It's About Time (for the Next Task):

Time Available and Next Task Valence Interact to Explain Velocity's Influence on Affect

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

Over the course of a typical day, employees often face a seemingly never-ending sequence of goals. Given the omnipresence and importance of goals in the workplace, a keen understanding of the goal pursuit process is necessary. Along those lines, several studies have shown that during goal pursuit, individuals' affective experiences are influenced by their *velocity*—their *rate* or goal progress *over time*. Specifically, experiments demonstrate that fast velocities lead to more positive affect and less negative affect compared to slow velocities. However, most of the research on velocity to date has focused on the pursuit of one goal in isolation where attainment is uncertain. In contrast, we know little about *why* and *when* velocity influences affect in contexts more representative of the typical workday – where people sequentially complete numerous goals for which attainment is more or less certain. To address this limitation, we proposed and tested a stage 2 moderated mediation model where (1) velocity is positively related to the amount *perceived time available* for the next task, and (2) perceived time available interacts with the *valence* of the next task to influence affect. More precisely, we predicted that via perceived time available, velocity would influence affect to a greater extent when the next task is expected to be *pleasant* than when it is expected to be *unpleasant*. In an online experiment (N = 145), we tested our propositions and found support regarding positive affect, but not negative affect. Our study contributes to the motivation literature by explaining in part how affect arises as people pursue goals.

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Introduction

Goals are ubiquitous in the workplace. Indeed, individuals' career outcomes are often contingent on the achievement of key performance goals, such as becoming a partner or getting tenure. Moreover, beyond such performance goals, employees must accomplish a large number of seemingly mundane goals on a day-to-day basis, such as responding to emails, meeting clients, completing paperwork, and writing reports. Thus, given the omnipresence and importance of goals at work, a thorough understanding of the goal pursuit *process* is necessary. Along those lines, psychological control theories (e.g., Carver & Scheier, 1998) propose that during goal pursuit individuals pay close attention to *distance*—the amount of goal progress needed to achieve a goal. Importantly, because goals are defined as "internal representations of desired states" (Austin & Vancouver, 1996, p. 122), control theories argue that people are inherently motivated to reduce distance. One way to reduce distance is to enact behaviours to bring oneself closer to the goal (e.g., Lord & Hanges, 1987). For example, to close the distance between the number of *currently* published articles (e.g., 5) and the *goal* number of published articles (e.g., 10), a professor might opt to conduct more studies.

Importantly, goals are not achieved instantaneously; people pursue goals *over time*. Thus, in the aforementioned examples, professors pursue their goal of getting tenure over the first few years of their careers, as do consultants whose goal is to become partners. Similarly, completing paperwork and writing reports are goals that are completed over a period of several hours or days. Even seemingly mundane goals, such as responding to email, can take up to several minutes. Thus, given the temporal nature of goal pursuit, numerous scholars have argued that *velocity*, defined as the *rate* of goal progress, also represents a central aspect of goal pursuit (Carver & Scheier, 1998; Hsee & Abelson, 1991; Johnson, Howe, & Chang, 2013).

Most notably, Carver and Scheier (1990, 1998) proposed that velocity is a key determinant of people's affective experiences as they pursue goals. Specifically, they argued that affect partly results from a process where individuals compare their *current* velocity with a *reference value*, which is broadly defined as an acceptable rate of goal progress (Carver & Scheier, 1998). Thus, people experience *fast* velocity when their velocity is *above* their reference value, and experience *slow* velocity when their velocity is *below* their reference value. Importantly, Carver and Scheier argued that individuals experience positive affect when velocity is *fast* and negative affect when velocity is *slow*. In support of Carver and Scheier's theorizing, a growing body of evidence indicates that, indeed, fast velocities lead to more positive affect and less negative affect relative to slow velocities—even when distance is accounted for (for a review, see Johnson et al., 2013). Taken together, these findings indicate that velocity likely plays an important and unique role in employees' affective experiences. Downstream, velocity may have key workplace implications via its influence on affect. For example, affect has been linked with persistence (Cheng & Wang, 2015; Chang, Johnson, & Lord, 2010), goal revision (Richard & Diefendorff, 2011), and contextual performance (Dalal, 2005).

Although the velocity literature to date provides insights on the process of goal pursuit, a number of key gaps remain. First, a great deal of theorizing and empirical investigations regarding velocity have emphasized the role of expectancy (e.g., Carver & Scheier, 1998; Chang et al., 2010; Johnson et al., 2013), which is defined as a person's perceived likelihood of meeting a goal (Vroom, 1964). Although this focus is appropriate when expectancies are uncertain (e.g., due to stringent deadlines), such goals do not represent the full range of the goals employees typically encounter on the job. Rather, several workplace goals are highly time consuming but not necessarily difficult (i.e., goal attainment is relatively certain), such as completing paperwork, purchasing materials, or attending meetings. Second, although the typical workday is characterized by the sequential pursuit of numerous goals (Mark, Gonzalez, & Harris, 2005; Perlow, 1999), the velocity literature has primarily emphasized the pursuit of one goal in isolation. Thus, we aim to extend the velocity literature by specifically examining *why* and *when* velocity influences affect in a context which more closely represents the *typical* workday: one where individuals sequentially pursue goals for which goal attainment is relatively certain.

Importantly, the pursuit of numerous goals in sequence often requires more of a person's scarce resources (e.g., time, effort, attention) than the pursuit of a single isolated goal. As such, we borrowed from the conservation of resources theory (Hobfoll, 1989) to explain the relationship between velocity and affect. Specifically, we hypothesize that velocity on an *initial* task will be positively related to individuals' *perceived time available* for the *next task*. In turn, because time is perceived as a valuable resource (Bergeron, Shipp, Rosen, & Furst, 2012; Hockey, 1997; Kanfer & Ackerman, 1989), we hypothesize that increased perceived time available will be linked with increased positive affect and decreased negative affect. However, some tasks are considered more valuable or desirable than others, meaning that the value of having an abundance of time for the next task likely depends on the nature of that next task. Thus, we also propose that the relationship between perceived time available and affect is moderated by the valence of Task B, such that the relationship will be stronger if Task B is expected to be *pleasant* than if Task B is expected to be *unpleasant*. Our proposed model is illustrated in Figure 1.

