## The Role of Self-Determined Motivation in Job Search: A Dynamic Approach

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# The Role of Self-Determined Motivation in Job Search: A Dynamic Approach

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Job search is a dynamic self-regulated process during which job seekers need to stay motivated to secure a job. However, past research has taken a relatively static approach to examining motivation during the job search, in addition to ignoring how the quality of one's motivation—ranging from autonomous to controlled—can influence job search processes. Adopting a within-person perspective, the current study extends self-determination theory (SDT) to the job search context to investigate (a) when autonomous and controlled motivations are more or less prevalent and (b) whether they influence job search effort through metacognitive strategies in differing ways depending upon the amount of time elapsed in the search. In a weekly study of new labor market entrants (Level-2 $n = 149$; Level-1 $n = 691$), results indicated that autonomous motivation decreased until the midpoint of the job search and then plateaued, whereas controlled motivation remained stable. Results also showed that autonomous motivation had a consistent, positive relation with metacognitive strategies, whereas the relation between controlled motivation and such strategies was negative early in the job search, but became positive as the job search progressed. Finally, the effects of motivation on job search effort occurred *via* metacognitive strategies differentially depending upon the time elapsed in the search. Combined, we provide a first glimpse into the dynamics of self-determined motivation on job search processes.

*Keywords:* job search, self-determination theory, effort, metacognitive strategies

Many reasons can drive a person to search for a job. On the one hand, individuals may think the prospect of getting a job is exciting, or see the value in obtaining a job to achieve self-actualization. On the other hand, individuals may worry about finding a job to pay off loans, or to get rid of pressure from social others to enter "the real world." Such examples fit with Deci and Ryan's self-determination theory (SDT; Deci & Ryan, 1985, 2000; see Gagné & Deci, 2005), which outlines that an individual's motivation varies on a continuum from autonomous (i.e., behaving out of personal choice) to controlled (i.e., behaving due to external pressure). During the job search, both motivations may not only occur, but may play important roles during the process. For ex-

ample, job seekers might start the search with higher autonomous motivation, as they may feel excited about exploring career options (Blustein, 1988). However, as the search progresses and reality sets in (e.g., pressure to settle for any job), controlled motivation may play a larger role as individuals need external resources—such as pay and benefits—that come with a job to satisfy basic needs. A dynamic lens is thus needed to understand how different forms of motivation may change (i.e., increase or decrease) and impact job search processes over time.

Numerous researchers have theorized that job search is a dynamic, self-regulated process (e.g., Barber, Daly, Giannantonio, & Phillips, 1994; Kanfer, Wanberg, & Kantrowitz, 2001; Liu, Wang, Liao, & Shi, 2014; Wanberg, Zhu, & van Hooft, 2010), with motivation being viewed as playing a crucial role in job search processes (Kanfer et al., 2001; Wanberg, Zhu, Kanfer, & Zhang, 2012). Yet, little is known about the *quality* of motivation—ranging from autonomous to controlled (e.g., Deci & Ryan, 2000; Sheldon, Turban, Brown, Barrick, & Judge, 2003)—that job seekers experience. Moreover, although Saks and Ashforth (2000) suggested that job search is a time-related process involving different dynamics (i.e., different motivations) at varying stages of the job search, research is needed to investigate how motivation impacts job search processes differentially over time. Specifically, as time elapses during the job search, autonomous and controlled motivations may (a) vary in magnitude, and (b) have changing relationships with the amount of effort job seekers invest through the way they strategize about their job search.

Our study makes three primary contributions. First, using weekly surveys, we consider how autonomous and controlled motivations change during the job search among students entering

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the job market (i.e., new labor market entrants; Boswell, Zimmerman, & Swider, 2012), a sample similar to past research (da Motta Veiga & Turban, 2014; Liu et al., 2014; Sun, Song, & Lim, 2013). New labor market entrants start looking for jobs at similar times and go through parallel stages of their respective searches. In our study, we examined motivation starting at the fall semester's career fair during the academic year, as this begins new labor market entrants' job search and on-campus recruitment (Barber, Wesson, Roberson, & Taylor, 1999; Liu et al., 2014) and allowed us to follow job seekers during the most active job search stage (Liu et al., 2014; Lopez-Kidwell, Grosser, Dineen, & Borgatti, 2013).

Second, building upon calls to consider time in organizational scholarship (George & Jones, 2000), we apply SDT to the job search to test the changing relations between self-determined motivation and effort exerted. Further, we theorize that the changing relations between motivation and job search effort occur through an important process mechanism: metacognitive strategies. Following prior research (e.g., Turban, Stevens, & Lee, 2009), we view metacognitive strategies as a critical self-regulatory job search process mechanism (Van Hooft, Wanberg, & Van Hoye, 2013) that assesses how job seekers set and revise personal goals, develop job search plans, monitor and analyze the job search process, and improve their skills related to finding a job. Thus, we seek to understand how different forms of motivation relate to the extent to which, depending upon the amount of time elapsed in the search, job seekers regulate their effort via the way they strategize about their search, both of which are vital processes for job search success (Kanfer et al., 2001; Lopez-Kidwell et al., 2013; Turban et al., 2009; Van Hooft et al., 2013; Wanberg et al., 2010). To understand how the influence of motivation changes over time, we integrate SDT with the sequential job search model (Barber et al., 1994) and the attentional focus model of time pressure (Karau & Kelly, 1992), which suggest that as time passes in goal-directed processes like the job search (e.g., da Motta Veiga & Turban, 2014), individuals experience increased external pressure. We expect that the positive benefits of autonomous motivation will wane over time, and the negative effects of controlled motivation early in the job search will become positive later in the search.

Finally, we contribute practically by identifying when certain motivations are more or less beneficial for job seekers. In doing so, we provide a nuanced discussion that can shape the efforts of job seekers and career counselors, as well as employers as they attract job applicants. In sum, our focus allows us to understand how time elapsed during the job search acts as a boundary condition on the relations between different motivations, metacognitive strategies, and job search effort. To achieve this goal, we test a multilevel moderated mediation model (Bauer, Preacher, & Gil, 2006) that delineates how time elapsed during the job search moderates the within-person relationship between both forms of self-determined motivation and metacognitive strategies, ultimately influencing job search effort. Our hypothesized model is shown in Figure 1.

