suggests that those with high desires for control will react negatively (i.e., frustration, learned helplessness) to low control conditions (Burger, 1992; West & Rushton, 1989). The current study extends beyond the previous literature by predicting that manipulated high desire for control will be detrimental to actual task performance when individuals are faced with low work control. The current research is also alone in hypothesizing that low work control conditions will lead to significantly better performance than high work control conditions, when desire for control is low.

Statistical Controls

Desire for control is expected to be uniquely relevant to understanding the work control-performance link in high demand environments. However other variables associated with desire for control have also been found to predict job performance. Therefore, these variables are measured and included as controls in all analyses.

Locus of control

Locus of control refers to the degree in which an individual believes that outcomes depend on personal actions (i.e., internal locus) rather than luck or fate (i.e., external locus). Locus of control has been shown to correlate positively ($r = .32$) with desire for control, but the two are viewed as distinct constructs (Gebhardt & Brosscot, 2002). Moreover, desire for control is likely a more relevant moderator of work control because it clearly predicts favorable reactions to certain levels of control and adverse reactions to others.

Self-efficacy

Self-efficacy represents a belief in personal ability to meet the demands of a particular situation. In work environments, self-efficacy refers to employees' perceptions of their ability to perform the job successfully (Jimmieson, 2000). Self-efficacy is also positively related ($r = .34$) to desire for control (Burger, 1992); however, self-efficacy is most aptly described in cognitive terms, whereas desire for control is most appropriately conceptualized in motivation terms (Bandura, 1977; Burger, 1992). Empirical evidence suggests that self-efficacy does not fully explain the role of personality in the demand-control interaction, citing desire for control as a potentially more influential moderator of the D-CM (Schaubroeck et al., 2001).

GPA

A known indicator of motivation and intelligence, high school grade point average (GPA) is assumed to predict task performance; therefore, GPA was controlled for in this study.

Improved Manipulation of Desire for Control

While desire for control is generally considered to be a relatively stable, individual difference variable, evidence suggests that desire for control can be influenced by prior events. Previous attempts to manipulate motivation to control exist, but they conflate desire for control with success or failure on a previous task. For example, by depriving participants of control in an initial task, Pittman and D'Agostino (1989) were able to successfully increase participants' efforts to process information in a subsequent memory task, presumably due to an enhanced motivation to exert control. However, initial control was deprived by giving inaccurate feedback so that participants would fail at the initial task. In other words, the deprivation of control relied upon participants being made to fail at a task. This manipulation of control conflates being denied control on a task with failing at that task. Unfortunately, prior research has demonstrated that failure at a task can impact a wide range of factors, not just subsequent desire for control (Maier & Seligman, 1976). Additionally, Pittman and D'Agostino (1989) did not investigate desired and actual control match and mismatch, nor did they examine work-related performance.

The current research improves upon the manipulation of Pittman and D'Agostino (1989) by offering a novel, more targeted manipulation of desire for control that does not use task success or failure to alter participants' subsequent motivations for control. Instead, this manipulation either denies or allows participants the ability to exert control over their own outcomes. In this way, the manipulation can increase or decrease momentary desire to control one's environment without inducing participants to succeed or fail at a task. Importantly, the current study further explores the potential state-dependent quality of desire for control. By demonstrating that desire for control can be temporarily affected by prior events, we can learn more about the nature of the overall construct.

Method

Participants

Participants consisted of 134 undergraduate students (71 female, 63 male; $M_{\text{age}} = 19.27$, $SD = 1.59$) enrolled at a large Midwestern university. Of these, 58.7% were Caucasian and 73.8% were freshmen. Mean scores were 3.04 (out of 4) for current GPA, 3.19 (out of 4) for high school GPA, and 21.59 (out of 36) for ACT. All participants received course credit for voluntarily participating in the experiment.

Procedure

Participants were assigned randomly into conditions of high or low desire for control and conditions of high or low actual task control. Immediately following a manipulation of desire for control, a task-specific measure of desire for control was administered as a manipulation check. Next, two work-based tasks (In-Basket and Class Scheduling task) were

administered, and participants were given 18 minutes to complete the two tasks. Participants then received items assessing perceptions of task demand and control, the General Perceived Self-Efficacy Scale, Locus of Control Scale, and a demographics questionnaire. A pilot test of this study indicated that responses to these individual difference measures did not differ based on whether they were administered before or after the two experimental tasks. Therefore, these measures were included last so as not to influence the effect of the manipulations.

