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WHAT MATTERS WHEN: A MULTISTAGE MODEL AND EMPIRICAL EXAMINATION OF JOB SEARCH EFFORT

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Abstract: We develop a multistage self-regulatory perspective on job search effort assuming active job seekers conducting job searches within a job search goal life span. Specifically, we propose that time pressure increases as the goal of finding employment becomes more proximal, while job search uncertainty decreases. Based on these premises, we integrate social comparison theory, control theory, and the attentional focus model of time pressure to hypothesize how various intrapersonal (i.e., prior effort, job search progress) and socio-contextual (i.e., effort put forth by peers in one's social network) factors relate to job seekers' self-regulation of effort at different stages (i.e., preparatory, active-extensive, and active-intensive) of a job search process. In two studies of job seekers, we find that (1) prior job seeker effort is positively related to current effort across stages, (2) average peer job search effort is more strongly and positively related to job seeker effort earlier in job search, and (3) job search progress (i.e., the ratio of interviews to applications in Study 1 and perceived progress in Study 2) is negatively related to job seeker effort later in job search. Theoretical implications and future research directions are discussed.

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WHAT MATTERS WHEN: A MULTISTAGE MODEL AND EMPIRICAL EXAMINATION OF JOB SEARCH EFFORT

ABSTRACT

We develop a multistage self-regulatory perspective on job search effort assuming active job seekers conducting job searches within a job search goal life span. Specifically, we propose that time pressure increases as the goal of finding employment becomes more proximal, while job search uncertainty decreases. Based on these premises, we integrate social comparison theory, control theory, and the attentional focus model of time pressure to hypothesize how various intrapersonal (i.e., prior effort, job search progress) and socio-contextual (i.e., effort put forth by peers in one's social network) factors relate to job seekers' self-regulation of effort at different stages (i.e., preparatory, active-extensive, and active-intensive) of a job search process. In two studies of job seekers, we find that (1) prior job seeker effort is positively related to current effort across stages, (2) average peer job search effort is more strongly and positively related to job seeker effort earlier in job search, and (3) job search progress (i.e., the ratio of interviews to applications in Study 1 and perceived progress in Study 2) is negatively related to job seeker effort later in job search. Theoretical implications and future research directions are discussed.

Keywords: job search goal life span; job search progress; self-regulation of job search effort; social network

Today's workers undertake increasingly more job searches throughout their working years (Kanfer, Wanberg, & Kantrowitz, 2001). The Bureau of Labor Statistics (2010) reports that people search for jobs at least 11 times between the ages of 18 and 44. Job search is a fluid, evolving process characterized by numerous changes often requiring job seekers to make corresponding adjustments. For example, job seekers typically encounter increased vacancy information over the course of a search. Job seekers' information exchange with peer job seekers also likely evolves and may yield new or better perspectives about how to conduct their job searches, or may yield increasingly redundant information. Relatedly, the quality and thus reliability of job search information might change as seekers progress in their searches and encounter consistent or inconsistent information from varied sources (e.g., when five fellow students all agree that a company would be an excellent place to work, versus when members of an unemployment support group provide conflicting views about the current job market). Or, constituents (e.g., parents, significant others) might simply ask more questions of job seekers, intensifying the pressure to gain employment as implicit or explicit job search goal deadlines approach.

Moreover, it is widely assumed that individuals assess the effort and behaviors of others in their social milieu when regulating their own activities (e.g., Festinger, 1954), and that they use feedback regarding personal progress toward goals to adjust effort levels across goal striving processes (Bandura, 1986; Carver, 2003). However, progress information may be less available or of lesser quality earlier in a goal striving process. It is also possible that social comparison information may reach a saturation point as a search progresses, job seekers may become certain enough about their searches that they no longer need to rely as much on social information, or they may simply lack sufficient time to adjust effort levels based on social information.

These are but a few of the changes that may occur throughout a job search, as well as a few of the reasons why job seekers may not rely on commonly assumed sources to self-regulate effort at all stages of job search. Hence, these examples illustrate the possibility that job seekers alter the factors used to self-regulate as they navigate their job searches. The purpose of this paper is to develop a self-regulatory perspective on job search effort and to examine how job seekers shift their focus among different intrapersonal or socio-contextual factors as they adjust their effort levels throughout the job search process. We thus challenge commonly held assumptions about job seeker self-regulation by identifying stages in a job search when job seekers are more or less likely to draw upon varying sources as they self-regulate their searches.

Self-regulatory processes explicate how individuals, having set a goal, will work toward that goal by varying their actions and behaviors based on new information about their progress or the progress of others in their social environment (Carver & Scheier, 2000; Higgins, 1998). Specifically, given the temporal and evolving nature of job search, we theorize that the pressure to attain employment increases throughout the duration of a search, while uncertainty regarding the job search process decreases. Based on changes in these dimensions over time, we propose that factors including prior job search effort (e.g., Ajzen, 2001), socio-contextual influence in the form of peer effort (e.g., Kilduff, 1990), and job search progress (e.g., Wanberg, Zhu & van Hooft, 2010) differentially affect job seeker effort across job search stages. Thus, we focus not on *why* job seekers exert more or less effort in a job search, but on how these various factors relate to job seeker self-regulation of effort *across different stages of a search.* Moreover, by incorporating prior job search effort as a key factor, we are able to examine how socio-contextual influence and job search progress differentially relate to *changes* in job seeker effort across job search stages.

Our approach addresses shortcomings in three research areas related to job search. First, scholars have examined multiple predictors of job search behaviors, and have examined predictors longitudinally, but have not considered potential changes in the significance of these predictors across job search stages. For example, Kanfer et al. (2001) meta-analyzed a multidimensional causal model and found that personality traits, perceived social support, generalized expectancy, self-evaluation, and personal motivation variables were associated with various job search behaviors, which in turn influenced employment outcomes. However, their results do not address possible differences in predictors of effort across different job search stages. For example, they do not reveal whether perceived social support matters more or less at various stages in a job search process. Wanberg and colleagues (2005, 2010, 2012) have taken the lead in developing a longitudinal perspective on job search effort. Wanberg, Glomb, Song, and Sorenson (2005) found, for example, that core self-evaluation (CSE) was positively related to job search intensity over time and that job search intentions mediated the relationship between subjective norms and subsequent job search intensity as well as the relationship between job search self-efficacy and subsequent job search intensity. Wanberg et al. (2010) showed that perceived daily job search progress was negatively related to subsequent vacillations in job search effort over a three-week period. Wanberg et al. (2012) developed a dynamic motivation framework, finding substantial support over a 20-week period linking motivational traits (e.g., approach motivation) to job search intensity via self-regulatory states (e.g., motivation control). Again, these studies have taken a longer-term view of job search, yet they have not considered how various factors relate differently to effort or intensity at different search stages.

Second, some studies have considered how predictors change across job search stages, seeking for example to understand the sources seekers use to discover information about

vacancies (e.g., informal sources such as current employees of target organizations, formal sources such as television advertisements), and how source usage changes over time (e.g., Barber, Daly, Giannantonio, & Phillips, 1994; Saks & Ashforth, 1997, 2000). For example, Barber et al. (1994) found that information sources, information sought, and intensity levels changed over an extended job search cycle. Saks and Ashforth (2000) found that job seekers who had failed to secure employment by graduation increased their active job search behavior, job search intensity, and use of formal sources over the four months following graduation. However, these and similar studies have addressed changes in the sources used to find vacancy information. We focus instead on changes in sources influencing effort self-regulation across job search stages.

Third, most job search research has viewed job search as self-directed in terms of search strategy and behaviors (e.g., Kanfer et. al, 2001; Wanberg et al., 2010), and prior research has generally studied self-regulation as an intrapersonal process (Baumeister et al., 2007). We argue that job seekers' social environment conveys information evoking social comparisons that can greatly influence their effort levels. Kilduff (1990) adopted this approach, showing that job seekers and their network partners tend to interview with similar companies. However, that study did not address job search effort, nor did it take a longitudinal approach, leaving unclear whether similar relationships would hold for job seeker effort levels across job search stages. Other scholars have examined socio-contextual factors such as social support (e.g., Kanfer et al., 2001), or social network tie strength to access job leads (Granovetter, 1973; Montgomery, 1992), and have paid less attention to signals job seekers can acquire from their social environment.