## Theoretical Development and Hypotheses

As previously described, there can be multiple reasons why individuals are motivated to search for a job. The same can be said for many activities individuals engage in, such as going to work, setting fitness goals, and so forth. In light of these different motivations, one theory that has garnered empirical support across multiple contexts (e.g., education, athletics, Gagné & Deci, 2005) and has burgeoned into the organizational sciences (see Gagné, 2014, for a full review) is SDT (Deci & Ryan, 1985). According to SDT, motivation is not just based on *quantity* (i.e., how much motivation a person experiences), but also on the *quality* of one's motivation to perform tasks or achieve goals (Deci & Ryan, 2000; Sheldon, 2004; Sheldon et al., 2003).

According to Sheldon et al. (2003), the quality of one's motivation ranges from autonomous to controlled (or intrinsic to extrinsic; Benedetti, Diefendorff, Gabriel, & Chandler, 2015) with the former being higher in quality. *Autonomous motivation* occurs when individuals identify with goal pursuits that are "organismically integrated" for identified or intrinsic reasons (Sheldon et al., 2003, p. 363). Identified reasons for goal pursuit involve pursing goals that are set extrinsically (e.g., by the situation or boss), but are aligned with one's goals or values, and intrinsic pursuits involve goals that are pursued because they are inherently enjoyable and self-set (Deci & Ryan, 2000; Gagné & Deci, 2005). *Controlled motivation*, on the other hand, occurs when the impetus for pursuing a goal is driven by the external environment for external or introjected reasons (Moran, Diefendorff, Kim, & Liu, 2012; Sheldon & Elliot, 1998). In this instance, external reasons involve pursuing a goal to avoid punishment and/or obtain an extrinsic reward, and introjected pursuits involve pursuing a goal in order to avoid feelings of guilt (Deci & Ryan, 2000; Gagné & Deci, 2005). In remaining consistent with SDT and prior work, we operationalized autonomous motivation as a combination of identified and intrinsic motivations, and controlled motivation as a combination of external and introjected motivations (Bono &
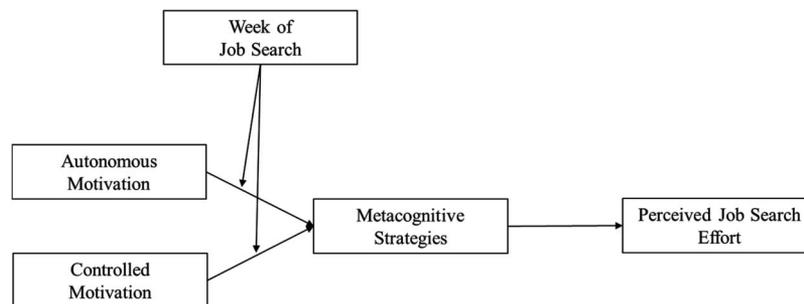


*Figure 1.* Hypothesized model. Note: All variables were assessed at Level-1 (i.e., within-person).

Judge, 2003; Judge, Bono, Erez, & Locke, 2005; Sheldon & Elliot, 1998; Sheldon et al., 2003).

In studying SDT, research has largely focused on well-being and performance. Research shows that autonomous motivation leads to higher engagement, persistence, creativity, quality learning, and well-being (Deci & Ryan, 2000; Reeve, 2005; Sheldon, 2004); those experiencing controlled motivation tend to have lower performance (Deci & Ryan, 2000) and engagement (Walker, Greene, & Mansell, 2006). Interestingly, Eisenberger, Rhoades, and Cameron (1999) articulated that, in certain contexts, controlled motivation may not only be beneficial, but expected. For example, most employees work with the intent of receiving pay. Although performing for pay can be construed as a controlled form of motivation, it is also an essential part of the work process and can be viewed as rewarding one's level of competence (Eisenberger et al., 1999; Sheldon et al., 2003). Thus, in certain contexts where external pressure is expected, such as the job search, controlled motivation may not be inherently problematic. In addition, research has illustrated that autonomous and controlled motivations vary within-person (Benedetti et al., 2015), suggesting that these motivations may fluctuate over time. For example, the attentional focus model (Karau & Kelly, 1992; Kelly & Karau, 1999) suggests that as time elapses in goal pursuits, external pressure—which aligns with controlled motivation (Moran et al., 2012; Sheldon & Elliot, 1998)—increases. Applied to the job search, this suggests that autonomous and controlled motivations may vary in importance as the job search progresses.

Despite its theoretical relevance, SDT has received very little attention in connection to the job search. As an exception, Vansteenkiste, Lens, De Witte, De Witte, and Deci (2004a) found that autonomous motivation *in general* (i.e., at the person-level) was positively related to job search intensity; controlled motivation in general was unrelated to intensity. Beyond this work, research has focused on the role motivation more broadly plays during the job search. For example, Kanfer et al. (2001) identified two categories of motivation that influence job search behaviors—generalized expectancies (i.e., locus of control, optimism) and self-evaluations (i.e., self-esteem, job search self-efficacy)—with prior work finding that higher job search self-efficacy positively relates to job search intensity (Côté, Saks, & Zikic, 2006). Moreover, Kanfer et al. (2001) articulated that job search behaviors can be influenced by one's motives for finding a job, with Wanberg, Kanfer, and Rotundo (1999) finding that financial hardship relates to higher job search effort and faster reemployment. Fitting with SDT, the latter results illustrate that controlled forms of motivation *can* play a crucial role during the job search process.

Beyond a lack of consideration of SDT, most research investigating the role of motivation in job search has treated motivation as a static (i.e., person-level) construct (e.g., Côté et al., 2006; Vansteenkiste et al., 2004a; Wanberg et al., 1999). This is problematic, as assessing motivation as static creates misalignment between measurement and the theoretical idea that job search is a self-regulated process that evolves over time (Barber et al., 1994; Kanfer et al., 2001; Liu et al., 2014; Wanberg et al., 2012, 2010). As scholars have noted, statistical errors, including ones generating false conclusions, can occur when theory does not align with the methodological lens being adopted (Dalal & Hulin, 2008; Ebner-Priemer & Trull, 2011; Kozlowski, & Klein, 2000). Given the dynamic nature of the job search (da Motta Veiga & Turban,

2014; Liu et al., 2014; Sun et al., 2013; Wanberg et al., 2010), a within-person lens is needed as individuals likely experience changes in their motivation on a week-to-week basis. This is particularly the case for new labor market entrants—the sample of the current study—given that each week will likely yield new information about one's job search (Barber et al., 1994). Although some within-person studies have taken a self-regulatory approach (e.g., Liu et al., 2014; Song, Uy, Zhang, & Shi, 2009; Wanberg et al., 2010, 2012), scholars have yet to examine whether different motivations influence how job seekers regulate their effort as time passes and pressure increases. Moreover, little is known about the *process* through which different motivations affect effort over the job search. As we hypothesize below, we expect that the way individuals strategize about their job search will be influenced by both autonomous and controlled motivations differentially over time, ultimately impacting job search effort.