Experimental Tasks

To account for common method variance, two experimental tasks—the In-Basket and Class Scheduling tasks—were used to simulate a work environment for participants. In an attempt to inspire best efforts on the tasks, participants were informed of fabricated high scores and encouraged to exceed those scores, if possible. Specifically, all participants were told that the highest score for the In-Basket task so far was a 72%, and that the highest score for the Class Scheduling task was two (out of three) correct class schedules. These tasks were used for several reasons. Both tasks provided an objective measure of performance, were perceived by undergraduate students as complex and demanding, and are considered to be organizationally relevant (Seijts & Latham, 2001; Szostek, 2008).

In-Basket task—The In-Basket task, created by Szostek (2008), posed a scenario in which participants imagined being a manager in the sales department of a mid-sized paper supply company. In this scenario, participants received a memo from their supervisor regarding a recent increase in departmental absenteeism and tardiness. Participants were informed about the absenteeism rates (e.g., 10 employees calling in sick this month for full eight-hour shifts), tardiness rates (e.g., 20 late arrivals this month, averaging 30 minutes late), and the relative costs of paying overtime to those who cover for absent employees (e.g., time-and-a-half, assuming a base pay of \$20). As one component of the task, participants were told that the Executive Advisory Committee needed to know the total overtime costs within their department in the past month due to 1) absenteeism and 2) tardiness, based on the information provided in the memo. The task required participants to read and comprehend the full script, recognize the relevant statistics (e.g., numbers of late arrivals, base hourly rate), disregard unnecessary information (e.g., historical data regarding costs associated with absenteeism), and make appropriate calculations involving the relevant statistics. Scores were based on participants accurately documenting the relevant statistics and making correct calculations (e.g., accurate amount of overtime costs due to late arrivals). The task allowed for participants to provide up to 11 accurate figures for a total of 11 possible points.

Class Scheduling task—The Class Scheduling task, used by Winters and Latham (1996), posed a situation in which students were to complete unique, non-redundant class schedules for college coursework in a limited amount of time and in accordance with a set of six rule-based criteria and two supplemental, facilitative statements. The six criteria included: 1) each schedule must indicate the course names, codes, meeting times, and sections; 2) each schedule must include five unique classes on the same day; 3) each schedule must be unique; 4) class times must not conflict; 5) any scheduled lecture class with a related discussion or lab section must have the discussion or lab session scheduled as

well; and 6) no two Engineering courses can be scheduled within one hour of each other. The two supplemental statements included: 1) if a class is available Monday, Wednesday, and Friday, it is acceptable to schedule it for Wednesday only, for example; and 2) lecture classes and discussion or lab sections count as separate classes. The task instructions contained a list of 15 courses, each with 10 possible sections, and blank schedules for which to arrange the classes. Class Scheduling scores were calculated on a 3-point scale, with one point awarded for each correct schedule completed.

Manipulations

Desire for control—To begin the experiment, participants' desire for control was manipulated. Participants in both the high and low desire for control conditions first expressed their preferences by choosing four tasks they wished to receive. Tasks were presented such that participants needed to make four separate decisions, with each decision being between a pair of novel, unique tasks. For each decision, participants were asked to choose between a popular task (favored by ~70% of people) and an unpopular task (favored by ~30% of people). For simplicity, participants were not given information about the content of the tasks, as it may have confounded interpretations of task choice. Instead, participants were simply shown the varying task ratings of previous participants (e.g., Task 3A favored by 73% of prior participants OR Task 3B favored by 27% of prior participants) for each choice they made.

The researcher informed all participants that an attempt would be made to provide them with the tasks of their choice, but that based on the demands of others, they might not receive the tasks of their choice. All participants then received the same four brief anagram tasks. Along with the tasks, feedback was given explaining whether or not the tasks aligned with their preferences for tasks. Despite everyone receiving the same tasks, those in the high desire for control condition were informed that they had not received any of their preferred tasks, whereas those in the low desire for control condition were informed that they had received all of their preferred tasks.

The manipulation of “high” desire for control was based on prior manipulations of control motivation in which depriving participants of control in an experimental task led to heightened motivation to establish control in subsequent tasks (Pittman & D'Agostino, 1989). Work by Brehm (1966) on psychological reactance, which theorizes that individuals are motivated to reestablish control after being deprived the freedom of choice, provides further support for the manipulation. Thus, depriving autonomy and control in a preliminary manipulation task was expected to raise participants' desire for control. The rationale for the “low” desire for control manipulation was that by providing participants their choices in a preliminary set of tasks, their desire to exert and establish control would be “satiated”, momentarily decreasing their desire for control.