In the following sections, we review the velocity literature and outline our specific hypotheses. Next, we describe a study in which we tested our hypotheses by experimentally manipulating velocity and the valence of Task B. Finally, we present the results of our study and discuss their implications.

The Affective Correlates of Velocity

As we previously mentioned, individuals pay attention to the *distance* between their current states and their goals, but are also influenced by information regarding their *velocity*—their rate of goal progress *over time*. Namely, in the velocity literature, the relationship between velocity and affect has received a great deal of attention. In particular, Carver and Scheier (1998) proposed that velocity is a key antecedent of affect, which they broadly define as “a sense of positiveness or negativeness” (p.122). This broad conceptualization of affect is consistent with that of some emotion scholars, who view affect as an umbrella term encompassing a wide variety of valenced states such as emotions and moods (e.g., Gross, 1998). Thus, much of the theorizing and research on velocity have referred to terms such as “satisfaction vs. dissatisfaction” or “preference” as being somewhat synonymous with affect.

To our knowledge, all of the studies conducted on the link between velocity and affect have supported Carver and Scheier’s (1998) theorizing (see Johnson et al., 2013, for a review). For instance, Hsee and Abelson (1991) found across two laboratory studies that individuals preferred obtaining positive outcomes rapidly rather than slowly (e.g., $40 gained over 2 hours vs. $40 gained over 4 hours). Likewise, Lawrence et al. (2002) experimentally manipulated velocity via feedback and found that fast velocities were associated with more positive affect (vs. negative affect) than slow velocities. Similarly, in an experience sampling study, Wilt, Bleidorn, and Revelle (2016) found that individuals tended to report increased positive affect and decreased negative affect when experiencing faster velocities towards various personal and academic goals.

More importantly, the relationship between velocity and affect seems to hold even when accounting for distance. For instance, Elicker et al. (2009) found that students reporting faster velocity towards an academic goal also tended to report being more satisfied with their academic performance five weeks later, even when actual academic performance was taken into account. Similarly, Chang, Johnson, and Lord (2010, study 1) found that individuals reporting a *faster rate* of improvement (i.e., velocity) regarding their job characteristics (pay, challenge, and interpersonal interactions) also tended to report greater satisfaction with these same job characteristics, even when distance was held constant. In sum, recent evidence indicates that velocity influences affect above and beyond distance, and thus, that velocity plays a unique and key role in individuals' affective experiences during goal pursuit.

The relationship between velocity and affect is important because via its influence on employees' affective experiences, velocity may have important implications for employee motivation. For example, Cheng and Wang (2015) found that the experience of amusement led to increased persistence on a laboratory task, whereas Chang et al. (2010) found that satisfaction with performance on a laboratory task was positively related to goal commitment and persistence on that task. In addition, Richard and Diefendorff (2011) found that positive affect was linked with upwards goal revision whereas negative affect was linked with downwards goal revision. Moreover, employees' affective experiences have also been linked with their contextual performance. Namely, meta-analytic evidence (Dalal, 2005) indicates that positive affect is positively related to organizational citizenship behaviours (OCB) and negatively related to counterproductive work behaviours (CWB), and that negative affect was positively related to CWBs. Given the importance of both velocity and affect in the workplace, understanding how the two relate to each other is essential.

Bringing Velocity Research Closer to the Workday

To date, much of the theory on velocity has emphasized the role of *expectancy* (e.g., Carver & Scheier, 1998; Johnson et al., 2013), which is defined as a person's *perceived* likelihood of achieving a goal (Vroom, 1964). Consequently, empirical studies conducted on velocity have mainly focused on goals for which expectancies are uncertain (e.g., Chang et al., 2010; Elicker et al., 2009), for example, due to stringent deadlines. However, although such goals are undoubtedly important, we argue that they do not fully represent the large range of goals employees typically encounter on the job. Indeed, for several workplace goals, people are more concerned with *when* they will achieve their goal than *whether* they can achieve it. In support of this idea, Huang and Zhang (2011) found in a series of experiments that people are primarily concerned with *whether* they can achieve a goal, but only in *early* stages of goal pursuit. On the other hand, in *late* stages of goal pursuit people are instead more concerned with *when* their goal will be met. Put into a concrete example, office workers are likely less concerned with whether they *can* respond to emails than with *when* they will finish responding to the said emails. Furthermore, although deadlines are common in many occupations, they can often be extended when the goals are not expected to be met "on time".

In addition, the empirical studies on velocity to date have primarily focused on situations where *one* goal is being pursued *in isolation.* This is surprising because in their theorizing, Carver and Scheier (1998) specifically emphasized that people often have more than one goal to accomplish via a limited pool of resources (e.g., effort, time, attention). Furthermore, in the workplace, pursuing one goal *in isolation* is rather uncommon; instead, people tend to have several goals to accomplish in a typical workday (Mark, Gonzalez, & Harris, 2005; Perlow, 1999). More precisely, a typical workday often involves completing numerous *goals* in sequence

(Mark et al., 2005; Perlow, 1999), such as responding to emails, meeting clients, and writing reports. Furthermore, for many individuals "work" does not end after the work day. After work, employees must typically complete a long sequence of non-work goals such as cooking dinner, completing household chores, and reading bedtime stories to their children. Importantly, completing such a long sequence of goals requires a great deal of scarce but valuable resources, namely time. Thus, one of our aims is to extend the velocity literature by explicitly considering how velocity influences the amount of time available individuals perceive having to complete their numerous sequential goals.