## Autonomous and Controlled Motivations Over the Job Search

In understanding how the quality of motivation varies during the job search, an important first step involves assessing whether levels of autonomous and controlled motivation change over time (e.g., Deci & Ryan, 2000). Theoretically, we posit that the experience of autonomous motivation will decrease over time, whereas the experience of controlled motivation will increase. This is consistent with sequential job search models (Barber et al., 1994) and the attentional focus model of time pressure (Karau & Kelly, 1992; Kelly & Karau, 1999), which suggest that as time elapses during a goal-directed event like the job search, pressure increases to make decisions and complete goals. As such, individuals focus their attention on relevant information during the job search process over time (Kelly & Loving, 2004). Liu et al. (2014) highlighted that a person searching for a job may set the goal of finding employment within two months; for new labor market entrants, it may be finding a job by the end of the semester after the career fair. In this example, the job seeker has self-set a goal, and will make progress based on his or her own autonomous motivation. However, this autonomous motivation driving one's enthusiasm in finding employment will likely decrease over time as one may become frustrated with the ups and downs of the job search (Wanberg et al., 2010). Conversely, although individuals may have lower controlled motivation at the onset of the search, time pressure may increase controlled motivation as the job search elapses (Lopez-Kidwell et al., 2013). This is a natural part of the job search: As time goes on without obtaining employment, time pressure from the self and social others may increase (e.g., personal frustration; inquisitive parents wanting to know how the job search is progressing). Thus, we expect to see a decrease in autonomous motivation across the job search, and an increase in controlled motivation.

> *Hypothesis 1:* Autonomous motivation will decrease as the job search progresses.
>
> *Hypothesis 2:* Controlled motivation will increase as the job search progresses.

Beyond considering whether autonomous or controlled motivations change during the job search, we theorize that these two

motivations will differentially affect the amount of effort job seekers exert through the way they strategize about their job search over time. As previously mentioned, metacognitive strategies represent a process mechanism capturing job search self-regulatory activities (e.g., establishing/monitoring progress toward job search goals, improving job seeking skills, analyzing one's job search; Turban et al., 2009), with these strategies relating to increased job search effort and success (Côté et al., 2006; Kanfer et al., 2001; Turban et al., 2009; Wanberg et al., 2010). When theorizing how autonomous motivation may affect metacognitive strategies, past research has found that autonomous motivation tends to be positively related to deep-level cognitive processing (e.g., Koestner & Losier, 2002; Sheldon & Elliot, 1998; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004b), which aligns with the core focus of metacognitive strategies. As such, we expect a positive relationship between autonomous motivation and metacognitive strategies, especially at the onset of the job search process when job seekers look forward to exploring their career options (Blustein, 1988).

However, given our interest in exploring how these relations evolve over time, we expect that the positive relation will weaken as time elapses in the job search. Indeed, Kelly and Loving (2004) suggested that individuals will prioritize information differentially as external time pressure increases. In the case of the job search, individuals may experience heightened time pressure related to getting a job (Lopez-Kidwell et al., 2013), causing them to focus more on external pressure from their environment dictating job search success and their viability as a job candidate (e.g., the nature of the job market, social others receiving jobs, rejections). This is in contrast to earlier phases in the job search, wherein autonomous motivation may be the primary motivator dictating one's self-regulatory activities, and individuals are still eager and willing to tackle the complexities of the job search. Recently, Benedetti et al. (2015) established that autonomous motivation exhibits weakening, positive relations with employee well-being throughout the workday, arguing that as employees become depleted as the workday progresses, the benefits of autonomous motivation wear off. Applying similar theoretical rationale, as the job search progresses and job seekers become more cognizant of the pressures associated with finding a job, we expect that the positive relationship between autonomous motivation and metacognitive strategies will become weaker. Thus, we hypothesize:

*Hypothesis 3:* Time elapsed during the job search will interact with autonomous motivation in predicting metacognitive strategies, such that autonomous motivation exhibits a strong, positive relationship with metacognitive strategies early in the job search and a weaker, positive relationship late in the job search.

In the case of controlled motivation, evidence indicates that those experiencing controlled motivation tend to be less engaged (Walker et al., 2006), leading to less deep-level cognitive processing. Although such a negative relationship between controlled motivation and metacognitive strategies is likely at the onset of the job search, as the job search progresses and pressure to find a job becomes more salient (Kelly & Loving, 2004; Lopez-Kidwell et al., 2013), we theorize that controlled motivation will become more prevalent and *positively* influence metacognitive strategies.

Lopez-Kidwell et al. (2013) argued that time pressure increases as job seekers progress through their search and the goal of finding a job becomes more proximal. Thus, controlled motivation could spark an increased drive in individuals to strategize about their search and secure the best possible job. Song et al. (2009) found that the experience of distress *positively* related to next day's job search effort, suggesting that people may search for a job as a means of coping. Applied to the current study, experiencing controlled motivation may trigger metacognitive strategies similarly, such that individuals use job search self-regulatory activities as a means to cope with these increasing external pressures. This is consistent with theory and empirical evidence that job search activities can serve as problem-focused coping behaviors (McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Wanberg, 1997). As such, we hypothesize a disordinal interaction between time elapsed in the job search and controlled motivation in predicting metacognitive strategies.

*Hypothesis 4:* Time elapsed during the job search will interact with controlled motivation in predicting metacognitive strategies, such that controlled motivation exhibits a negative relationship with metacognitive strategies early in the job search and a positive relationship late in the job search.

Assuming that autonomous and controlled motivations affect metacognitive strategies differentially over time, we expect that metacognitive strategies will then positively affect job seekers' effort. Evidence indicates that metacognitive strategies are positively related to the amount of effort one dedicates to searching for a job, making it a process-based mechanism in the job search (Turban et al., 2009). That is, by enacting metacognitive strategies, job seekers should ultimately end up investing more energy in their search. Indeed, considerable evidence indicates that individuals who set specific goals and monitor their progress toward goal achievement exert greater effort (e.g., Elliot, McGregor, & Gable, 1999; Locke & Latham, 1990; Turban et al., 2009). Therefore, we hypothesize the following relationship:

*Hypothesis 5:* Metacognitive strategies will positively predict job search effort.