We emphasize that job search is a time-related process involving different dynamics and information sources over stages (Saks & Ashforth, 2000). The proclivity to view job search as an

extended self-regulatory process (Saks, 2005; Wanberg et al., 2012) suggests viewing it as occurring in sequential stages (Barber et al., 1994; Blau, 1993; Boswell et. al, 2012; Rees, 1966; Soelberg, 1967), a perspective we adopt. For example, Boswell et al. (2012: 140) state in regard to unemployed job seekers: "job search is conceptualized as a recursive self-regulated multistage process with reemployment as the goal." Our study contributes to the job search literature by (1) examining self-regulation of effort across multiple job search stages, (2) simultaneously examining three factors thought to relate to job seeker effort, and changes in relative emphasis on these factors across search stages, and (3) advancing a socio-contextual view of job search by considering the influence of informational networks at multiple times. Thus, our temporal perspective allows us to examine how these factors change in their relationships to effort across different search stages and extends the self-regulatory perspective by considering both intrapersonal and social factors related to self-regulation (Fitzsimons & Finkel, 2010).

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Figure 1 illustrates our theoretical model applied to a job search context. This theorizing specifically applies to *active job seekers*: individuals who are proactively seeking employment and who experience a degree of search *urgency*. Boswell et al. (2012) identified three core groups of job seekers: new entrants (i.e., individuals seeking full-time positions for the first time, or students completing full-time educational degrees and entering or reentering the labor force), job losers (i.e., individuals who have lost their previous jobs), and employed job seekers (see also, Bureau of Labor Statistics, 2010; Kanfer et al., 2001). Active job seekers mostly comprise new entrants and job losers. Conversely, currently employed individuals are typically passive job seekers. With some exceptions (e.g., an individual working for a bullying boss), they tend to

experience much less search urgency and to be generally open to, but not necessarily needing, potential opportunities. We chose to empirically focus on new entrants.

Insert Figure 1 about here

Among active job seekers, job search urgency can vary in strength and can stem from various sources. Whatever the strength or source, however, job search urgency implies that job seekers have set explicit or implicit deadlines for achieving employment. For example, a new entrant's deadline might be graduation, but could also be the end of a year of post-graduation service work, or an annual outing with friends who will inevitably discuss jobs and accomplishments. Unemployed individuals might feel urgency and thus set deadlines because of spousal pressure, financial imperatives such as the end of unemployment insurance, or the imminent birth of a child. Whatever the motivation, the key is that active seekers feel a sense of urgency and set implicit or explicit deadlines for finding employment.

Correspondingly, prior research has established that individuals self-regulate their efforts over the course of a *goal life span*, defined as the span of time from generation of the goal until the formal or informal deadline set for accomplishing it (Zimmerman, 2000). We refer to the *job search goal life span* as the span of time from generation of an employment goal until the time at which an individual aspires to be employed (see Figure 1). Within that goal life span, *job search goal proximity* refers to the imminence of the end of the goal life span (Halvari, 1991). Proximal goals are near the end of the life span (e.g., the fifth month of an intended six-month job search). Distal goals have more time or "distance" remaining (e.g., the first month of a six-month process). Moreover, starting points and deadlines can be defined more or less specifically in various contexts. New entrants may see deadlines such as graduation as being more salient; they

may see starting points as less salient but still present (e.g., start of senior year, first job fair announcement). The reverse applies to those who have lost jobs. They will likely see starting points as more salient (e.g., losing a job) and deadlines as less salient but, as explained above, still applicable (e.g., end date for unemployment benefits).

Given that job search has such an extended and dynamic nature, we expect that factors influencing self-regulation toward goal achievement (i.e., finding employment) will vary across stages of a job search goal life span. Specifically, within our self-regulatory framework, we draw on social comparison theory (Festinger, 1954), control theory (Carver & Scheier, 2000; Klein, 1989), and the attentional focus model of time pressure (Karau & Kelly, 1992) to develop hypotheses related to three types of predictors or factors: habituation or routinization of effort (e.g., Ajzen, 2001; Wanberg et al., 2010), socio-contextual influence (e.g., Kilduff, 1990; Van Hoye, van Hooft, & Lievens, 2009), and job search progress information (Wanberg et al., 2010). Acknowledging prior research (e.g., Côté, Saks, & Zikic, 2006; Kanfer et al., 2001; Wanberg et al, 2005) and in keeping with our approach, we also account for key individual differences that prior job search studies have found relevant. Furthermore, consistent with prior job search sequential models (e.g., Barber et al., 1994; Blau, 1993, 1994) and as shown in Figure 1, we conceptualize the goal life span in three stages: (1) *preparatory* (initial planning stage of a job search), (2) *active-extensive* (job seekers proactively engage with many potential employers), and (3*) active-intensive* (job seekers focus on specific potential employers).

Time Pressure and Job Search Uncertainty across a Job Search Goal Life Span

As shown in Figure 1, we propose that two theoretical dimensions, *time pressure* and *job search uncertainty,* combine to yield predictions regarding how prior effort, socio-contextual influence, and job search progress factors relate to effort regulation at various search stages.

These dimensions derive from the temporal nature of job search. First, sequential job search models (e.g., Blau, 1993, 1994; Rees, 1966) imply that as employment goals become more proximal, job seekers feel more time pressure (Barber et al., 1994). Specifically, given that active job seekers feel urgency for achieving their employment goals, they will feel increased pressure as the goal becomes more proximal. We recognize that job seekers may experience different baseline pressure levels, such as new entrants commencing their searches but still several months from graduation (lower baseline pressure) compared with job losers beginning their searches (higher baseline pressure). The key point is that pressure increases from initial baseline levels as active job seekers progress through their job search goal life span.

Second, as job seekers progress in their searches they gain more information about jobs and the search process, so that they learn how to adjust their approaches to generate more positive outcomes (Barber et al., 1994, Saks & Ashforth, 2000). Thus, they will lower their uncertainty regarding the job search process as they gain access to more and better information, including positive or negative feedback regarding the process. Such information may be less available at earlier stages, or it may be available but less valuable. Moreover, job seekers may have different baseline levels of uncertainty, but nevertheless should experience decreased uncertainty as they progress through a job search. For example, we would expect a college student to have greater baseline job search uncertainty than a laid-off worker searching for their fifth job in the same industry. However, uncertainty should show a similar decreasing *trajectory* across a job search goal life span. Whatever the beginning level, uncertainty should decrease as job seekers progress in their searches.

Combining these two dimensions, Figure 1 indicates that earlier in the job search goal life span, job seekers feel less time pressure and more uncertainty. Toward the middle of the goal life

span, they experience only moderate time pressure and uncertainty. Then, toward the end, they have more information to act on and thus have typically decreased uncertainty but increased time pressure. These combinations have implications for the influence of prior effort, socio-contextual influence, and job search progress on job seeker effort at various stages of a job search.

Finally, although we focus on job search, our thesis regarding how factors related to effort change across different stages of goal pursuit could apply to other goal-related contexts. A long-distance race aptly illustrates the criticality of studying predictors of effort at different stages. Throughout a footrace, runners are likely to adjust their efforts depending on the pace of others (e.g., in a "pack"), their desire to mimic their efforts in prior races to achieve a certain per-mile time, or their place in the race requiring them to increase or decrease their pace to finish under a certain overall time or to qualify for the next heat. Thus, through different stages of goal pursuit, individual runners are likely to shift their focus among factors related to their effort level. A researcher studying effort only at the beginning of a race or only toward the end would likely draw vastly different conclusions as to the predictors of runner effort. In a job search context, the potential problem of failing to study job seeker effort across stages is that it could lead to incorrect conclusions about what drives effort. Findings might innocuously be applied to job search regardless of the stage of goal pursuit.

What and When: Factors Influencing Self-Regulation of Job Search Effort

Given this foundation, we turn to developing hypotheses predicting when different factors will impact effort levels in a job search process. We then report the results of two studies designed to test these hypotheses.

***Job search effort routinization*.** Classic theories of behavioral consistency (Funder & Colvin, 1991; Wernimont & Campbell, 1968) suggest that prior, or baseline, effort levels will

affect future effort. That is, job seekers' effort levels at stage $_{t}$ are influenced by their effort levels at stage $_{t-1}$, whereas job seekers also use their prior effort as a baseline for increasing or decreasing effort in the next stage. Wanberg et al. (2010) supported this idea, finding that although some within-person fluctuations occur in job search effort over time, between-person differences occur in overall effort, suggesting some effort stability across time.

This is consistent with self-regulatory mechanisms of behavior routinization or habituation (Ajzen, 2001; Conner & McMillan, 1999; Ouellette & Wood 1998). According to Ajzen (2001: 46): "Based on the assumption that frequent performance of a behavior leads to the formation of a habit, and that habits can influence behavior independent of attitudes and intentions, theorists have proposed that frequency of past behavior be added to our predictive models." Personality, or individual difference characteristics, also likely underlie prior effort effects. Personality is defined as ". . . those characteristics of the person that account for consistent patterns of feeling, thinking, and behaving" (Pervin & John, 2001: 4). Indeed, within-person habituation is likely because individual differences are typically stable (e.g., CSE; Judge, Erez, Bono, & Thoresen, 2003). However, between-person differences in baseline levels of effort should also materialize.