More Speed Means More Time for the Next Task

In particular, we argue that in situations where individuals must complete several goals in sequence, they will be attuned to the amount of resources (i.e., time) available for these goals. Thus, we propose that fast or slow velocity on a given task influences affect by indicating an abundance or a scarcity of time (respectively) for the *next* task. Specifically, to explain velocity's influence on affect, we borrowed from the conservation of resources theory (Hobfoll, 1989), which stipulates that individuals strive to obtain and conserve resources, which are broadly defined as *objects*, *energies*, and *personal characteristics* that help individuals achieve their goals (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). We argue that in a context where people complete multiple tasks in sequence, velocity on an *initial* task (hereafter labeled "Task A") will be positively related to a very specific resource—individuals' *perceived time available* (PTA) for a *subsequent* task (hereafter labeled "Task B"). Because velocity is defined as the amount of *goal progress over time*, fast velocity relative to slow velocity is mathematically expressed via (1) more goal progress made over the same period of time, or (2) the same amount of goal progress being made over a shorter period of time. Thus, a person experiencing fast velocity will take less time to make the same amount of goal progress as a person experiencing slow velocity, resulting in more time available for a subsequent task.

Hypothesis 1: Velocity will be positively associated with PTA.

Note that our hypothesis refers to *perceived* time available rather than *objective* time available. That is because although individuals may perceive the same objective velocity, fluctuations in individuals' affective experiences are theorized to be caused not by any objective velocity, but by deviations in velocity *relative to a reference value* (Carver & Scheier, 1998), which varies from person to person. Thus, the same objective velocity can be *perceived* as fast for one person (i.e., above the reference value) but be perceived as *slow* for another (i.e., below the reference value). Similarly, although different individuals may experience the same *objective* amount of time available as a result of the same objective velocity, their *perceived* time available may differ, and as a result, so may their affective experiences. This means that what one employee perceives as an *abundance* of time available may be perceived as a *paucity* for another. In turn, because time is perceived as a valuable resource (e.g., Bergeron et al., 2012; Hockey, 1997; Kanfer & Ackerman, 1989), we argue that more PTA should be associated with more positive affect and less negative affect.

Hypothesis 2a: PTA will be positively associated with positive affect.

Hypothesis 2b: PTA will be negatively associated with negative affect.

However, perceiving more time for a subsequent task may not invariably result in more positive affect and less negative affect. Indeed, according to the COR theory, the value of a resource can vary based on contextual factors (Hobfoll, 1989; Halbesleben et al., 2014). For example, paper money is far more valuable in a modern human society than on a deserted island. In line with this idea, we argue that the amount of time to be spent on Task B will be perceived as more valuable when Task B is expected to be pleasant than when it is expected to be unpleasant. Specifically, if Task B is expected to be *pleasant*, we argue that a person should value and will want to maximize the amount of time to be spent on Task B. As a result, the perceived amount of time available for Task B should greatly contribute to a person's experience of both positive and negative affect. Conversely, when Task B is unpleasant, a person will not greatly value and will not care to maximize the amount of time to be spent on Task B. That said, we do not expect an abundance of perceived time available to result in *decreased* positive affect and *increased* negative affect when Task B is unpleasant. Rather, because work tasks are often unpleasant (Fisher, 1993), we argue that when Task B is unpleasant, a person should instead be relatively insensitive to the amount of time he or she has available for Task B. In sum, we hypothesize that the relationship between PTA and affect will be moderated by the *valence of Task B,* such that the relationship will be stronger when Task B is expected to be *pleasant* than when Task B is expected to be *unpleasant*.

> *Hypothesis 3a*: There will be a significant *PTA* × *Task B valence* interaction on *positive* affect. Specifically, the positive relationship between PTA and positive affect will be stronger when Task B is expected to be *pleasant* than when Task B is expected to be *unpleasant*.

> *Hypothesis 3b*: There will be a significant *PTA* × *Task B valence* interaction on *negative* affect. Specifically, the negative relationship between PTA and negative affect will be stronger when Task B is expected to be *pleasant* than when Task B is expected to be *unpleasant*.

Taken together, we proposed a stage 2 moderated mediation model (see Figure 1) where velocity influences affect via PTA, and where the indirect effect of velocity on affect is stronger when Task B is expected to be pleasant than when Task B is expected to be unpleasant (Hypotheses 4a and 4b).

> *Hypothesis 4a*: There will be a significant positive indirect effect of *velocity* on *positive affect* via *PTA*, moderated by *Task B valence.* Specifically, the indirect

effect will be stronger when Task B is expected to be pleasant than when Task B is expected to be unpleasant.

Hypothesis 4b: There will be a significant negative indirect effect of *velocity* on *negative affect* via *PTA,* moderated by *Task B valence.* Specifically, the indirect effect will be stronger when Task B is expected to be pleasant than when Task B is expected to be unpleasant.

Method

Participants

Participants were 175 undergraduate students who received course credit for their participation. We excluded 14 participants who, due to technical difficulties, provided us with unusable data. In addition, because the study was designed to be completed in approximately 45 minutes, 14 participants were excluded for completing the study in under 15 minutes[1] because we suspected they were not engaged with the experimental task. In addition, we excluded participants who did not complete the positive and negative affect measures (n = 2). Thus, our analyses are based on a final sample of 145 participants (43% male), with a mean age of 20.16 years (SD = 2.24). Most participants identified themselves as White (n = 59) or Asian (n = 33), and 47 participants identified themselves as members of other ethnic groups (6 did not report their ethnicity).

Procedure

The procedure for the study is depicted in Figure 2. The study was conducted online using a 2 (*Task A velocity*: fast vs. slow) × 2 (*Task B valence*: pleasant vs. unpleasant) between-subjects experimental design in which participants were randomly assigned to conditions. Participants completed the study via a link provided by their university's subject pool and could complete the study at their leisure on a desktop or laptop computer (participants were not able to complete the study on smartphones or tablets). After providing informed consent, participants completed a baseline measure of positive and negative affect. We measured participants' baseline positive and negative affect to statistically control for them in our analyses (more details are provided in the results section). Then, participants were informed that they would complete

[1] We also tested our hypotheses when using other values (e.g., 8 minutes) as a cut-off. Changing the cut-off value did not substantively affect the pattern nor the interpretation of our results.

two tasks throughout the experiment: (1) the *Contract Task* (i.e., Task A), followed by (2) the *Hiring Task* (i.e., Task B). A detailed description of both tasks is presented in the next section. Afterwards, participants were taught how to perform Task A via a web tutorial, were provided with a brief description of Task B, and were exposed to the *valence manipulation*.