Taken together, our hypotheses suggest moderated mediation (Edwards & Lambert, 2007; Muller, Judd, & Yzerbyt, 2005), with both forms of motivation affecting job search effort indirectly via metacognitive strategies differentially depending upon the time elapsed during the job search. This mediated chain fits with preliminary work linking autonomous and controlled motivations to effort in general. In particular, evidence indicates that autonomous motivation tends to positively relate to persistence (e.g., Koestner & Losier, 2002; Sheldon & Elliot, 1998; Vansteenkiste et al., 2004b), whereas controlled motivation tends to relate to lower engagement and effort (Walker et al., 2006). Thus, we hypothesize the following:

*Hypothesis 6:* The indirect effect of autonomous motivation on job search effort via metacognitive strategies will be strong and positive early in the job search and weaken as the job search progresses.

*Hypothesis 7:* The indirect effect of controlled motivation on job search effort via metacognitive strategies will be negative early in the job search and positive late in the job search.

## Method

For our sample of new labor market entrants, we recruited business school students who were actively involved in the job search at three universities (a large Midwestern university, a large Southeastern university, and a medium Northeastern university) during the Fall 2013 semester (see da Motta Veiga & Turban, 2014 and Liu et al., 2014 for similar samples). Participants were asked via e-mail to participate in a weekly study assessing their experiences as they went through the job search process over 5 weeks.[1] We chose weekly assessments to allow enough time for motivation, metacognitive strategies, and effort to vary (e.g., Ebner-Priemer & Trull, 2011), because job seeking is not the only activity in which students are involved, and we did not feel daily assessments would allow enough time to lapse to capture meaningful variation in our constructs (e.g., da Motta Veiga & Turban, 2014).

In order to align our study with the actual process new labor market entrants go through, we picked each university's career fair as the kick-off for our data collection to provide a clear temporal landmark as the starting point for our participants (Liu et al., 2014). In the introductory e-mail, participants were provided a link to a survey to opt-in to the weekly study and provide demographic information; from this initial contact, we received 300 responses yielding a response rate of about 12%,[2] which is consistent with past research (e.g., Turban, Lee, da Motta Veiga, Haggard, & Wu, 2013). After the preliminary survey was completed, participants were sent a weekly e-mail on Thursday each week for 5 weeks with reminders sent via e-mail on Saturdays and Mondays to increase response rates. We viewed 5 weeks as an appropriate time frame given that new labor market entrants and recruiters are most active in the 5 to 6 weeks following a major recruiting event, such as the career fair (e.g., Liu et al., 2014).

Of the 300 participants, 171 provided at least three weekly responses. Additionally, we asked participants in our opt-in survey to identify how far along they were in the job search. Twenty-two individuals indicated that they were close to securing a job; these individuals were removed to ensure that participants were at a similar phase of the job search process.[3] This yielded a final sample of 149 participants (Level-2) who provided 691 weekly surveys (Level-1), or 4.64 surveys per person on average; as a note, 745 weekly surveys were possible, yielding a 93% completion rate. Our sample was largely female (56.4%) with half (50.5%) of the participants reporting they were white. Participants were of 22.46 years of age on average ($SD$ = 3.06; range = 19–38), and were largely undergraduate students (61.1%); the remaining 38.9% of participants were graduate students enrolled in a joint undergraduate-graduate degree. On average, participants had a GPA of 3.39 out of 4.00 ($SD$ = 0.35; range = 2.6–4.0).

### Weekly Survey Measures

**Self-determined motivation.** We measured self-determined motivation with a modified version of Moran et al.'s (2012) 12-item scale (three items per motivation; see below). Participants were asked "*In the last week*, what has motivated you to search for a job/internship?" They were then provided with different reasons for engaging in the job search and asked to indicate the extent to which they agreed with each item (1 = *strongly disagree*; 5 = *strongly agree*).

For controlled motivation, we combined external and introjected motivations (average reliability across weeks = .84). The external motivation items were: "because my parents want me to find a job;" "because the situation demands it;" and "because I need to start getting paid." For introjected motivation, participants were asked if they were motivated for the following reasons: "because I would feel guilty if I did not do well;" "because I would feel ashamed if I did poorly;" and "because I would feel bad about myself if I did not do a good job."

For autonomous motivation, we combined identified and intrinsic motivations (average reliability across weeks = .87). The identified motivation items were: "because I believe searching and finding a job is valuable;" "because this job search is important;" and "because I value this job search." For intrinsic motivation, items were: "because I find searching and finding a job interesting;" "because job seeking is fun;" and "because I find job seeking engaging."

**Metacognitive strategies.** Metacognitive strategies were measured using six items developed by Turban et al. (2009; average reliability across weeks = .90). Participants were instructed to indicate the extent to which they engaged in a list of activities over the last week using a 5-point scale (1 = *I never did this or thought to do this*; 5 = *I did or thought this all the time*). The items were: "set/revised personal goals to help guide job search activities;" "developed a coherent plan to guide my job search;" "monitored my progress toward finding a job;" "thought about how best to present myself to potential employers;" "analyzed behaviors and feedback to improve subsequent performance;" and "thought about how to improve my skills at finding a job."

**Perceived job search effort.** Job search effort in the last week was measured using a 2-item measure adapted from Saks and Ashforth (2002). Participants indicated the extent to which they agreed with the following two items using a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*): "I spent a lot of time looking for job opportunities;" and "I devoted much effort to looking for a job." The two items correlated strongly together indicating acceptable reliability (within-person Pearson's $r$ = .80, $p$ < .001; Spearman-Brown corrected correlation $r$ = .79, $p$ < .001).

**Time elapsed during the job search.** In order to model in which week the data was collected, we utilized a trend variable (Beal & Weiss, 2003) that was a numeric indicator of each week of data collection (i.e., Week 1 = 0; Week 2 = 1; Week 3 = 2; Week 4 = 3; Week 5 = 4). We chose to make Week 1 correspond to 0 in order to make the intercept in our analyses meaningful and enhance our interpretation. Further, we operationalized Week 1 as early job search, Week 3 as middle job search, and Week 5 as late job search.

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[1] The data presented in this article were part of a broader data collection effort.

[2] To help ensure our sample did not differ from the overall population we collected from, we ran *t* tests comparing gender and GPA for those who completed the survey and those who did not; as a note, these were the only variables available to us for those who did not participate. No significant differences emerged.