As Figure 1 suggests, during earlier job search stages, uncertainty regarding the process is relatively higher and time pressure is relatively lower. Thus, without access to other quality information to regulate effort levels, and with plentiful time remaining to achieve employment, job seekers look to their initial, or baseline, job search effort levels as accessible and readily available cues for subsequent effort. That is, they continue to expend at least the effort they started with. At later stages, based on the principle of habituation, they will have developed strong habits or routines, creating a level of consistency with prior effort levels (Ajzen, 2001).

This is especially relevant to ongoing job search efforts over time, in which the same search behaviors become routine. Combined, these arguments suggest:

Hypothesis 1: Prior job search effort will be positively related to current job search effort throughout the job search goal life span.

Socio-contextual influence. Early work examining the impact of socio-contextual factors on job search outcomes found that job seekers derived their most useful job search information regarding job opportunities from individuals with whom they were weakly connected (e.g., Granovetter, 1973). Other job search studies have examined socio-contextual influence by including subjective norms (i.e., other's opinions about how much effort a job seeker should be expending) as a predictor of job search intentions and intensity (van Hooft, Born, Taris, & Van der Flier, 2004; Wanberg et al., 2005), social network ties as a predictor of networking behavior and success (Van Hoye et al., 2009), and social support as a coping resource for dealing with job loss (Gowan, Riordan, & Gatewood, 1999). More similar to our approach, Kilduff (1990, 1992) found consistent interview patterns among students with social network ties. However, this work was limited to investigating the role of peers' social influence on job seekers' interview choices at a single time period and thus took neither a self-regulatory nor a dynamic view.

Socio-contextual influence can be any social information a job seeker uses to gauge personal effort levels, such as direct ties to peers through unemployment support groups or student teams. Some job seekers may lack strong social contact with direct peers engaged in job searches, but they are still likely to experience socio-contextual influences. For example, they might read a blog announcing that a record number of job seekers recently attended a local job fair or might overhear strangers talking in an elevator about their job searches. In this study, we focus on *peer effort level* as a particular type of socio-contextual influence.

Social comparison theory (Festinger, 1954) postulates that people to whom focal individuals are tied can influence these focal individuals' self-regulation of behavior. Thus we expect that job seekers will tend to adopt job search effort levels similar to those of their network peers. Furthermore, we argue that this effect will be stronger during earlier job search stages, for several reasons. First, as Figure 1 shows, in earlier stages individuals have higher job search uncertainty about, for example, when they should start applying, how hard it will be to generate interviews or secure a job, which companies are hiring, and which will be a good fit. One recent review of social comparison theory suggests that individuals are more prone in situations of uncertainty to look to the behavior of similar others to guide their own behavior (Greenberg, Ashton-James, & Ashkanasy, 2007), and empirical studies have shown that individuals who experience uncertainty also have a heightened desire to learn about the experiences of similar others and to engage in social comparison (c.f., Buunk & Gibbons, 2007). Second, social ties serve as conduits for diffusing ideas, attitudes, and behaviors (Borgatti & Foster, 2003; Borgatti, Mehra, Brass, & Labianca, 2009). Thus, under conditions of uncertainty regarding appropriateness of behavior or opinion, individuals will look to similar, referent others to gauge their own behaviors. Within our context, job seekers can deal with uncertainty by mimicking peers' effort levels.

Third, in earlier stages, time pressure is relatively lower; plentiful opportunities remain to exchange valuable information with peers and to act on such information in regulating effort levels. During later job search stages, however, as the employment goal becomes more proximal, time pressure increases and socio-contextual influences should relate less strongly to effort levels. According to the attentional focus model (Karau & Kelly, 1992; Kelly & Karau 1999), as time pressure increases to make decisions or complete goals, individuals narrow their attentional

focus to restrict the amount of information they consider for self-regulating, focusing more acutely on limited and relevant information (Kelly & Loving, 2004). Several studies have supported the prediction that cognitive resource allocations diminish or narrow as pressure increases (e.g., Karau & Kelly, 1992; Kelly, Jackson, & Hutson-Comeaux, 1997; Kelly & Karau, 1999; Parks & Cowlin, 1995). Kelly and Loving (2004) further concluded that individuals under time pressure filter out socio-contextual information to a greater degree. For example, a job seeker may discover during the active-intensive job search stage that other job seekers have been attending professional networking events on weekends. At this stage, even armed with this information, the seeker has little opportunity to mimic these other seekers and might therefore disregard the information. Correspondingly, research has suggested that increased stress and anxiety will cause job seekers to decrease their use of informal sources of information (Barber et al., 1994), which might include socio-contextual cues. Based on this cumulative logic, we propose:

Hypothesis 2: Peer job search effort will be positively related to individual job search effort; however, this effect will be stronger earlier in the job search goal life span.

Job search progress. We turn next to proposing effects of feedback that job seekers receive about their personal progress toward securing employment. In keeping with a self-regulatory perspective, adjustments to job search effort from one stage to the next are thought to depend partly on prior feedback or perceptions of one' s own progress (Bandura, 1986). Regarding progress toward goals, researchers have debated the specific mechanisms that prompt individuals to adjust their efforts (e.g., Wanberg et al., 2010). Control theory (Carver, 2003; 2006) suggests that individuals self-regulate effort levels to maintain a "steady state"; when they perceive they are doing well they tend to reduce effort, whereas when they perceive they are

doing poorly, they increase effort to "make up the difference." Conversely, social cognitive theory (e.g., Bandura 1977; 1986) generally suggests that positive feedback portends effort increases, and vice versa; when individuals perceive they are making poor progress, they typically judge themselves as being less able to meet their goals. Within a job search context, Wanberg et al. (2010) cast control theory and social cognitive theory as competing hypotheses, finding stronger support for control theory. Specifically, they showed that unemployed participants' daily job search progress (i.e., their current performance relative to desired performance) was negatively related to their job search effort the following day. Based on this prior evidence, we expect that job seekers will vary effort levels counter to perceived progress.

However, we again propose that this effect will differ across job search stages. At earlier stages, little if any progress feedback is available to evaluate efforts to date, resulting in higher job search uncertainty. That is, progress information is scant and, if available, lower in quality, rendering it unlikely that job seekers will adjust effort based on such feedback. Even with positive preliminary feedback (e.g., three of the first four submitted job applications yield interviews), seekers might hesitate to trust such feedback and will judge it unwise to reduce effort accordingly.

Moreover, lower time pressure implies that plentiful time remains to adjust job search strategies later, so job seekers might be prone to filtering or discounting early-stage negative feedback that they see as preliminary and irrelevant. This limited information is less likely to prompt them to adjust their self-regulatory strategies or increase their efforts (e.g., "Of the four applications I have submitted, no one has called me for an interview, but these organizations probably haven't requested interviews yet"). Consider our long-distance racing analogy again. A typical runner is unlikely to expend excess effort to take the lead early in the race. Rather, at this

earlier stage the runner feels little time pressure and knows that enough time remains to adjust the pace later. Instead, it may be more prudent to gauge effort levels from competitors' effort levels (i.e., socio-contextual influence), or to maintain a steady pace based on efforts expended in past races (i.e., habituation).

Also, the more feedback individuals receive about their goal pursuit, the more able and inclined they are to make informed decisions about adjusting effort levels (Bandura, 1991). Toward the beginning of a job search, seekers often have insufficient information to make adjustments (i.e., higher uncertainty), but as goals become more proximal, self-regulation resulting from progress feedback becomes more likely as certainty increases. Indeed, proximal goals tend to have stronger self-regulatory influences than distal goals (Bandura, 1991; Donovan & Williams, 2003).

As reviewed before, the attentional focus model (Karau & Kelly, 1992) predicts that time pressure narrows the focus to a more restricted range of task-relevant cues; as pressure increases, cognitive resource allocations diminish. In our context, this suggests that job seekers focus on fewer sources (i.e., factors), and more internal sources of information, such as prior effort levels or personal progress feedback, to self-regulate effort. This, combined with reduced uncertainty at later stages, suggests that control theory processes will more closely regulate effort toward the employment goal later in a job search goal life span. As individuals perceive greater success in regulating toward their goal, they will reduce effort, and the reverse will apply when they perceive a lack of progress at later stages.