Following the valence manipulation, participants were explicitly told that the amount of time they would spend on *both* Task A and Task B would add up to a total of 20 minutes. Thus, participants could spend as little or as much time as they wanted on Task A (up to 20 minutes), but that after completing Task A, participants would spend *the remainder* of the 20-minute period on Task B. To ensure participants understood this aspect of the experiment, they were provided with a specific example (shown in Figure 3).

Participants then completed Task A. Consistent with previous velocity research (Chang et al., 2010; Huang & Zhang, 2011; Lawrence, Carver, & Scheier, 2002), we manipulated velocity *while* participants were completing Task A. Thus, Task A was split into two trials, and participants were exposed to the velocity manipulation in-between the two trials. After the velocity manipulation, participants completed a measure of *PTA*, followed by measures of *positive affect* and *negative affect*. Then, participants completed the remainder of Task A, completed Task B (which was a filler task), and reported their demographic characteristics (age, gender, and ethnicity).

Experimental Tasks

Task A. The object of Task A was to examine the job performance data of 20 fictitious truck drivers (e.g., distance traveled during the year) to determine how much salary each driver should be offered on his or her next contract. To determine the correct salary to offer each driver, participants needed to retrieve four pieces of information regarding the driver's performance (e.g., distance driven). To ensure participants understood the object of Task A and how to perform it, participants completed a two knowledge check questions as well as a *practice trial* of Task A.

Task B. The object of Task B was to evaluate 100 job applicants on a scale ranging from 0 (“very poor”) to 100 (“very good”). Each applicant profile included the following information: (1) years of education, (2) years of job experience, and (3) performance on the job interview. Given that Task B was a filler task, there was no “correct” or “incorrect” answer for each applicant to be evaluated.

Experimental Manipulations

Velocity manipulation. We manipulated velocity by providing participants feedback regarding the rate at which they were completing Task A (i.e., renewing contracts). Specifically, in line with velocity manipulations used in previous studies (e.g., Chang et al., 2010; Huang & Zhang, 2011), participants in the *fast* velocity condition were told that they were completing Task A “*very rapidly,”* whereas participants in the *slow* velocity condition were told that they were completing Task A “*very slowly.”* However, participants were also provided with *veridical information* regarding the rate at which they were completing contracts (i.e., “knowledge of results”). This means that participants were provided with information regarding their *objective* velocity, along with a *subjective* evaluation of how fast or slow that velocity was.

Valence manipulation. We manipulated valence by telling participants that Task B would be either *pleasant* or *unpleasant*. Specifically, participants in the *pleasant* valence condition were told that Task B was “*highly pleasant*” and best described as “*interesting and engaging*.” Conversely, participants in the *unpleasant* valence condition were told that Task B was “*highly unpleasant*” and best described as “*boring and annoying*.” To ensure that participants paid attention to the valence manipulation, participants answered the following knowledge check question immediately after viewing the manipulation: “The Hiring Task is best described as **_____________**” To advance further in the experiment, participants needed to correctly fill in the blank in this question with one of the following two options: “boring and annoying” or “interesting and engaging”.

Measures

Perceived time available (PTA). To measure PTA, participants were asked to rate their agreement on a 7-point scale (1 = “strongly disagree” and 7 = “strongly agree”) with the following statement: “*I will have a great deal of time available to work on Task B*”. Although single-item measures have been criticized for their narrow construct coverage, single-item measure are considered appropriate when the construct of interest is narrow (Rossiter, 2002), as is the case for PTA. As mentioned previously, PTA was measured following the velocity manipulation but prior to the affect measures.

Affect measures. Positive and negative affect were each measured via 10 items from the positive and negative affect schedule (PANAS; Watson, Clark, & Tellegen, 1988). In addition to the PANAS, we also included an additional 3 items for positive affect and an additional 6 items for negative affect. This was done to capture a broader range of emotional experiences than what is represented by the PANAS, as done in previous motivation and self-regulation research (e.g., Higgins, Shah, & Friedman, 1997; Shah & Higgins, 2001). Both positive affect and negative affect were measured twice: (1) immediately after participants provided informed consent, to provide us with participants’ *baseline* positive and negative affect, and (2) following the velocity manipulation and the PTA measure. All the items are listed below.

Positive affect. Participants were asked to rate the extent to which they felt *enthusiastic, interested, determined, excited*[2], *inspired, alert, active, strong, proud*, and *attentive* on a 5-point scale ranging from 1 ("Very slightly/not at all") to 5 ("Extremely"). In addition to these items, we also asked participants to rate the extent to which they felt *happy*, *relaxed*, and *calm*. Thus, a grand total of 13 items were used to measure positive affect. Cronbach's alpha for the positive affect measure was .91 at baseline and .95 when measured after the experimental manipulations.

Negative affect. Participants were asked to rate the extent to which they felt *scared, afraid, upset, distressed, jittery, nervous, afraid, guilty, irritable*, and *hostile*, on a 5-point scale ranging from 1 ("Very slightly/not at all") to 5 ("Extremely"). In addition to these items, we also asked participants to rate the extent to which they felt *anxious*, *sad, tense, disappointed, frustrated*, and *angry.* Thus, a grand total of 16 items were used to measure negative affect. Cronbach's alpha for the negative affect measure was .95 at baseline and .95 when measured after the experimental manipulations.

Analytic Strategy

We tested Hypotheses 1 and 2 via multiple regression. We controlled for *baseline* positive affect when testing Hypotheses 2a and 3a and controlled for *baseline* negative affect when testing Hypotheses 2b and 3b to account for baseline variance in affect. Given our interest in testing the mediating role of PTA in the relationship between velocity and affect (both positive and negative), we controlled for velocity when testing Hypotheses and 2a, 2b, 3a, and 3b to derive the simple slopes through which we will test our proposed mediation effects (i.e., Hypotheses 4a and 4b). To test Hypotheses 4a and 4b, we used the procedure outlined by Edwards and Lambert (2007). Specifically, we calculated the indirect effect of velocity on affect

[2] We inadvertently assessed "excited" twice in both the Time 1 and Time 2 affect measure. The results of our analyses are the same regardless of which instance of "excited" we included in our analyses.

via PTA at each level of Task B Valence using the simple slopes derived from our tests of Hypotheses 1 (velocity → PTA) and 3 (PTA → Affect at different levels of Task B valence). Next, we tested the significance of the indirect effects by generating asymmetric confidence intervals around them using Tofighi and MacKinnon's (2011) RMediation macro.