Task control—Subsequently, actual task control was manipulated in accordance with manipulations put forth by Ganster (1988) and used in other experiments involving the D-CM (Jackson, Wall, Martin, & Davids, 1993; Parker et al., 2009). These manipulations were comprised of five characteristics of behavioral control shown to cultivate active participation

and autonomy in participants engaging in an experimental task. The key facets manipulated were task control, method control, work pacing control, work scheduling control, and environmental control. This manipulation was applied consistently for the two experimental tasks.

Those in the high actual task control condition were allowed to choose the order in which they completed the In-Basket and Class Scheduling tasks (high task control), were given the freedom to work on items in the order of their choice (high method control), were responsible for pacing themselves through the tasks (high work pacing control), could take rest breaks when necessary (high work scheduling control), and were allowed to move around the room as desired (high environmental control). Participants in the low task control condition, on the other hand, were instructed to complete the two tasks in a specified order (low task control), to work on all items in order (low method control), when to move on to the next task (low work pacing control), to continue working on the tasks for the entire allocated time (low work scheduling control), and to remain in their seats and utilize only their space during the tasks (low environmental control). To mitigate the possibility of order effects, the order in which tasks were completed was counterbalanced in the low control condition. This was not possible in the high control condition as participants had control over the order in which they completed tasks.

Measures

Two items were used to assess perceptions of task demand for the In-Basket and Class Scheduling tasks. The measure was based on items from Parker et al. (2009) and included the items “I felt under pressure throughout the tasks” and “Completing the tasks in the given amount of time was difficult.” Two items were also used as a manipulation check for actual task control. In line with Parker et al. (2009), this measure included the items “I was given control over my actions during these tasks” and “I felt as if many decisions were made for me during these tasks.”

A four-item measure of task-specific desire for control was used as a manipulation check. This measure was based on items from Burger and Cooper's (1979) Desirability of Control (DC) scale, but focused on participants' control preferences within the context of the upcoming performance tasks. The measure consisted of statements such as “I enjoy taking control of the situation when I'm involved in a new and challenging task” and “I'd rather be in charge of a high-pressure, problem-solving task and make my own mistakes than follow someone else's directions.” An internal consistency of 0.67 was found for this measure.

The General Perceived Self-Efficacy Scale (GSE) was used to measure the personality variable of self-efficacy. The 10-item scale was developed by Jerusalem and Schwarzer (1992), and a Cronbach alpha of 0.86 was found. Locus of control was measured using Rotter's (1966) truncated 13-item Locus of Control Scale, and a Cronbach alpha of 0.46 was found. Finally, a demographics measure was administered, including a measure of self-reported high school GPA.

Results

Preliminary Analyses

An initial MANOVA analysis using the independent variables to predict the In-Basket and Class Scheduling task scores showed no significant within-subject effect for these two performance measures, Wilks' $\lambda = 1.00$, $F(1, 130) = .039$, $p = .84$. Therefore, the In-Basket and Class Scheduling tasks were converted to z-scores and averaged into a combined performance measure.

We predicted that actual task control would interact with participants' manipulated desire for control. First, a manipulation check was conducted regarding the desire for control manipulation created for this study. A one-way analysis of covariance (ANCOVA), including the covariates of self-efficacy and locus of control, was used to determine the effect of the manipulation on subsequent desire for task control. As predicted, those in the high desire for control condition ($M = .12$) reported higher subsequent desire for task control than those in the low desire for control condition ($M = -.18$), $F(1, 145) = 4.10$, $p = .04$. Therefore, the novel manipulation was effective in determining participants' desires for control in a subsequent performance task. Importantly, those in the high desire for control condition ($M = -.08$) did not report higher subsequent self-efficacy than those in the low desire for control condition ($M = .10$), $F(1, 130) = 1.20$, $p = .28$. Additionally, those in the high desire for control condition ($M = -.18$) actually reported lower subsequent internal locus of control than those in the low desire for control condition ($M = .28$), $F(1, 130) = 7.20$, $p = .01$, indicating that the effect of the manipulation on desire for control and locus of control were opposite each other. This demonstrates that the manipulation of desire for control effectively influenced subsequent desire for control without similarly affecting self-efficacy and locus of control.

Analyses were also conducted to ensure that the tasks were perceived as demanding and that the actual control manipulation was effective. Regarding the demanding nature of the tasks, participants reported a mean score of 3.93 (on a 5-point scale), indicating that the tasks were adequately difficult and cognitively demanding. In one-way ANOVAs, perceived demand of the tasks did not differ by actual control manipulation, $F(1, 124) = 1.37$, $p = .244$, nor by desire for control manipulation, $F(1, 123) = 0.94$, $p = .333$. Regarding the actual control manipulation on control perceptions, a one-way ANOVA indicated that participants in the high actual control condition ($M = .24$) reported higher perceptions of control during the experimental tasks than those in the low actual control condition ($M = -.14$), $F(1, 125) = 4.55$, $p = .04$. Therefore, the actual control manipulation, in addition to the desire for control manipulation, had significant effects in the expected direction.