Hypothesis 3: Job search progress will be negatively related to individual job search effort; however, this effect will be stronger later in the job search goal life span.

STUDY 1: METHOD

Research Setting and Sample

Participants were students in a full-time one-year Masters of Business Administration (MBA) program at a large public university in the United States. In total, the program comprised 78 students, with 61 participating in every wave of the data collection for a response rate of 78%. Of these, we omitted 12 from our analyses because they indicated they were not actively seeking post-graduation employment (e.g., they were applying to graduate school or were already employed). Our sample at each stage therefore consisted of active job seekers; 61% were male; mean age was 24.77 at the beginning of the program; 92% were Caucasian; 4% African American; and 4% "other."

Design and Procedure

Our initial preparations for this study occurred in the year prior to the main study and included structured student focus group interviews and a pilot survey to pre-test the wording of our questions and to estimate response rate. The main purpose of the interviews was to understand the social structure of the MBA program as well as the dynamics of the job search process and cycle times for typical MBA students in the program. Specifically, the focus groups provided information about when, during the school year, MBA students typically begin various stages of their job searches. The three stages we examined—early, intermediate, and late—correspond to Rees's (1966) and Blau's (1994) preparatory, active-extensive, and active-intensive job search stages. We define the preparatory job search stage as the planning stage (Blau, 1994; Soelberg, 1967). During this stage, job seekers seek information, identify job/career alternatives to pursue, and begin gathering potential job leads through various sources such as peers, friends, family, and online resources. At the active-extensive stage the seeker begins initiating contact with a wide array of potential employers from the initial consideration set. This

stage marks the beginning of proactive job search activities such as sending applications, scheduling informational interviews, and establishing contact with employers at job fairs. In the active-intensive stage, the job seeker narrows attention from a wide consideration set of employers to the most desirable and/or attainable employers. This stage is marked by intense focus on active engagement with this narrowed set of potential employers, such as through informal discussions and formal interviews. We structured our study to gather data during each phase, and at a baseline time before the preparatory stage, soon after the students entered the program.

We collected our primary data in the academic year following our pilot study, beginning in July. In the first month of the program we briefed the students on our general research plan, encouraged their continued participation, and gathered basic demographic and individual difference data via an online survey. Data collected at this initial stage included gender, age, race, GMAT score, and core self-evaluation (CSE). We also reviewed biographical information supplied by the students that indicated their major or functional area of interest (e.g., marketing, finance, engineering). We compared our final sample with the remainder of the students on the basis of these six characteristics. Independent samples *t*-tests demonstrated no significant differences in age or CSE. Chi-square tests demonstrated no significant differences in gender, race, or functional area. Those in our final sample did have a lower GMAT score than those not in the sample (t [76] = 2.12, $p < .05$), which is consistent with the fact that several students not in the final sample were applying to graduate schools. Overall these results suggest that response bias is not a significant concern.

Following the initial collection of basic information in July, we collected data four times during the school year: Baseline, Time 1, Time 2, and Time 3. Our interviews revealed that the

early (preparatory) stage typically began three to four months after the MBA program began (Time 1). The intermediate (active-extensive) stage began approximately six months after the program began (Time 2). The late (active-intensive) stage commenced approximately nine months after the program began (Time 3). We structured our data collection waves so that we administered the surveys at about the midpoint of each stage.

At each time point, we gathered data on how many job applications students had submitted up to that point, how many job interviews they had completed, and how much effort they reported expending on their job search since the prior survey. We also collected sociometric data each time to ascertain who, within the MBA cohort, students talked with regarding job search issues. We administered online surveys to participants as a group at a campus computer lab during normal class time.[1]

Measures

Job search effort. We evaluated job search effort with an adapted version of a four-item measure of general job search effort (Blau, 1993), gathering baseline job search effort data in September and again at Times 1-3 as described above. We included the effort that each participant expended in the prior stage of the job search process as a lagged independent variable at the three subsequent job search stages. We prefaced the measure on the first survey with: "Since the MBA program began, I have…" and on subsequent surveys with "Since the last survey (insert date of last survey), I have…" Specific items were, "spent a lot of time looking for jobs," "devoted much effort to looking for jobs," "focused my time and effort on job search activities," and "gave my best effort to find a job." Responses were based on a five-point scale (1

[1] If students missed a survey administration session, we e-mailed them a link to the survey and asked them to complete it in 48 hours. One reported accepting a job as of Time 1, and three reported accepting jobs as of Time 2. We omitted them from subsequent data collections because we assumed they were no longer putting forth job search effort.

= *strongly disagree*, 5 = *strongly agree*). The scale demonstrated good internal consistency at all time periods (coefficient alphas ranged from .93 to .96). We deemed job search effort to be the optimal intensity-based measure for purposes of this study. First, behavioral-based measures (e.g., JSBI; Blau, 1994) comprise items that often require no sustained effort over time (e.g., job seekers typically revise their resumes only once). Second, time-based measures are prone to recall bias (e.g., Engle & Lumpkin, 1992), a particular concern given the extended time between surveys in our study.

Peer job search effort. We operationalized socio-contextual influence as peer job search effort, or the average job search effort levels an individual's job search communication partners were expending. Research has found that communication network ties influence individual attitudes (Rice & Aydin, 1991), so we considered those with whom a job seeker discusses job search issues to be the most relevant source of socio-contextual influence. We gathered social network data at Times 1-3 on the network of job search-related communication by providing each participant a roster of the other students in the MBA program and asking them to "please put a check mark next to people with whom you have talked about post-graduation jobs (e.g., career or job search activities or issues) since [date of previous survey]." From these responses, we calculated peer job search effort with UCINET 6 social network software (Borgatti, Everett, & Freeman, 2002) by averaging the job search effort scores for each respondent's nominated discussion partners. That is, we based peer job search effort on the effort focal individuals' social network ties reported expending since the previous survey, calculated for each focal individual at Times 1-3.

Job search progress. At Times 1-3, we asked participants to provide information about their job search, including: "How many jobs would you say you applied to since the beginning of

the MBA program?" and "How many interviews have you been on since you started the MBA program?" An indicator of job search progress is a job seeker's efficiency in generating job interviews (e.g., Boswell et al., 2012), operationalized in this study as the ratio of the number of interviews obtained to the number of applications submitted. This ratio measures the feedback that each participant was receiving from the job market at a given point in their job search. A larger ratio indicated greater progress (i.e., a larger proportion of job applications yielded initial interview invitations), whereas a lower ratio indicated less progress.

***Control variables*.** Previous work has shown CSE to be an important factor predicting job search intensity (e.g., Wanberg et al., 2005), and meta-analytic results have shown that the individual differences that comprise the CSE construct are significantly related to job search behaviors (Kanfer et al., 2001), so we controlled for this variable.[2] CSE is purported to be a higher-order theoretical construct comprising four core traits: self-esteem, generalized self-efficacy, locus of control, and neuroticism (Judge, Erez, Bono, & Thoresen, 2002). We measured CSE with the 12-item core self-evaluations scale (CSES; Judge et al., 2003). Example items include: "Overall, I am satisfied with myself"; "I determine what will happen in my life." CSE is a trait variable that has shown high test-retest correlations (e.g., Judge et al., 2003). Coefficient alpha was .71.

We also controlled for GMAT because general mental ability likely affects employers' evaluations of applicants, and for age because older job seekers may have greater knowledge of job seeking strategies and may use different information sources to varying degrees (e.g., they may mimic peer efforts less). Next, in our qualitative work before the main study, we learned that hiring cycles for applicants with prior engineering experience or schooling occur slightly

[2] Kanfer et al. (2001) found significant effects for measures of self-esteem, locus of control, and neuroticism. Although generalized self-efficacy was not included in the meta-analysis, significant effects were found for job search self-efficacy.

earlier than for other areas, so we included a dummy control variable indicating whether a study participant was in the engineering field. Finally, we controlled for the size of participants' networks of peers with whom they discussed job search matters. For example, an average of three in terms of peer job search effort in a group of four peers is likely different from an average of three in a group of 25 peers. We obtained this measure by calculating the outdegree centrality for each individual at Times 1-3 using UCINET 6 (Borgatti et al., 2002). Outdegree centrality in this context refers to the total number of peers nominated by the respondent.