Results

Descriptive statistics

Means, standard deviations, inter-correlations, and internal consistency reliabilities are shown in Table 1.

Hypotheses Testing

Hypothesis 1. In support of Hypothesis 1, velocity was positively associated with PTA ($b = .44$, $SE = .14$, $p < .01$, $R^2 = .07$).

Hypothesis 2a. In support of Hypothesis 2a and as shown in Table 2, PTA was positively associated with positive affect when controlling for baseline positive affect and velocity ($b = .08$, $SE = .03$, $p < .05$, □$R^2 = .01$).

Hypothesis 2b. In support of Hypothesis 2b and as shown in Table 2, PTA was negatively associated with negative affect when controlling for baseline negative affect and velocity ($b = -.05$, $SE = .02$, $p < .05$, □$R^2 = .00$).

Hypothesis 3a. Hypothesis 3a stated perceived time available would interact with Task B valence to predict positive affect. Specifically, we predicted that the relationship between PTA and positive affect would be stronger when Task B was expected to be pleasant than when Task B was expected to be unpleasant. As shown in Table 2, we found a significant PTA × Task B valence interaction on positive affect ($b =.06$, $SE =.03$, □□□□□□□, $p < .05$, □$R^2 = .01$) when controlling for baseline positive affect and velocity. In addition, examination of the simple slopes indicated that, consistent with our prediction, the relationship between PTA and positive affect was significant and positive when Task B was expected to be pleasant ($b = .15$, $SE = .04$, $p < .01$) but non-significant when Task B was expected to be unpleasant ($b = .02$, $SE = .05$, *n.s.*). This interaction is plotted in Figure 4. Thus, Hypothesis 3a was supported.

Hypothesis 3b. Hypothesis 3b stated that perceived time available would interact with Task B valence to predict negative affect. Specifically, we predicted that the relationship between PTA and negative affect would be stronger when Task B was expected to be pleasant than when Task B was expected to be unpleasant. However, as shown in Table 3, we did not find a significant PTA × Task B valence on predict negative affect (b = 0.03, SE = 0.02, p = .24, □R^2 = .00) when controlling for baseline positive affect and velocity. Thus, Hypothesis 3b was not supported.

Hypothesis 4a. In support for Hypothesis 4a, and as shown in Table 4, the *indirect* effect of velocity on positive affect via PTA was significant and positive when Task B was expected to be pleasant (b = .07, 95% CI [.018, .126]), but non-significant when Task B was expected to be unpleasant (b = .01, 95% CI [-.036, .057]).

Hypothesis 4b. Hypothesis 4b stated that the *indirect* effect of velocity on positive affect via perceived time available would be stronger when Task B is expected to be pleasant than when Task B is expected to be unpleasant. Consistent with Hypothesis 4b, we found a *significant indirect effect* of velocity on negative affect via PTA (b = -.02, CI [-.047, -.003]; see Table 5). However, counter to Hypothesis 4b, this indirect effect was not moderated by Task B Valence. Thus, Hypothesis 4b was only partially supported.

Discussion

The employee's typical day is characterized by an exhaustive list of work and non-work goals to be accomplished. Previous studies on the process of goal pursuit have found that individuals' affective experiences during goal pursuit are greatly influenced by how *fast* they can accomplish their goals. However, much of the research on velocity to date has focused on the role of velocity in a relatively narrow situation: one in which people complete one isolated goal for which attainment is uncertain. Thus, our study expands our knowledge of the goal pursuit process by examining *why* and *when* velocity influences affect in a context more representative of a typical workday: one where people complete a sequence of goals for which attainment is relatively certain. In particular, we found in our study that fast velocity on an *initial task* led to positive affect by indicating that more time will be available *for the next task*. Yet, our study also shows that having more time for the next task as a result of a fast velocity may not be seen as a positive outcome in and of itself. Instead, the perceived value of having more time for the next task may depend on whether the next task is pleasant or unpleasant.

Implications

What happens next matters now. One important implication of our study is that the nature of the *next* task may influence individuals' affective experiences as they are engaged in an *initial* task. That is, we found that the relationship between velocity and positive affect via PTA was moderated by whether the next task was expected to be pleasant (vs. unpleasant). Our results complement those of Leroy (2009), who found that lingering thoughts about a *previous task* can interfere with performance on the *next* task. Thus, although a great deal of research has examined how people *simultaneously* regulate numerous goals (e.g. Schmidt & DeShon, 2007; Schmidt & Dolis, 2009; Schmidt, Dolis, & Tolli, 2009; Ballard, Yeo, Loft, Vancouver, & Neal, 2016), our results as well as Leroy's (2009) suggest that a thorough understanding of how people pursue goals also requires examining how people regulate goals *in sequence*.

Perceived vs. actual time available. Our results suggest that the amount of time people *perceive* having for the next task plays a mediating role in the relationship between velocity and affect. In contrast, supplementary analyses indicated that the *actual* amount of time participants had for the next task was not significantly related to positive or negative affect (nor did we expect such relationships). On a theoretical level, this highlights the importance in self-regulation and motivation research not only to measure the amount of time individuals *actually* have, but also measure the amount of time they *perceive* having. On a practical level, this finding suggests that providing employees with *subjective* evaluations of *objective* time estimates may be warranted. For example, although telling a subordinate that a project is due in one month provides a rather precise estimate of the amount of time the subordinate has, this information may be perceived in different ways. On the one hand, one month could imply an abundance of time, which could prompt the subordinate to set the project aside to focus on other goals. Alternatively, one month could instead imply a paucity of time to complete the project, which may prompt the subordinate to invest more effort on the project—even if it means neglecting other goals.