Testing Hypotheses

To test our hypotheses, a 2×2 analysis of covariance (ANCOVA) including actual control, desire for control, self-efficacy, locus of control, and high school GPA was used to predict task performance. It should be noted that international student status was also coded for, and that prior to analyses, the decision was made to exclude five international student participants who were unable to understand directions throughout the experiment. Prior to

testing the interaction effect of actual control and desire for control, interaction terms for actual control by self-efficacy and actual control by locus of control were tested for their effects on performance to determine whether or not they should be included in the final model. Included with the other variables in the model, the covariate-factor interaction terms for self-efficacy, $F(1, 125) = 0.07, p = .78$, and locus of control, $F(1, 125) = 2.35, p = .13$, did not have a significant effect on task performance. Per Engqvist (2005), the final model did not include the non-significant covariate-factor interaction terms, but retained the covariates themselves.

Table 1 displays the omnibus ANCOVA test, demonstrating that there was a significant interaction of actual control and desire for control, as predicted. Importantly, the main effects of actual and desired control conditions were non-significant. This indicates there was no overall performance benefit of either high actual control or high desire for control. Instead, performance was determined by the interaction of actual and desired control. Hypothesis 1, which predicted that participants in matched conditions of actual control and desire for control would outperform participants in mismatched conditions, was supported. Figure 1 demonstrates that in cases of match between actual and desired control, performance benefitted. However, in cases of mismatch between actual and desired control, performance suffered.

Cell mean differences, depicted in Figure 1, were also tested in an attempt to examine specific relationships between actual control and desire for control. In line with previous research, we found that in high task control conditions, those with high desires for control (Match; $M = .28$) performed better than those with low desires for control (Mismatch; $M = -.13$), $F(1, 127) = 3.88, p = .05, d = 0.35$. However, extending beyond previous research, we found that in low task control conditions, those with low desires for control (Match; $M = .34$) performed better than those with high desires for control (Mismatch; $M = -.15$), $F(1, 127) = 6.23, p = .01, d = 0.44$. Together, these results indicate that task control moderates the influence of desire for control on work performance and that matches between desire for control and task control lead to better performance, even when desire for control is low.

Confirming previous research, cell mean differences also indicated that those with high desires for control performed better in high task control conditions (Match; $M = .28$) than low task control conditions (Mismatch; $M = -.15$), $F(1, 127) = 4.68, p = .03, d = 0.39$. However, extending beyond previous research, our prediction that participants would perform better in low task control conditions (Match; $M = .34$) than high task control conditions (Mismatch; $M = -.13$) when desire for control was low, was also supported, $F(1, 127) = 5.45, p = .02, d = 0.41$. Together, the results suggest that desire for control moderates the influence of task control on work performance and that matches between task control and desire for control lead to better performance, even when task control is low.

The current results illustrate the interactive effects of actual control and desire for control, with regard to task performance. The findings indicate that conditions of match between actual task control and desire for control lead to better performance than conditions of mismatch. In doing so, they specify a pure crossover interaction with no main effects of actual task control nor desire for control.

Discussion

The present study explores the relatively untapped notion of treating desire for control as partially a state-dependent variable that can be, at least temporarily, manipulated. Prior research (Brehm, 1966; Pittman & D'Agostino, 1989) was used to help create the desire for control manipulation used in this study. However, while the previous manipulation conflated task success and failure with desire for control, the current research effectively altered subsequent desire for control by simply depriving, or providing, control in an initial task, thereby providing a purer manipulation of desire for control. Also, while previous research has primarily focused on measuring desire for control, our study lends support for using experimental manipulations of this construct to help rule out alternate explanations of findings. The current research also suggests that desire for control, while often assumed to be a stable trait, can be temporarily influenced by prior levels of personal control or freedom. Finally, it appears that desire for control interacts with actual task control to predict task performance, even after accounting for self-efficacy and locus of control.

In all cases, performance was above average when the desire for control condition matched participants' control of the tasks, and was below average when the desire for control condition did not match task control. This finding may suggest a benefit of assigning individuals with high desires for control to tasks and work settings that afford a high level of control. These individuals may feel a sense of challenge in satisfying their need for autonomy, leading to higher performance and better problem-solving. Those with low desires for control may feel threatened and unable to cope with the freedoms and responsibility of high control work environments, which may inhibit their ability to perform well.