STUDY 1: RESULTS AND DISCUSSION

Before testing our formal hypotheses, we sought to establish consistency with prior research (e.g., Côté et al., 2006) by demonstrating the importance of job search effort to successful job searches. Specifically, we analyzed whether an aggregate level of effort across the job search goal life span was associated with proximal (number of interviews) and distal (securing employment) job search outcomes. We used a variance-based partial least squares (PLS) procedure because PLS is robust to small sample sizes and deviations from normality (Henseler, Ringle, & Sinkovics 2009; Ringle, Wende, & Will, 2005). In addition, we used bootstrapping with 500 subsamples (Chin 1998) to generate *t*-values. We then used Mathieu and Taylor's (2006) procedures to test for indirect effects of effort on employment status, via number of interviews. We found that effort was related to number of interviews attained ($\beta = .41$, $t = 4.38$, $p < .01$), and number of interviews attained related to employment status at the end of the job search goal life span ($\beta = .26$, $t = 2.48$, $p < .05$). A significant Sobel test (Sobel = 2.16, $p < .05$; Sobel, 1982), combined with a nonsignificant direct effect, indicates that job search effort relates to attaining employment via number of interviews attained (Mathieu & Taylor, 2006).

To test our hypotheses, we ran separate hierarchical regression models for each job search stage shown in Figure 1, entering control variables in the first step and the three focal independent variables (prior effort, peer effort, job search progress) in the second step. Beta significance levels were assessed at each stage and beta comparison tests (Cohen & Cohen, 1983) conducted to assess support for Hypotheses 2-3 which predicted different effects across stages. Table 1 contains the bivariate correlations for the Study 1 variables, and Table 2 reports the regression results.

Hypothesis 1 states that prior job search effort will be positively related to current job search effort across the goal life span. We find that at Time 1 (preparatory stage) the relationship is positive and significant (Model 1b: $\beta = .59$, $t = 4.77$, $p < .01$); at Time 2 (active-extensive stage), the relationship is also positive but only marginally significant (Model 2b: $\beta = .28$, $t = 1.80$, $p < .10$); at Time 3 (active-intensive stage) the relationship is positive and significant (Model 3b: $\beta = .58$, $t = 2.75$, $p < .01$). Thus, Hypothesis 1 is partially supported overall.

Hypothesis 2 predicts a stronger positive effect of peer job search effort on individuals' job search effort earlier in the job search. Results show a significant positive relationship between peer job search effort and individual job search effort at Time 1 (Model 1b: $\beta = .34$, $t = 2.10$, $p < .05$) and a significant positive relationship at Time 2 (Model 2b: $\beta = .31$, $t = 2.20$, $p < .05$). This relationship, however, is not significant at Time 3 (Model 3b: $\beta = .01$, $t = .03$). We conducted Cohen and Cohen's (1983) beta coefficient comparison procedure to determine whether there were significant differences between peer effort coefficients across the three time points.[3] Already having indication of directionality from the regression results, we used one-tailed tests for these additional analyses. Results revealed that the Times 1 and 2 betas exhibit a

[3] Specifically, we used Cohen and Cohen's (1983) independent samples beta comparison test because, although we sampled from the same student population, none of the regression residuals from the three job search stages were significantly correlated.

marginally significant difference from the Time 3 beta (z = 1.47 and 1.38, respectively, *ps* < .10), whereas the Times 1 and 2 betas are not significantly different (z = .14). This pattern suggests that the effect of peer job search effort is greater at the earlier stages, with marginal statistical differences providing partial support for Hypothesis 2.[4] Hypothesis 3 states that job search progress will have a stronger negative effect on job search effort later in the goal life span. At Time 1 we find no significant relationship between job search progress and job search effort (Model 1b: β = .06, *t* = .48). In accordance with Hypothesis 3, we find this relationship to be negative and significant at Times 2 and 3 (Model 2b: β = -.43, *t* = - 2.68, *p* < .05; and Model 3b: β = -.34, *t* = -2.31, *p* < .05). Beta coefficient comparisons revealed that the Time 1 beta is significantly smaller than the Time 2 and 3 betas (z = 2.41, *p* < .01 and 2.09, *p* < .05, respectively), whereas no significant difference occurs between the Times 2 and 3 betas (z = -.41). This pattern suggests that the effect of job search progress is stronger at later stages, providing support for Hypothesis 3.

Insert Tables 1 and 2 about here

These results provide encouraging support for our three hypotheses and our job search framework. We find that prior job search effort is positively related to current effort across all stages of job search. We also find that peer effort is significantly related to job search effort at the earlier stages, while job search progress is significantly related at later stages.

[4] We ran alternate models in UCINET 6 (Borgatti et al., 2002). Social network ties were weighted according to (1) the strength of the tie and (2) the centrality of the social network contact. In the first model, we weighted the influence of social network contacts according to the strength of tie reported by the focal job seeker (1 = acquaintance, 2 = friend, 3 = close friend). In this model, the effort level of a strongly tied peer was given more weight than the effort level of a weakly tied peer. In the second model, we weighted the social influence of social network contacts according to their centrality in the social network (using indegree centrality, which captures the number of incoming social network nominations). In this model, individuals who had more incoming social network ties were accorded more influence; the effort level of a peer with many incoming ties was given more weight than the effort level of a peer with fewer incoming ties. These analyses, however, did not change the pattern or significance of any of the results.

Although supportive, the results are based on a relatively small sample of individuals who, as members of a highly cohesive cohort, were in a somewhat unique job search context. Moreover, we chose dates for conducting each survey based on information about the goal life span gained through prior qualitative work, but these stages may have been inconsistent with the actual search stages for individual job seekers in our sample. Next, our operationalization of peer effort was restricted to peers in the current MBA class and was based on peer self-reports of effort. However, focal persons' perceptions of peer effort would more closely align with our theorizing. Finally, we cast job search progress as a ratio of interviews to applications, which might obscure information about the quality of companies applied to or interviews attained. Thus, to increase confidence in our results and empirically generalize our theoretical model, we undertook a replication in a second study using different variable operationalizations, another sample, and a different research design (Lykken, 1968; see also, Kacmar, Witt, Zivnuska, & Gully, 2003).

STUDY 2: METHODS

Study 2 addressed Study 1's limitations in four ways. First, we sampled new entrant job seekers who were not part of a structural cohort. Second, we asked respondents to identify their job search stage, rather than assigning the stage ourselves as in Study 1. Third, rather than selecting names from a predefined roster of peers, Study 2 respondents named the peer job seekers with whom they discussed post-graduation jobs. Fourth, respondents self-reported their perceived job search progress and peer job search effort.

Sample and Procedure

Participants were undergraduate students with more than 90 earned credit hours at a large public university in the United States. We sent recruitment emails asking students to participate

in a study of job search behavior that consisted of online surveys at two time points. Respondents who completed one survey were entered into a raffle for several $10 cash prizes, and those who completed both surveys were entered into an additional raffle for several $20 cash prizes. The email stipulated that students were eligible to participate if: "you have looked for, are currently looking for, or anticipate looking for post-graduation employment and you are graduating [by the end of the academic year]." We received 514 responses to the Time 1 survey. We sent the Time 2 survey six weeks later. In total, 188 students responded to both surveys. Of the 188 who responded to both surveys, 97 indicated not having accepted a job offer yet. We could not use 22 of these cases because of missing data, yielding a final sample size of 75.[5] Respondents averaged 23.5 years-old, and 68% were women.

The Time 1 survey assessed demographic variables, personality traits, a baseline measure of job search effort, and perceived job search progress. The Time 2 survey asked respondents to report the stage they had reached in their job search, their job search effort, and job search effort levels of as many as five social network contacts who were also searching for jobs at the time. We compared the 188 students who responded to both surveys with the 326 who responded to Survey 1 only. A chi-square test for gender and independent samples *t*-tests for all other study variables demonstrated no significant differences on any variable with the exception of CSE. Those who participated in both surveys had significantly higher CSE (t [509] = 2.63, $p < .05$). These results suggest little concern about attrition bias.

Measures

[5] To assure confidentiality, an information technology specialist not associated with this study developed syntax to automatically identify and email students who had more than 90 credit hours. Over 5,000 students met the 90 credit hour threshold and received emails; thus our response rate was 3.8%, and 1.5% of the original population was included in the final analysis. However, a significant but immeasurable percentage of the recipients may have failed to meet our stipulations and self-selected out of the survey. Thus, we cannot report the precise response rate of eligible participants at Time 1, but we assume that it was greater than what we report.

Job search effort. We measured each respondent's job search effort with the same four-item scale (Blau, 1993) used in Study 1. A baseline measure of job search effort was taken at Time 1 (α = .95). A second measure was taken at Time 2 (α = .98).