Distinguishing between positive and negative affect. Interestingly, our hypotheses for *positive affect* were supported, but our results for *negative affect* were generally not supported. The differing pattern of results is noteworthy because almost all of the studies examining the link between velocity and affect so far have conceptualized affect as opposite ends of the same construct (for an exception, see Wilt et al., in press). Although this conceptualization is consistent with Carver and Scheier's (1998) definition of affect as "a sense of positiveness or negativeness" (p.122), our pattern of results indicate that it may be best for future research to instead examine positive and negative affect as independent constructs.

Limitations and Strengths

Although our study makes contributions to the work motivation literature, it has some limitations. One key limitation of our research is that we did not have a proper "control" condition in our study, where velocity would be "moderate" and valence would be "neutral." Thus, the results of our PTA × valence interaction on positive affect will need to be clarified in future research. For instance, our results could mean that an abundance of time relates to positive affect only when the next task is expected to be pleasant (as opposed to neutral or unpleasant). However, our results could also suggest that an abundance of time relates to positive affect so long as the next task is not unpleasant (as opposed to pleasant or neutral).

One other limitation in our research was that although Task B was described as pleasant or unpleasant, its's nature was left relatively ambiguous and very little detail was provided regarding the Task. This was intentional because we wanted participants to imagine Task B as a task that they would personally perceive to be highly unpleasant. Yet, in the workplace, individuals are typically well-aware of the nature of their tasks and *why* they deem these tasks pleasant or unpleasant. For example, some individuals may regard a tasks as unpleasant because it is *difficult* whereas others may perceive a task as unpleasant because it is *boring*. Future studies should therefore examine the role of these different kinds of "unpleasantness" on affect.

In addition, given that our participants were undergraduate students completing simulated workplace tasks, it will be important for future research to examine whether our results generalize to employees completing *actual* workplace tasks, in which stakes are typically much higher. Nevertheless, our study's limitations should be considered alongside its strengths.

Mainly, employing an experimental design with random assignment allowed us to draw causal inferences regarding the influence of velocity and Task B valence on affect.

Future Directions

Going beyond positive and negative affect. The entirety of the research examining the role of velocity on affect has focused on positive and negative affect. Yet, a growing body of evidence suggests that researchers should consider examining the role of *discrete* forms of affect (Cheng & Wang, 2015; Harmon-Jones, Bastian, & Harmon-Jones, 2016). One reason why future research should examine discrete forms of affect is because although affect can differ in terms of valence (i.e., positive vs. negative), affect can also be distinguished in terms of activation (e.g., Posner, Russell, & Peterson, 2005; Watson et al., 1988). For example, De Dreu, Bass, and Dijstad (2008) found moods high in activation (e.g., anger, joy) led to better performance on a creative task than moods low in activation (e.g., sadness, relaxation). Similarly, Cheng and Wang (2015) found that experimentally inducing *amusement* led to increased persistence on a laboratory task, but that inducing *contentment* did not. Given these findings, the velocity literature would benefit from a more thorough investigation of how velocity influences discrete rather than broad forms of affect.

The role of goal framing. In a similar vein, future velocity research should consider the role of different goal frames. In particular, regulatory focus theory (Higgins, 1996) highlights that goals can be framed as *approach* goals (e.g., "become a productive member of society") or as *avoidance* goals (e.g., "don't become like your unemployed uncle"). Nearly twenty years ago, Carver and Scheier (1998) incorporated Higgins' (1997) regulatory focus theory in their theorizing on velocity and argued that for *approach* goals, fast velocities may lead to *elation* whereas slow velocities may lead to *sadness*. Conversely, for *avoidance* goals, they proposed that fast velocities may lead to *contentment* whereas slow velocities may lead to *anxiety*. An empirical test of this proposition is long overdue.

Conclusion

In their day to day lives, individuals have a paucity of time to complete a seemingly infinite sequence of work and non-work goals. Although a great research attention has been paid to goals, much less is known about the *process* through which people pursue goals. Given that individuals pursue goals over time, velocity constitutes one key aspect of the goal pursuit process. In our study, we found that fast velocity on an *initial* task can lead to increased positive affect by signaling that an abundance of time—a valued resource—will be available for the *next* task, but only if that next task is expected to be pleasant as opposed to unpleasant. Our findings contribute to the work motivation and self-regulation literature by shedding light on *why* and *when* goal progress velocity influences affect in a context that closely approximates the typical workday, where individuals sequentially complete goals over time.

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Appendix A - Tables

Table 1
Means, Standard Deviations, and Inter-correlations

	Mean	*SD*	*Correlations* 1	2	3	4	5	6	7
1. Velocity	-.03	1.00	-						
2. Valence	.01	1.00	.05	-					
3. Perceived Time Available	4.85	1.68	.26*	.03	-				
4. Baseline Positive Affect	2.58	.75	-.02	.05	-.12	(.91)			
5. Baseline Negative Affect	1.66	.75	-.08	-.06	-.07	.01	(.95)		
6. Positive Affect	2.42	.90	.05	.06	.06	.73**	.16	(.95)	
7. Negative Affect	1.56	.69	-.12	.01	-.19*	.10	.72**	.16	(.95)

Note: N = 145. Effect coding was used for both velocity (*slow* = -1, *fast* = 1) and Task B Valence (*unpleasant* = -1, *pleasant* = 1). Where applicable, reliabilities are reported on the diagonal in parentheses. *p < .05. **p < .01. Two-tailed tests were used for significance testing.

Table 2

Regression results for Positive Affect

	b	*SE*	*p*	R^2	ΔR^2
Step 1: PA predicted by baseline PA, velocity, and PTA					
Intercept	-.25	.25	.317		
Baseline PA	.90	.07	<.001		
Velocity	.02	.05	.645		
PTA	.07	.03	.018		
				.55	–
Step 2: PA predicted by baseline PA, velocity, PTA, VAL, and the PTA × VAL interaction					
Intercept	-.21	.25	.393		
Baseline PA	.89	.07	<.001		
Velocity	.03	.05	.567		
PTA	.07	.03	.029		
VAL	-.29	.15	.061		
PTA × VAL	.06	.03	.039		
				.56	.01

Note: *N* = 145. PTA = Perceived Time Available. PA = Positive Affect. VAL = Task B Valence. Effect coding was used for both velocity (*slow* = -1, *fast* = 1) and Task B Valence (*unpleasant* = -1, *pleasant* = 1).