[3] The inclusion of these 22 individuals in the analyses did not change any of the conclusions presented in this study.

## Control Variables

We considered several variables as person-level (Level-2) predictors of our endogenous variable (job search effort). In particular, we tested control variables (e.g., gender, type of job search [full-time job vs. internship], GPA) that have been considered in past job search research (e.g., Turban et al., 2009, 2013). All paths reported below remained significant with these variables included. In addition, none of the controls considered significantly predicted job search effort. For model parsimony, we chose to not include these control variables in our final model presentation, though the correlations among the controls and our Level-1 variables are reported in Table 1.

## Analytic Approach

Because our weekly surveys were nested within-person, we used multilevel structural equation modeling (MSEM) in MPlus 7.31 (Muthén & Muthén, 1998–2013). As a preliminary analysis, we analyzed the amount of within-person variance by running a series of null models; this source of variance was substantial (autonomous motivation: 26.70%; controlled motivation: 26.77%; metacognitive strategies: 43.97%; perceived job search effort: 64.85%), supporting the necessity for conducting multilevel analyses. We also performed a multilevel confirmatory factor analysis on our variables to ensure that participants distinguished our constructs across the 5 weeks. We treated autonomous and controlled motivations as higher-order factors, with external and introjected motivation loading onto controlled motivation, and identified and intrinsic motivation loading onto autonomous motivation. Results indicated good model fit ($\chi^2 = 466.53$, $df = 160$, CFI = .94, TLI = .93, RMSEA = .05, $SRMR_{within}$ = .06).

To test the trends of autonomous and controlled motivations over time (Hypotheses 1 and 2), we utilized growth curve modeling (GCM). As articulated by Ployhart and Vandenberg (2010), GCM allows researchers to determine whether constructs exhibit linear or nonlinear (i.e., curvilinear) trajectories over time. As such, we tested the linear (i.e., week) and nonlinear effects of time (i.e., the squared term of week) as predictors of autonomous and

controlled motivations; the linear and nonlinear terms were entered uncentered (Enders & Tofighi, 2007).

In order to test the interactive effects of week with self-determined motivation predicting metacognitive strategies (Hypotheses 3 and 4), autonomous motivation, controlled motivation, and week of the job search were treated as Level-1 predictors of metacognitive strategies. Based on Enders and Tofighi (2007), autonomous and controlled motivations were within-person (i.e., person-mean) centered; week was uncentered to provide a common metric across participants. The interaction between each motivation and week was calculated between the within-person centered motivation variable and the uncentered week variable. For Hypothesis 5, we tested metacognitive strategies as a Level-1 predictor of job search effort. Finally, to test multilevel moderated mediation (Hypotheses 6 and 7), we followed Wallace, Butts, Johnson, Stevens, and Smith (in press) and combined multilevel mediation procedures outlined by Bauer, Preacher, and Gil (2006) and Preacher, Zyphur, and Zhang (2010) to test conditional indirect effects of both forms of motivation on job search effort via metacognitive strategies early and late in the job search process. In doing so, we first tested a 1–1–1 multilevel model (i.e., a multilevel path analysis in which all variables are at Level-1, Preacher et al., 2010) to establish the indirect effects of autonomous and controlled motivation on job search effort and utilized parameter bootstrapping (Preacher & Selig, 2010; Preacher et al., 2010) with a Monte Carlo simulation with 20,000 replications to create our 95% confidence intervals (CI). We then calculated the conditional indirect effects and determined whether the indirect effect was significant at varying stages of the job search process, in addition to calculating whether the indirect effects at these differing stages were significantly different from one another (Preacher, Rucker, & Hayes, 2007).

## Results

Means, standard deviations, and correlations are in Table 1. Interestingly, autonomous and controlled motivations were positively correlated at the within-person level of analysis ($r = .25$,

Table 1
*Means, Standard Deviations, and Correlations*

|  | *Mean* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| Level-1 variables |  |  |  |  |  |  |  |  |  |  |
| 1. Week (0–4) | — | — | — |  |  |  |  |  |  |  |
| 2. Autonomous motivation | 3.23 | .76 | −.22** | (.67) |  |  |  |  |  |  |
| 3. Controlled motivation | 3.68 | .69 | .01 | .25** | (.67) |  |  |  |  |  |
| 4. Perceived job search effort | 2.75 | 1.09 | −.27** | .25** | .03 | (.89) |  |  |  |  |
| 5. Metacognitive strategies | 3.27 | .92 | −.26** | .28** | .09* | .42** | (.82) |  |  |  |
| Level-2 variables |  |  |  |  |  |  |  |  |  |  |
| 6. Grade point average (GPA) | 3.39 | .35 | .12 | −.05 | −.04 | −.07 | .05 | — |  |  |
| 7. Type of job search | .48 | .50 | .01 | .09 | −.06 | −.01 | .06 | −.01 | — |  |
| 8. Gender | .44 | .50 | −.01 | −.13 | −.04 | .04 | −.16* | −.10 | −.07 | — |

*Note.* Level-1 $n = 691$; Level-2 $n = 149$. $SD$ = standard deviation. Average reliability across weeks is along the diagonal. Week was recoded such that Week 1 = 0, Week 2 = 1, Week 3 = 2, Week 4 = 3, and Week 5 = 4. Type of job search was coded such that 0 = full-time job and 1 = full-time internship. Gender was coded such that 0 = female and 1 = male. Level-1 variables were aggregated to Level-2 to conduct correlations with our possible control variables; as a note, these control variables were not modeled when testing our hypotheses, and including these control variables did not alter the conclusions reached in the article.
* $p < .05$.   ** $p < .01$.

$p < .01$) suggesting that, within job search contexts, both motivations may co-occur.

Hypotheses 1 and 2 predicted that autonomous and controlled motivations would decrease and increase, respectively, as the job search progressed. For autonomous motivation, we found a significant linear ($\gamma = -.16$, $p < .001$) and nonlinear effect ($\gamma = .02$, $p < .05$); using formulas from Snijders and Bosker (1999), the linear and curvilinear effects accounted for 3% of the within-person variance in autonomous motivation. To interpret the nonlinear effect, we plotted the growth curve (see Figure 2) and found that autonomous motivation exhibited a general decline as the job search progressed, but plateaued after the midpoint of the job search, yielding partial support for Hypothesis 1. Hypothesis 2 was not supported; the linear ($\gamma = .01$, $ns$) and nonlinear trends ($\gamma = -.002$, $ns$) predicting controlled motivation were not significant.