Peer job search effort. This measure of socio-contextual influence was again operationalized as network alters' average amount of job search effort. However, in this study we gathered social network data from each respondent at Time 2 by asking them to "please list up to five of your peers who are currently looking for a job with whom you have talked about post-graduation jobs (e.g., career choices, job search issues, or activities)." We then asked respondents to rate their perceptions of each peer's effort level over the last month by completing an adapted version of Blau's (1993) four-item effort measure. The question stem was "in the last month, this person has…" and the items were: "spent a lot of time looking for jobs," "devoted much effort to looking for jobs," "focused their time and effort on job search activities," and "given their best effort to find a job." Responses were based on a five-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Coefficient alphas ranged from .96 to .98. We calculated the *peer job search effort* variable by averaging the respondent's perceived job search effort scores for all of their named social network contacts.

Job search progress. Following Kulik and Rowland's (1989) approach, we asked job seekers at Time 1 to report their perceived job search progress to date with two items: "overall, I would say I have been successful in my job search activities thus far," and "my job search activities have been rewarded with positive results thus far." Responses were based on a five-point scale (1 = *strongly disagree*, 5 = *strongly agree*), and the coefficient alpha was .95.

Job search stage. Respondents reported their current job search stage as of the Time 2 survey by responding to the item, "Which stage of your job search would you say you are

currently at?" Response options were "early stage (i.e., you have recently started to approach the job search process)," "middle stage (i.e., you have been searching for a job for some time and will continue to do so)," and "late stage (i.e., you are getting very close to the deadline you had in mind to find employment)."

Control variables. As in Study 1, we controlled for CSE with the 12-item CSES (Judge et al., 2002), measured at Time 1 ($\alpha = .89$). As an additional control variable, we included conscientiousness, which prior meta-analytic work on job search has shown to be a robust predictor of job search behavior (Kanfer et al., 2001). Conscientiousness was measured at Time 1 with a four-item scale (Donnellan, Oswald, Baird, & Lucas, 2006) including: "I get chores done right away," and "I often forget to put things back in their proper place" (reverse coded). Coefficient alpha was .71. We also controlled for each respondent's reported grade-point average, their major (dummy variable; 1 = business major; 0 = non-business major), and the size of their social network in terms of the number of peers with whom they reported discussing job search (maximum of five).

STUDY 2: RESULTS AND DISCUSSION

Table 3 contains the bivariate correlations for all Study 2 variables. We conducted hierarchical regression analysis to test Hypothesis 1 and moderated regression analysis (Aiken & West, 1991) to test Hypotheses 2 and 3. We standardized all variables prior to their entry in regression equations, and used one-tailed tests because we had indication of directionality from Study 1.

We tested Hypothesis 1, which states that prior job search effort will be positively related to current job search effort throughout the goal life span, by examining the effect of effort levels reported at Time 1 on effort levels reported at Time 2. As shown in Table 4, results revealed a

positive and significant relationship (Model 2: β = .43, t = 4.09, p < .01). Thus, Hypothesis 1 is supported.

Hypothesis 2 states that peer job search effort will be more strongly related to job search effort earlier in the goal life span. We tested this hypothesis by examining the interaction between peer job search effort and dummy variables representing the early and late job search stages (Aguinis, 2004). As shown in Table 4, the interaction between peer job search effort and early stage job search was nonsignificant (Model 4: β = -.03, t = -.25), but the corresponding interaction with later stage job search was significant (β = -.36, t = -2.47, p < .01). To examine the form of this interaction, we plotted the simple slopes for the relationship between peer effort and individual effort at each of the three job search stages (see Figure 2). Simple slopes tests confirm that earlier in job search, peer effort was significantly and positively related to individual effort (b = .42, t = 1.80, p < .05). Similarly, peer effort was significantly and positively related to individual effort during the middle stage of job search (b = .49, t = 3.10, p < .01). At the later stage, however, peer effort was not significantly related to individual effort (b = -.10, t = -.60). Overall, these results again provide support for Hypothesis 2.

Hypothesis 3 states that job search progress will be more strongly and negatively related to effort later in the goal life span. We tested this hypothesis by examining the interaction between job search progress and the early and late stage dummy variables. The interaction between job search progress and early job search stage was nonsignificant (Table 4, Model 4: β = .06, t = .65), whereas the corresponding interaction with late job search stage was significant (β = -.26, t = -1.88, p < .05). Inspection of the interaction plot (Figure 3) and simple slopes tests indicate a significant and negative relationship between job search progress and individual effort later in the job search goal life span (b = -.35, t = -1.95, p < .05). However, there is no evidence

of a significant relationship between job search progress and effort during the middle stage of job search (b = .10, t = .57) or during the earlier stage (b = .22, t = 1.11). In concert with the results from Study 1, these results provide additional support for Hypothesis 3.

Insert Tables 3 and 4 and Figures 2 and 3 about here

Overall, these results show considerable consistency with those of Study 1. The varied measures, different sample, and altered research design lend further support to our hypotheses and strengthen the validity of our conclusions. We turn now to a discussion of theoretical and practical implications of these findings.

GENERAL DISCUSSION

Summary of Findings and Research Contribution

In this study, we develop a temporal model of job search effort and specifically examine how active job seekers shift their focus among intrapersonal or socio-contextual factors as a means of regulating their effort levels throughout their job search. This study extends previous job search investigations (e.g., Côté et al., 2006; Kanfer et al., 2001; Saks & Ashforth, 1997, 2000; Wanberg et al., 2005; 2010; 2012) by considering several factors that relate to job seeker effort (e.g., Wanberg et al., 2010), but also by showing that individuals change their emphasis on these factors across a goal life span. The study also extends work considering socio-contextual impacts on job search efforts (Kilduff, 1990) by examining peer effort levels across time in concert with other previously studied factors related to job search effort. The results of this study provide considerable and ongoing support for an expanded self-regulatory perspective on job search behavior and for our theoretical model in particular.

Our framework proposes that time pressure increases and job search uncertainty

decreases over the course of a job search. These premises have implications for job search effort over time. First, in accordance with self-regulatory mechanisms of behavior routinization and habituation (Azjen, 2001), prior effort is associated with current effort throughout the goal life span of a job search, although in Study 1 these effects are relatively weaker at the active-extensive stage. Perhaps at that stage uncertainty has decreased enough that job seekers rely less on prior effort levels to gauge their current effort, and perhaps the habituation mechanism has not yet crystallized enough to make current effort as strongly related to prior effort as it appears to be at later stages. At the preparatory stage, however, prior effort explained an additional 30% of the variance in current effort, after entering all other study variables. This is consistent with the premise that when faced with uncertainty, job seekers will gauge current effort at least partly by prior effort.

Second, we find support for our hypothesis linking peer effort levels to job seeker effort. Specifically, in accordance with our expectations, we find peer effort to relate more strongly to job seeker effort earlier in the job search process. As job search uncertainty is likely higher earlier in that process, job seekers appear to rely on socio-contextual information (such as peer effort) to gauge their effort levels. In situations of uncertainty, social comparison theory suggests greater impact of socio-contextual influence (Buunk & Gibbons, 2007; Greenberg et al., 2007), which appears to be true for earlier-stage job seekers in our two studies.

Peers likely serve as particularly salient points of social comparison for determining normative search effort (Festinger, 1954). Indeed, we conducted follow-up informal interviews with a subset of Study 1 participants during the active-extensive (i.e., intermediate) stage. One comment particularly illustrated that job seekers pay attention to their peers' efforts, and that social context is important:

> "When somebody comes [to class] in a suit or is dressed up you know they're going to an interview or if they're not in class one day—because we spend 4 or 5 hours together every day—when somebody's not in class you notice that the seat's empty. Where is so and so? Well, they're not sick, so they're probably at a job interview."

Another participant clearly indicated that peer information about job search was central to his self-regulation of effort. Specifically, he stated:

> "I guess [I feel] kind of happy for them. I don't feel like bad or anything. I guess it kind of makes me think...it helps reinforce that it's time for me to jump on the train and get a job."

Students are typically embedded in social networks where most share a common goal of finding suitable employment by graduation. Indeed, socio-contextual influences such as peer effort are critically important sources of information in a cyclical job search process where many job seekers simultaneously pursue finite employment opportunities, such as in our MBA context. However, our Study 2 participants were situated outside a strong cohort context, so we could test the generalizability of our approach to a weaker social context.

Although we find that peers' effort levels only affect job seekers earlier in the search process, they still may continue discussing job search issues with peers at later stages. Consistent with this conjecture, we conducted a post-hoc analysis with the Study 1 data, calculating the number of job search information ties for each participant at each stage. We found that they increased from 5 to 21 from the preparatory to active-extensive stages. Most pertinent to our perspective, this average remained at 21 at the active-intensive stage. Thus, later in job search, job seekers continue to indicate peer ties with whom they discuss job search information. However, they do not appear to seek *additional* peer information, which is consistent with

increasing time pressure and thus lack of time to act on external information.