For low control work environments, it seems that those with low desires for control are a better fit for the task. When a demanding task does not allow for much autonomy or decision-making, the performance of those with a strong desire for control may suffer due to task-related frustration. However, those who do not require or prefer much control over a task may feel more comfortable and perform better in these low control settings.

The current research also supports the notion that low control work environments may actually facilitate better performance than high control environments, for those with low desire for control. This prediction lends further support for P-E Fit models suggesting that high control conditions should not be implemented across the board without first considering employees' levels of desire for control. This challenges a substantial amount of research suggesting that high work control universally leads to more positive work outcomes than low control environments.

One might wonder whether brief provisions or removals of control in the workplace could be utilized to either satiate or motivate desires for change within employees. The duration of effect from such brief interventions is uncertain, but it is unlikely that cases of misfit between work control and desire for control can be sustainably alleviated with sporadic changes to an employee's work environment. Further, implemented strategies that only superficially address the mismatch may not be effective either. For instance, an employee

who desires higher-level responsibilities and enhanced autonomy over work assignments may not respond positively to unrelated affordances of control, such as flexibility with when to take a lunch break. Instead, interventions more likely to succeed are those that provide reasonably sustained measures of change and that are tailored to employees' most salient desires regarding work control.

Relatedly, the current manipulation was not intended to provide a model for how to successfully implement brief interventions to influence desire for control at work. Instead, it was primarily intended to isolate and identify key factors of task performance and to demonstrate the potential malleability of the desire for control construct. One might wonder if the manipulated desire for control we study here is substantively different from the individual difference desire for control variable studied in previous research. However, our desire for control manipulation check—which derived from the trait desire for control measure—was responsive to the desire for control manipulation, suggesting that the state-related variable was highly related to the trait construct. Most likely, individuals naturally possess varying levels of dispositional desire for control that can be temporarily enhanced or subdued. We acknowledge that trait desire for control will likely be more relevant and influential within real work settings. However, the current design, relative to studies that simply measure trait desire for control, provides stronger evidence for a causal interaction between desire for control and task control on performance.

A couple of limitations restrict the confidence in these findings. First, the reliability of the locus of control measure ($\alpha = 0.46$) was quite low. This is in contrast to previous reports of internal consistency for this scale, which are typically 0.70 or greater (Cherlin & Bourque, 1974; Rotter, 1966). There is also research to suggest that perceived self-efficacy is highly contextual and domain-specific (e.g., Bandura, 1997) and, thus, generalized measures should be used with caution. Admittedly, a task-specific self-efficacy measure may have been a more appropriate way to explore self-efficacy in this context. Additionally, the experimental tasks used, while demonstrated to be complex and realistic, were conducted in an academic setting, and therefore may not have the same effect on participants as actual tasks administered in a true work setting. The experimental tasks may not have been perceived as important or meaningful enough to imitate true workplace situations, which may limit the external validity of the findings.

However, as Mook (1983) asserts, a lack of external validity should not invalidate the benefit of a study or the utility of its research design. The current research was successful in demonstrating that desire for control—while most commonly conceptualized as a stable, individual difference variable—can be temporarily altered, suggesting that there may be a state-dependent quality within the desire for control construct. This study also establishes that, although actual control is generally considered to positively influence work performance, this benefit of control may be dependent on congruence with an individual's desire for control under certain circumstances.

Regardless, future research would likely benefit from utilizing work-related tasks within actual workplace settings. Similar research on employees that uses tasks occurring more naturally within the workplace would expand upon the current study by introducing a new

demographic, new environment, and tasks that are likely to be perceived as more consequential and meaningful. Still, the findings presented here suggest that a fit between environmental work conditions and personal preferences may determine work performance better than either environmental or personal factors can do alone.

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Figure 1.
Bar graph illustrating the effects of high and low desire for control on those with high and low actual control, with respect to task performance.

Table 1
Two-Way Analysis of Covariance Testing Effects on Performance

Variable	Sum of Squares	Df	Mean Square	F	p
Self-efficacy	0.321	1	0.321	0.477	.491
Locus of Control	0.945	1	0.945	1.405	.238
High School GPA	1.714	1	1.714	2.546	.113
DFC	0.049	1	0.049	0.072	.788
Task Control	0.014	1	0.014	0.021	.884
DFC*Task Control	6.816	1	6.816	10.128	.002
Error	85.465	127	.673	---	---

Note. DFC (0 = Low DFC; 1 = High DFC); Task Control (0 = Low Control; 1 = High Control).