Hypothesis 3 predicted that the positive relationship between autonomous motivation and metacognitive strategies would decrease as the job search progressed. Moreover, Hypothesis 4 predicted that the negative relationship between controlled motivation and metacognitive strategies would become positive as the job search progressed, suggesting a disordinal interaction. Results are presented in Figure 3. Although we did not hypothesize main effects, autonomous motivation was a significant, positive predictor of metacognitive strategies ($\gamma = .26$, $p < .05$), and controlled motivation was a significant, negative predictor ($\gamma = -.26$, $p < .05$). Counter to Hypothesis 3, autonomous motivation did not interact with the week of the job search when predicting metacognitive strategies ($\gamma = .02$, $ns$). However, we did find a significant interaction between week of the job search and controlled motivation ($\gamma = .15$, $p < .05$). As illustrated in Figure 4, early in the job search, controlled motivation negatively predicted metacognitive strategies (simple slope: $\gamma = -.26$, $t = 2.06$, $p < .05$), whereas late in the job search, controlled motivation was a positive predictor (simple slope: $\gamma = .33$, $t = 2.36$, $p < .05$); the slope was not significant at the midpoint of the job search (simple slope: $\gamma = .04$, $t = .55$, $ns$). Thus, we supported Hypothesis 4's prediction for a disordinal interaction.

Hypothesis 5 predicted that metacognitive strategies would positively predict job search effort. Results are presented in Figure 3. As expected, metacognitive strategies significantly predicted perceived job search effort ($\gamma = .55$, $p < .001$), supporting Hypothesis 5.

Finally, Hypotheses 6 and 7 proposed moderated mediation, such that the indirect effects of autonomous motivation (Hypothesis 6) and controlled motivation (Hypothesis 7) on job search effort would be mediated by metacognitive strategies and vary depending upon the time elapsed during the job search. Given that the interaction between autonomous motivation and week of the job search was nonsignificant, we could not test Hypothesis 6. However, we did test whether autonomous motivation alone exhibited an indirect effect on job search effort via metacognitive strategies. The indirect effect was significant (coefficient: .14, $SE = .06$, $t = 2.39$, $p < .05$) with a Monte Carlo parametric bootstrap 95% CI [.026, .271], providing evidence that autonomous motivation influences job search effort indirectly through improved strategizing about the job search. In testing Hypothesis 7, we first considered whether controlled motivation exhibited an indirect effect on job search effort alone, and found a significant indirect effect (coefficient: −.14, $SE = .07$, $t = -2.03$, $p < .05$) and a Monte Carlo bootstrap 95% CI [−.282, −.004].[4] Next, we tested our conditional indirect effects, finding a significant positive indirect effect of controlled motivation on job search effort late in the job search (coefficient: .13, $SE = .06$, $t = 2.13$, $p < .05$) and a marginal negative indirect effect early in the job search (coefficient: −.10, $SE = .06$, $t = -1.77$, $p = .076$). Moreover, the indirect effects early and late in the job search were significantly different from each other (coefficient: −.23, $SE = .09$, $t = 2.44$, $p < .05$). Taken together, our results supported Hypothesis 7. In total, our predictors accounted for 10% of the within-person variance in metacognitive strategies, and 30% of the within-person variance in perceived job search effort.

## Discussion

Researchers have stated that the job search is a dynamic, self-regulated process (Barber et al., 1994; Kanfer et al., 2001; Wanberg et al., 2012, 2010) and have begun to delve into the importance of motivation during job search (Côté et al., 2006; Kanfer et al., 2001; Wanberg et al., 1999). Yet, little work has considered the within-person dynamics associated with motivation, metacognitive strategies, and effort during the job search. We integrated SDT (Deci & Ryan, 1985, 2000) with the sequential job search model (Barber et al., 1994) and attentional focus model of time pressure (Karau & Kelly, 1992) to assess how autonomous and controlled motivations changed during the job search. Moreover, we tested a moderated mediation model in which motivation influenced job search effort via metacognitive strategies differentially depending upon the time elapsed in the search. Extending work on how job search processes evolve over time (e.g., Barber et al., 1994; Lopez-Kidwell et al., 2013), our results contribute to the literature by
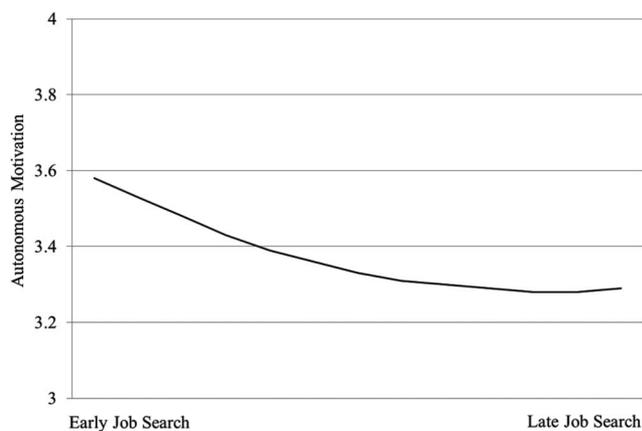


*Figure 2.* Growth curve model of autonomous motivation across the job search. Note: Week of job search was operationalized such that Week 1 (coded 0) = early job search, and Week 5 (coded 4) = late job search.

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[4] Following recommendations by Tofighi, West, and MacKinnon (2013), given that the covariance was nonsignificant between the random slopes in both our 1-1–1 mediation tests ($\tau = -.02$ and .01, $ns$, for the autonomous and controlled motivation 1-1–1 models, respectively), we did not model its influence on our indirect effects.
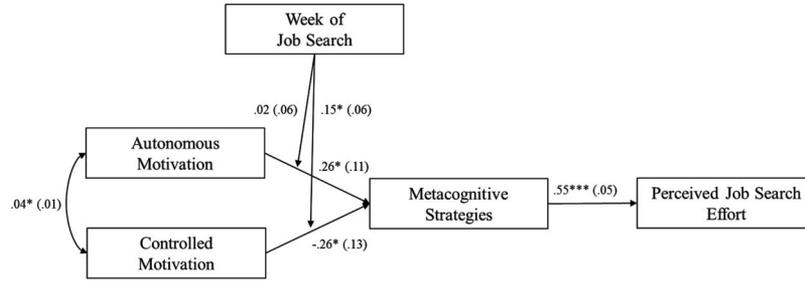
*Figure 3.* Results for Hypotheses 3–5. Note: All analyses were conducted at Level-1 ($n = 691$). Values in parentheses are standard errors. Week of job search was operationalized such that Week 1 (coded 0) = early job search, Week 3 (coded 2) = middle job search, and Week 5 (coded 4) = late job search. We also modeled the relationship between week of job search and metacognitive strategies, as well as the direct effects of both forms of motivation, week of job search, and the interaction terms on perceived job search effort. For presentation parsimony, these results are not reported, but are available from the authors upon request. * $p < .05$. *** $p < .001$.

demonstrating that autonomous motivation declines over the course of the job search, and controlled motivation remains stable. Moreover, the positive effect of autonomous motivation on effort operated consistently via metacognitive strategies, whereas the relation of controlled motivation on effort through metacognitive strategies changed as time elapsed.