Third, we find that job search progress negatively relates to subsequent effort levels, which is consistent with Wanberg et al. (2010) and a general control theory perspective (e.g., Carver & Scheier, 2000; Klein, 1989). However, as predicted, in both studies this relationship materialized only later in the job search. We theorize that these findings are based on the premise that job search uncertainty is higher earlier in the search process so that job seekers find it difficult to rely on their own progress feedback to date. Furthermore, according to the attentional focus model of time pressure (Karau & Kelly, 1992), we expect that as time pressure increases later in the process, job seekers will focus their attention more upon intrapersonal factors such as how well they are progressing, and less on socio-contextual factors such as peer effort (e.g., Kelly & Loving, 2004). This further differentiates the current study from prior cross-sectional job search investigations, or investigations that failed to consider changes in the relative emphasis on different predictors across time. It is notable in Figure 3 that, although non-significant, the relationship between job search progress and effort appears to be positively sloped early in job search. A significantly positive slope would indicate support for social cognitive theory (Bandura, 1986); thus future research should continue to examine the possibility that social cognitive theory is at work earlier in the goal life span, and that control theory is more predictive later.

The absence of CSE effects in both studies and conscientiousness effects in Study 2 is surprising, but also highlights that researchers should examine individual and situational factors in concert to better understand job search behavior, especially in a self-regulatory perspective. Until now, much of the job search literature has assumed that job search is an individual process and that individual differences can explain much of the variance (Kanfer et al., 2001), yet we did

not find this when we examined CSE and conscientiousness in concert with other factors, such as socio-contextual influence (i.e., peer effort). Situation strength arguments (Barrick & Mount, 1993; Mischel, 1977) suggest that dispositions have the strongest effects when situations are less normative. In our samples, social norms may have attenuated individual difference effects that would typically materialize. It is also possible that our relatively small sample sizes diminished statistical power to identify these relationships. Thus, we recommend continued incorporation of individual differences in job search studies – particularly in establishing baseline effort levels. However, we suggest that other relevant intrapersonal and socio-contextual factors be incorporated along with individual differences to explain job search effort regulation.

Finally, we find that all three predicted factors independently relate to effort levels during the active-extensive stage of job search (see Table 2). This is consistent with the conceptual model in Figure 1: at the active-extensive stage, job seekers have typically gathered sufficient information about their job search and the searches of peers in their social environment and thus may have sufficiently reduced uncertainty about the process. Moreover, at this stage, time pressure is likely not yet acute so they can still consider and act on multiple sources of information to regulate their effort. More generally, this result suggests that job seekers use the greatest breadth of self-regulatory resources toward the middle of the goal life span. Future research should continue to examine whether seekers undergo fundamental shifts when they reach what they perceive to be the middle of a job search, drawing for example from the punctuated equilibrium perspective (Gersick, 1988).

Overall, our findings build on prior work that points to the need to study job search phenomena over extended time periods (e.g., Saks & Ashforth, 2000; Wanberg et al., 2012), and to continue to investigate multiple antecedents of job search behaviors simultaneously. By

broadening our view to account for what matters when, we may further refine understanding of job search effort regulation over cyclical searches. Using the three independent variables we identify, we explain an additional 22% to 34% of the variance in effort at different stages (8% to 21% when considering only peer effort and job search progress after accounting for all other variables). If we had adopted a shorter timeframe, such as examining only the active-extensive stage, we would have failed to uncover differences in the factors associated with effort at various stages. Nor would studying only isolated factors such as network ties (Kilduff, 1990) have allowed assessment of relative predictive power across several variables.

Limitations, Practical Implications, and Future Research

We acknowledge certain limitations to our research and theorizing. First, we acknowledge that job search deadlines are not strictly binding (e.g., students may continue searching after graduation). However, we believe that even with unfixed cycles or unapparent or changing deadlines, individuals still set implicit new or updated deadlines (e.g., "sometime next winter" or "by the time my first child is born") and thus re-establish goal life spans. Our model does not fully detail all possibilities, but we believe it lays the groundwork for continued investigations of these issues.

Second, although our pilot data collected prior to Study 1 indicate that students maintain goals of finding jobs by graduation, our approach did not fully account for potential changes in the nature of jobs they would accept (e.g., changes to salary or geographic location subgoals to achieve their overarching employment goal). A third limitation pertains to the theoretical dimensions we propose but do not actually observe. Specifically, we derived the dimensions of increased time pressure and decreased job search uncertainty from established job search models (i.e., sequential stages and learning models; Barber et al., 1994; Blau, 1993) but did not directly

measure them. Future work should strive to do so, as possible alternate explanations for our results have not been entirely ruled out. Indeed, the negative relationship between job search progress and job search effort in later job search stages could be caused by mechanisms other than increased time pressure and reduced uncertainty. For example, job seekers who made substantial progress in later stages may have conducted one or more interviews with targeted companies and were simply awaiting results and thus exerting less effort in later stages.

Fourth, we focus in this paper on very early periods of career development: students in their undergraduate and graduate stages. At this early career stage, job seekers feel much uncertainty and thus may rely more on their social networks for information and comparisons that shape their search outcomes. Yet students are still an important segment of job seekers to study. The National Center for Education Statistics (2010) reported that more than three million students earned post-secondary college degrees during the 2007-2008 school year. Even assuming that not all graduates search for jobs, a great many are engaged in job search each year. However, studies are warranted that attempt to generalize our findings to more experienced job seekers.

Next, our samples are relatively small, and the lower statistical power may have prevented us from detecting certain relationships. However, beta coefficient comparison tests in Study 1 suggest meaningful changes in the effects of peer effort and job search progress over time. Moreover, the results across these two studies provide corroborating support for those effects. Finally, the Study 1 participants had relatively homogeneous cognitive ability. Specifically, the variance on GMAT scores was just over half the national average, so our MBA sample may not reflect the general population of job seekers. For Study 2, we use GPA as a proxy, and find the average to be consistent with current national undergraduate averages

(Rojstaczer & Healy, 2010), suggesting that the Study 2 sample is representative of college-educated job seekers.

One practical implication of our studies is that job seekers as well as employment counselors should be aware that the factors influencing self-regulation of job search effort may vary across job search stages. Therefore, ignoring where job seekers are in their process may lead to inaccurate attributions about why someone is putting forth more or less effort. MBA career centers, for example, could make more visible the efforts of those engaged in job search early in the job search cycle, as others in the cohort may emulate this effort. MBA administrators might even consider using job search communication networks to group students or place them in teams, to maximize useful information exchange among students that might in turn maximize overall cohort job search effort. Later in the job search cycle, MBA administrators should be aware that students who perceive good progress in their searches might reduce effort, and should in turn try to offset this by encouraging students to continue striving for even greater progress (e.g., trying to generate additional offers).

Another implication is that companies might wish to tailor recruitment strategies to mesh with typical job search strategies or information sources that job seekers tend to use at various search stages. For example, given our findings supporting control theory at later job search stages, companies might find it advantageous to make positive overtures toward attractive candidates near the middle of a job search cycle. Earlier, job seekers may discount such feedback. However, toward the middle of a search, such positive feedback could cause attractive candidates to decrease search effort toward competing companies, which might benefit the pursuing company providing such feedback.

Although we believe this study contributes to the growing literature on self-regulation

and job search, opportunities for future research are plentiful, and may include applying our framework to other avenues of inquiry in the job search area. For example, future work could examine socio-contextual peer effects on outcomes other than effort levels. Job search information gleaned from peers may influence salary expectations, job characteristics, organizational culture sought, or breadth of search strategies used, for example. Alternatively, rather than looking at general job search effort, it would be fruitful for future research to examine job seeker effort expended on specific firms, industries, or types of jobs. As previous work on the effects of deadlines would suggest (e.g., Schmidt & DeShon, 2007), job seekers may refocus their effort as a goal becomes more proximal. For example, a seeker may focus on pursuing positions at two companies early in their job search. Later, however, as job search uncertainty is diminished, the seeker may limit their focus on only one company. Although the general level of effort may remain constant, the focus might shift over time. Future work that examines the specific focus of job seeker effort over time will help to clarify this process.

Although we examine the possibility that stronger social ties exert more influence on individual job seekers, strength of ties (i.e., the closeness of the relationship) and network centrality (i.e., having many ties with whom to share job search information) do not alter the effects of peer effort (see footnote 4). Despite these post hoc results, future research should continue to explore tie strength in varied job search contexts. For example, these effects may manifest in larger or less cohesive social networks than we observe in Study 1. Similarly, the effect of tie strength is likely to be stronger in nascent social networks, because the reputations of weak ties are relatively unknown.