Table 3
Regression Results for Negative Affect

	b	*SE*	*p*	R^2	ΔR^2
Step 1: NA predicted by baseline NA, velocity, and PTA					
Intercept	.74	.16	<.001		
Baseline NA	.65	.05	<.001		
Velocity	-.02	.04	.608		
PTA	-.05	.02	.035		
				.52	–
Step 2: NA predicted by baseline NA, velocity, PTA, VAL, and the PTA × VAL interaction					
Intercept	.77	.16	<.001		
Baseline NA	.64	.05	<.001		
Velocity	-.02	.04	.623		
PTA	-.06	.02	.026		
VAL	-.10	.12	.417		
PTA × VAL	.03	.02	.237		
				.52	.00

Note: *N* = 145. PTA = Perceived Time Available. NA = Negative Affect. VAL = Task B Valence. Effect coding was used for both velocity (*slow* = -1, *fast* = 1) and Task B Valence (*unpleasant* = -1, *pleasant* = 1).

Table 4

Mediation Test Results for Positive Affect

	VEL → PTA		PTA → PA		Mediation		
	b	*SE*	*b*	*SE*	Effect	LB	UB
Task B Valence: Pleasant	.44	.14	.15	.04	.07 **	.019	.128
Task B Valence: Unpleasant	.44	.14	.02	.05	.01	-.036	.058

Note: N = 145. VEL = velocity. PTA = perceived time available. PA = Positive Affect. The lower (LB) and upper bound (UB) are based on the 95% confidence interval. ** $p < .01$.

Table 5

Mediation Test Results for Negative Affect

	VEL → PTA		VAL → NA		Mediation		
	b	*SE*	*b*	*SE*	Effect	LB	UB
Task B Valence: Both conditions	.44	.14	-.05	.02	-.02 *	-.048	-.003

Note: *N* = 145. VEL = velocity. PTA = perceived time available. NA = Negative Affect. The lower (LB) and upper bound (UB) are based on the 95% confidence interval. * $p < .05$.

Appendix B - Figures

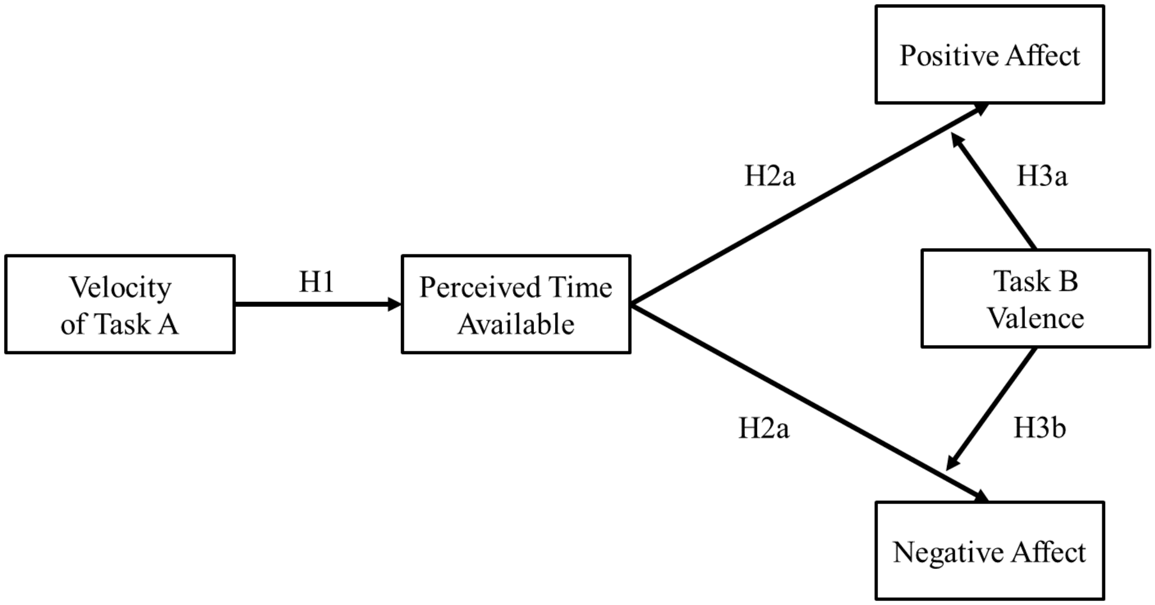

Figure 1. Path model illustrating our hypothesized moderated mediation model.