## Theoretical Contributions

Our most striking result is the positive impact controlled motivation has on job search effort through its influence on metacognitive strategies as the search progresses. This counters past views that controlled motivation is detrimental to self-regulated processes (Deci & Ryan, 2000) and null findings with job search intensity at the person-level (Vansteenkiste et al., 2004a). Our results are consistent with the idea that time pressure increases as the job search progresses and draws closer to an end (Kelly &

Loving, 2004). These results also fit with the idea that activities that are stressful—such as finding a job—require external motivation (Gagné & Deci, 2005) and that controlled forms of motivation can positively affect performance-related processes in some work-related contexts (Eisenberger et al., 1999). In regards to the job search, as time elapses and individuals experience heightened levels of pressure from the self and/or the external environment (Lopez-Kidwell et al., 2013), individuals are less likely to find the job search enjoyable, adding new emphasis and potential importance for controlled motivation in relation to job search processes. Building from our work, research could benefit from identifying specific events at different stages in the job search process (e.g., interviewing, negotiating one's salary) to see if controlled motivation is more or less beneficial during specific circumstances. Moreover, future work should consider whether specific external events involved in the job search process (e.g., receiving a rejec-
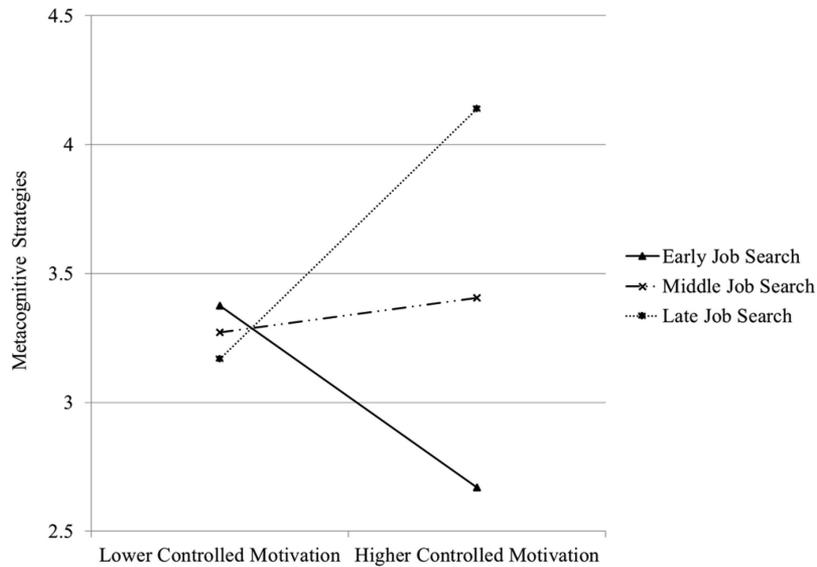


*Figure 4.* The relationship between controlled motivation and week predicting metacognitive strategies. Note: Week of job search was operationalized such that Week 1 (coded 0) = early job search, Week 3 (coded 2) = middle job search, and Week 5 (coded 4) = late job search.

tion or interview offer) have more or less impact on the experience of controlled motivation and its relation with metacognitive strategies and effort.

Interestingly, the findings for controlled motivation at early stages of the job search process are consistent with SDT, such that early experiences of controlled motivation lead to lower effort exerted through a lower use of self-regulatory activities (e.g., Deci & Ryan, 2000; Gagné & Deci, 2005; Walker et al., 2006). This necessitates future research that explores whether stable individual differences may help mitigate these early stage negative effects. For example, the influence of controlled motivation may depend on job seekers' learning goal orientation (LGO) or performance goal orientation (PGO; DeShon & Gillespie, 2005; Payne, Young-court, & Beaubien, 2007), because people higher in LGO are concerned with increasing task competence and developing new skills, and those higher on PGO tend to be more focused on external cues from the environment in order to prove one's competency (Payne et al., 2007). As such, we may expect that the negative relationship between controlled motivation and job search effort at early stages of the process may be stronger for job seekers with higher PGO who are more sensitive to such external motivational cues and weaker for those with higher LGO. Such findings would be consistent with a recent study by da Motta Veiga and Turban (2014), which found that job seekers who are higher in LGO tend to be more persistent and increase their level of intensity when experiencing higher job search stress.

Our findings for autonomous motivation are also consistent with SDT (Deci & Ryan, 1985, 2000) and past job search research incorporating SDT (Vansteenkiste et al., 2004a), as autonomous motivation was a positive predictor of perceived job search effort via its influence on metacognitive strategies across the entirety of the job search. Although controlled motivation may have its late benefit, those who experience autonomous motivation throughout the entire process are likely to use metacognitive strategies to a greater extent, and ultimately put forth more effort. We did find that levels of autonomous motivation decreased over time, suggesting that although autonomous motivation has its benefits, its experience does not stay consistently elevated. Future research should continue to use within-person designs to see if there is a specific point at which autonomous motivation rebounds (i.e., at the time of a formal offer), or whether there are certain resources—such as social support or resilience (e.g., Gabriel, Diefendorff, & Erickson, 2011)—that allow individuals to maintain autonomous motivation consistently throughout the job search.

Taken together, our findings supported a moderated mediation model showing the evolving influence of self-determined motivation on job search effort through metacognitive strategies. Furthermore, we extended SDT (Deci & Ryan, 1985, 2000) to job search contexts, demonstrating the need for dynamic assessments of autonomous and controlled motivations in studying job search processes. We agree with others (da Motta Veiga & Turban, 2014; Liu et al., 2014; Lopez-Kidwell et al., 2013; Sun et al., 2013; Wanberg et al., 2010) who have emphasized the importance of investigating within-person influences when treating the job search as a self-regulated processes. Thus, we encourage scholars to further examine how changes in motivation influence self-regulated activities and effort at different stages of the job search.

## Practical Implications

Our results suggest that effective coaching and training of autonomous motivation during the job search process—either self-guided or from a career counselor—would be of benefit to job seekers. Similar to Wanberg et al.'s (2012) recommendation for job search strategies to "'pump up' attentional effort for job search activities" (p. 280), our results suggest that job seekers who can maintain autonomous motivation during the job search process will experience higher levels of effort through increased use of metacognitive strategies, potentially enhancing one's likelihood of successfully obtaining a job. Thus, job seekers should be encouraged to understand what motivates them to strategize about their search, and ultimately invest time and energy at different stages of the process. Based on our results, career counselors could develop training programs that would help job seekers understand the differences between autonomous and controlled motivations, and when one can play a more important role than the other in influencing how they strategize about their job search and ultimately invest effort in job seeking.

Our findings also lead to a nuanced recommendation regarding controlled motivation in job search. Although most SDT research suggests that controlled motivation is detrimental for individuals' goal attainment, we find that controlled motivation in late stages of the job search can yield important benefits. It is important to note that previous studies that found a negative relationship between controlled motivation and persistence focused on the between-person level of analysis (e.g., Walker et al., 2006). Our results, however, examined within-person differences in controlled motivation, and suggest that job seekers can be coached to realize that being motivated by external forces can be beneficial as time pressure to find a job increases.

Lastly, although autonomous motivation waned during the job search, our results illustrated that treating the search as enjoyable can offer consistent positive benefits toward one's effort and metacognitive strategies. As such, career counselors should encourage job seekers to discover the positive side of their job search via finding what makes the search fun, or by identifying how finding a job can satisfy individuals' self-set goals and objectives. By doing so, job seekers may have the motivational means to continue persisting through the job search in order to ideally obtain employment. Taken together, we expect that maintaining higher levels of motivation is an effective strategy for employment success, with the caveat that it is important to know what type of motivation leads to better outcomes at what stage of the job search process.

## Limitations and Future Directions

Although we followed prior research that has considered new labor market entrants (e.g., da Motta Veiga & Turban, 2014; Song et al., 2009; Sun et al., 2013; Turban et al., 2013), our sample was comprised of students. However, we focused on understanding basic motivational processes that underlie all job search behaviors across a multitude of job search contexts. Nonetheless, future research should consider a more adult sample to ensure that results generalize, and consider other types of job seekers such as individuals who are searching for their next job (i.e., transitioning between occupations/jobs) or those trying to find a job during long-term unemployment. We also encourage researchers to assess

different industries individuals are trying to enter to see if there are differences in motivational processes contingent upon the competitiveness of the occupation being sought.

Despite our consistency with past methodological protocols in job search research (e.g., Liu et al., 2014) and the fact that we timed our study with a highly active period for new labor market entrants, we only assessed 5 weeks of an individual's job search. Future work should assess individuals across the entire span of their job search (i.e., until they report securing a job) as this may uncover more complexities surrounding autonomous and controlled motivations. However, taking an extended time period approach adds other difficulties such as individuals finding jobs at various times throughout the study and withdrawing from the study at different times. As such, both approaches to studying the job search yield complications. An additional concern is that we did not explicitly ask how many weeks individuals were looking for a job prior to beginning our study. However, we did remove individuals who indicated they were close to obtaining a job to create consistency in experience among our sample of job seekers. Moreover, our results were replicated with the full sample of participants. Thus, although this issue warrants attention, we do not believe it posed a serious threat to our conclusions.

Our focus was on the week-to-week motivational experiences of job seekers and, as such, our focus was not on considering person-level predictors of these patterns. Although we do not view this as a limitation, we do view it as an area for future research. Researchers may consider cross-level predictors of weekly motivations such as trait affect (e.g., Turban et al., 2009), regulatory focus (e.g., Sun et al., 2013), goal orientation (e.g., da Motta Veiga & Turban, 2014), motivation orientations (e.g., Wanberg et al., 2012), and job search self-efficacy (e.g., Liu et al., 2014). As an illustrative example, Sun et al. (2013) found that regulatory focus moderated the within-person relationship between self-efficacy and effort, such that the relation was positive for job seekers with strong prevention focus, and negative for those with strong promotion focus. Thus, cross-level considerations could extend our work on SDT and job search processes.

In addition to cross-level moderators, we encourage future work to assess the influence of job search events on the trajectories of autonomous and controlled motivations. The attentional focus model of time pressure (Karau & Kelly, 1992) and sequential job search model (Barber et al., 1994) highlight that different events—such as rejections, interview invitations, and job offers—can serve as external cues about how the job search is progressing and influence subsequent autonomous and controlled motivations. Although we did not directly assess these events and used time elapsed as a proxy for increased time pressure (which fits with recent findings; Lopez-Kidwell et al., 2013), considering critical job search events would be a fruitful future avenue of work. Relatedly, even though our focus on metacognitive strategies and effort taps into two important processes tied to job search success, we encourage researchers to consider how differences in autonomous and controlled motivations impact job obtainment.

Finally, although we modeled both autonomous and controlled motivations concurrently in our analyses, we encourage future research to examine the interactive effect of autonomous and controlled motivations on various self-regulated outcomes. There is some theorizing embedded within the SDT literature that autonomous and controlled motivations may combine in unique ways

(e.g., Bono & Judge, 2003), but this idea has not received much attention in the literature. Moreover, in a set of exploratory analyses, we did not find a significant interaction between our two sources of motivation.[5] As an alternative to testing interactions, researchers may consider profiles of autonomous and controlled motivations during the job search to determine if there are ideal combinations of motivation that emerge (e.g., Moran et al., 2012).

## Conclusion

To our knowledge, the current study is the first to examine dynamics between different forms of motivation—autonomous and controlled—and the effort job seekers invest during the job search process through their use of metacognitive strategies. We provided a first glimpse into the differing impact motivation has on these critical processes depending upon the time elapsed during the job search. Although autonomous motivation tended to yield benefits across the entire job search, its overall levels declined over time. Moreover, as time elapsed and the goal of securing a job became more proximal, controlled motivation became beneficial for job search processes. Our results suggest that, although the job search may start as fun and games, external pressures and consequences can drive the job search across the finish line.

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[5] We thank an anonymous reviewer for this interesting suggestion.

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