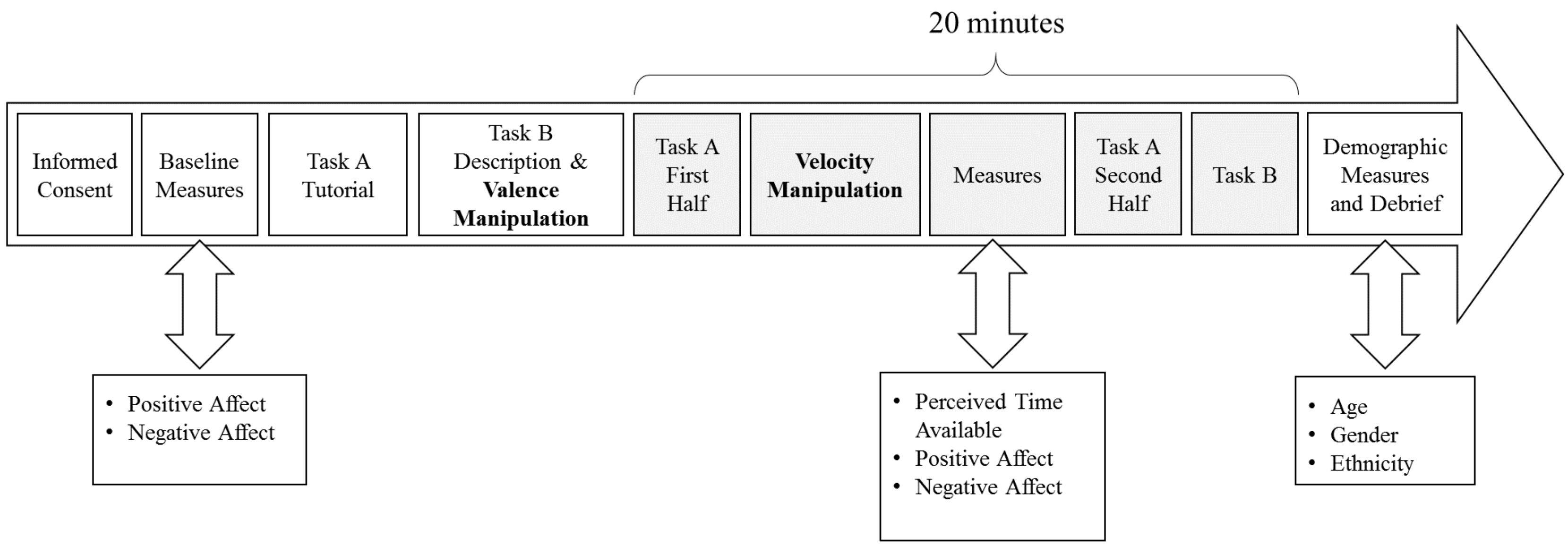

Figure 2. Study procedure. Experimental manipulations are bolded, and measures are indicated on the boxes at the bottom of the figure. The shaded areas reflect the fact that participants were to spend a total of 20 minutes across *both* Task A and Task B.

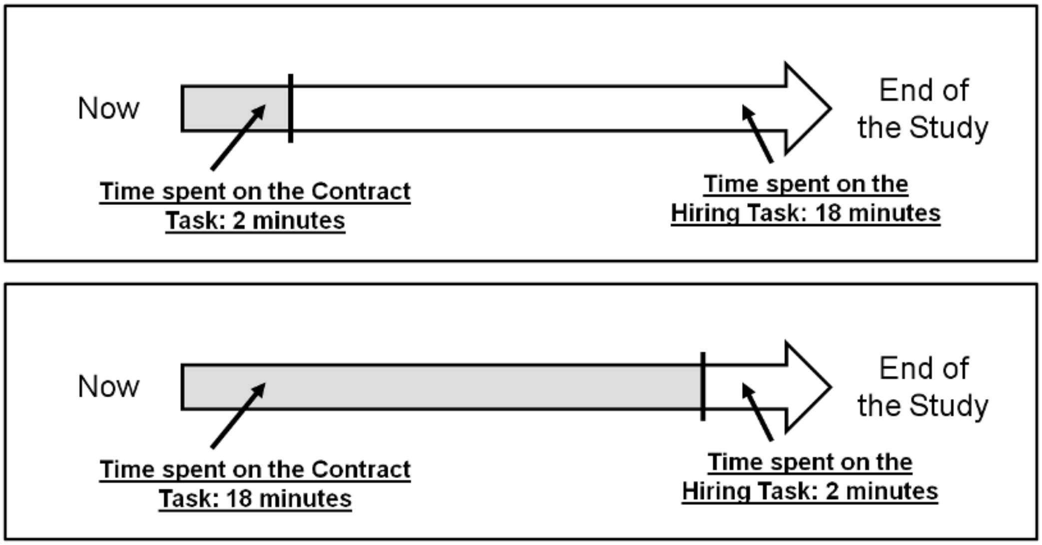

Figure 3. Example shown to participants during the study. This was done to highlight the fact that they would spend a total of 20 minutes across both Task A (the *Contract Task*) and Task B (The *Hiring Task*).

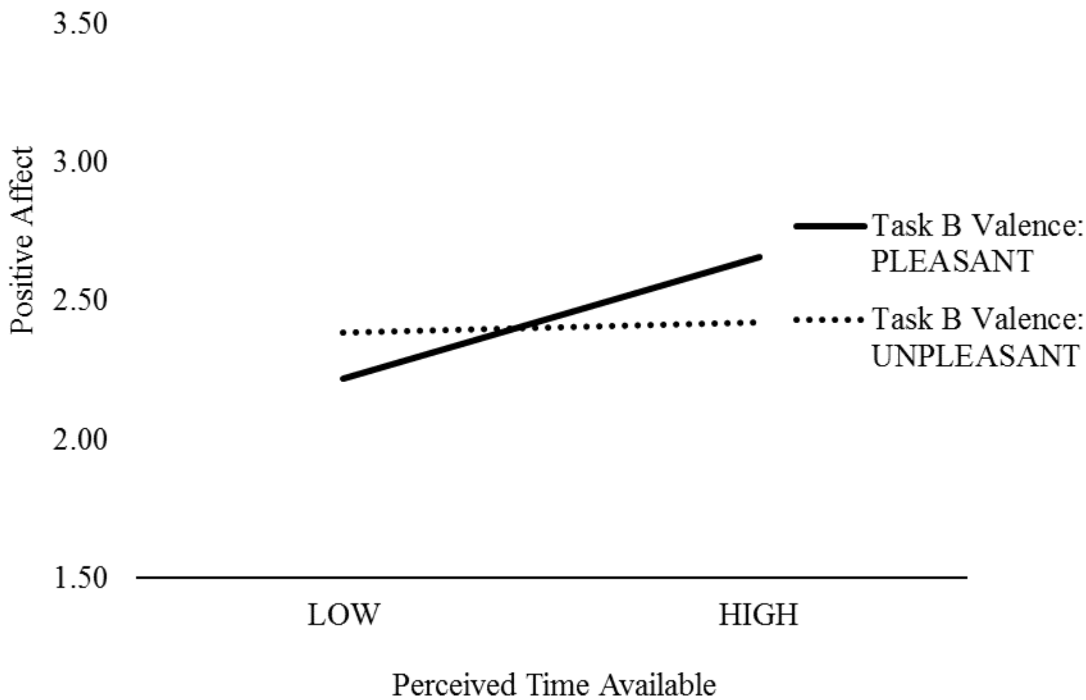

Figure 4. Interaction between perceived time available and Task B valence on positive affect.