Future research could also follow Barber et al.'s (1994) approach by examining how self-regulatory strategies change among job seekers who reach the end of the job search goal life

span without attaining employment. For example, in Study 1 we do not assess whether a given stage is longer or shorter than planned for a given respondent. If job seekers reach their deadline without securing employment but continue to search for similar employment, they are likely to extend the active-intensive stage (e.g., a May graduate might reset the deadline to the end of July). This implies that the factors most relevant at that stage (prior effort, job search progress) should continue to be most influential, yet future research should examine this empirically. Also of interest would be a longer term investigation of employee satisfaction on the job as a function of self-regulatory strategies employed during job search.

Next, we recognize that job seekers may at some point completely reset their deadlines, essentially abandoning their current search and returning to an earlier stage. For example, a student who graduates in May without a job and still has no job in July may choose to do service work abroad and search again a year later. In such cases, our theory should still apply when they resume their search. Saks and Ashforth (2000: 278) state: "According to the sequential model, at the end of the sequential search process job seekers who remain unemployed will 'reopen' their search and return to the early stages of job search." We believe our framework is flexible enough at its core to shift in accord with these unique but entirely possible scenarios.

Although the results of our two studies provide evidence that our model applies to new entrants, future tests should also examine larger samples of unemployed job seekers (i.e., job losers). For example, although we believe that the socio-contextual effects would be similar among unemployed job seekers, such that socio-contextual influences would exert greater effects on effort levels earlier in job search, perhaps these effects would be attenuated in weaker social situations. Whereas job search is ultimately self-directed, research should also examine ways other than peer influence by which the social environment affects job seeker self-regulation.

The influence of bounded life spans for reaching goals is pervasive in organizations, as employees often face salient timeframes or deadlines for completing projects such as the end of a quarter, fiscal year, or product development cycle. Thus, researchers may broadly apply the current framework to other intra- or inter-organizational issues, as our prior racing analogy suggests. For example, recruiters often face deadlines for filling vacancies, and may use different sources of information to regulate effort as deadlines become more proximal. Early recruiter effort may simply adhere to professional or institutional norms, reflecting socio-contextual influences. Later, as recruiters find applicant pools to be inadequate, they may increase efforts to bridge perceived shortfalls, for example by using weekends to pursue social media contacts with promising candidates. At a macro level, organizational decision makers might gather information for strategic decision-making differently depending on whether the organization is in early, intermediate, or late stages of an acquisition process. We encourage researchers to build on our attempts to adopt a temporal lens (Ancona, Okhuysen, & Perlow, 2001) to study goal pursuits longitudinally, understanding that antecedents of effort may change across stages of a goal life span.

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TABLE 1

STUDY 1: CORRELATIONS AND DESCRIPTIVE STATISTICS

	N	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Baseline Effort	49	2.82	0.93	-																			
2. Time 1 Effort	48	3.01	0.98	0.57**	-																		
3. Time 2 Effort	48	3.28	1.03	0.43**	0.32*	-																	
4. Time 3 Effort	45	3.94	1.03	0.37*	0.27	0.63**	-																
5. Core Self-Evaluation	49	3.85	0.40	0.07	0.01	-0.03	0.05	-															
6. Time 1 Job Search Progress	49	0.40	0.45	0.03	0.12	-0.07	0.07	0.00	-														
7. Time 2 Job Search Progress	40	0.15	0.22	0.07	0.26	-0.18	0.11	-0.33*	0.66**	-													
8. Time 3 Job Search Progress	41	0.15	0.18	-0.20	0.02	-0.13	-0.40*	-0.12	0.08	0.14	-												
9. Time 1 Peer Job Search Effort	49	2.17	1.49	-0.19	-0.02	-0.09	0.15	0.07	0.19	0.28	-0.10	-											
10. Time 2 Peer Job Search Effort	49	3.23	0.57	-0.13	-0.13	0.14	0.02	-0.06	0.13	0.05	-0.10	-0.14	-										
11. Time 3 Peer Job Search Effort	49	4.04	0.23	-0.07	-0.04	-0.12	-0.30*	-0.28	-0.05	-0.02	-0.02	-0.21	0.14	-									
12. Major (0 = non-engineer, 1 = engineer)	49	0.06	0.24	0.19	0.31*	0.29*	0.08	0.22	-0.17	-0.14	0.02	-0.04	-0.06	-0.13	-								
13. GMAT Score (Standardized)	49	0.00	1.00	-0.10	0.04	-0.19	-0.17	0.15	-0.10	-0.39*	-0.07	-0.01	-0.17	-0.09	0.12	-							
14. Age (in years)	49	24.77	4.33	-0.11	-0.01	-0.06	-0.12	-0.15	0.03	0.11	0.22	0.04	-0.08	-0.12	0.03	0.03	-						
15. Time 1 Social Network Size	49	4.92	4.82	-0.02	-0.17	-0.14	0.04	0.14	-0.04	0.02	-0.07	0.64**	-0.29*	-0.19	0.11	-0.07	-0.08	-					
16. Time 2 Social Network Size	49	20.61	18.08	0.17	0.16	0.15	0.10	0.26	0.04	-0.05	-0.11	0.05	0.07	-0.40*	0.04	0.20	0.26	0.11	-				
17. Time 3 Social Network Size	49	21.10	16.26	0.16	0.25	0.27	0.25	0.33*	0.19	0.14	-0.08	0.23	-0.03	-0.18	0.42**	-0.08	0.18	0.21	0.52**	-			
18. Total Number of Applications Submitted	42	48.60	78.57	0.13	-0.01	0.36*	0.34*	-0.02	-0.27	-0.26	-0.34*	0.06	0.04	-0.31*	0.12	-0.03	0.10	-0.06	0.10	-0.02	-		
19. Total Number of Interviews Conducted	42	3.10	2.55	0.47**	0.39*	0.34*	0.11	-0.07	0.07	0.09	0.38*	-0.28	-0.05	0.14	0.25	-0.16	-0.13	-0.23	-0.02	0.08	0.07	-	
20. Employment Status (0 = not employed by graduation, 1 = employed by graduation)	49	0.29	0.46	0.07	0.11	0.17	0.18	-0.21	-0.12	0.17	0.04	-0.14	0.16	0.03	0.03	-0.19	-0.24	-0.17	0.01	-0.02	0.01	0.30*	-

** $p < .01$ (2-tailed).

* $p < .05$ (2-tailed).

TABLE 2

STUDY 1: REGRESSION RESULTS

Variable	Job Search Effort					
	(Time 1)		(Time 2)		(Time 3)	
	Model 1a	Model 1b	Model 2a	Model 2b	Model 3a	Model 3b
Major	0.34*	0.27*	0.36*	0.28†	0.01	-0.09
GMAT Score	-0.01	0.06	-0.30†	-0.38*	-0.19	-0.07
Age	0.01	0.09	-0.22	-0.07	-0.23	0.08
Social Network Size	-0.20	-0.40*	0.29	0.23	0.23	-0.04
Core Self-Evaluation	-0.04	-0.06	-0.18	-0.22	-0.11	0.03
Job Search Effort (T-1)		0.59**		0.28†		0.58**
Job Search Progress		0.06		-0.43*		-0.34*
Peer Job Search Effort		0.34*		0.31*		0.01
R-Square	0.14	0.48	0.24	0.46	0.14	0.46
ΔR-Square		0.34**		0.22*		0.32**
Adjusted R-square	0.03	0.38	0.13	0.32	-0.01	0.31

Note. Standardized coefficients are reported. ΔR-Square indicates changes from the previous model. For Time 1, $n = 48$. For Time 2, $n = 40$. For Time 3, $n = 37$.

† $p < .10$ (2-tailed).

* $p < .05$ (2-tailed).

** $p < .01$ (2-tailed).

TABLE 3

STUDY 2: CORRELATIONS AND DESCRIPTIVE STATISTICS

	N	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Major[a] (0 = non-business, 1 = business)	75	0.36	0.48	-										
2. Grade Point Average[a]	75	3.20	0.45	0.23*	-									
3. Social Network Size[b]	75	2.71	1.69	0.13	0.15	-								
4. Conscientiousness[a]	75	3.84	0.83	0.06	0.13	0.10	-							
5. Core Self Evaluation[a]	75	3.80	0.63	-0.04	0.08	0.02	0.25*	-						
6. Job Search Effort[a]	75	3.21	1.05	0.16	0.19	0.14	0.10	0.03	-					
7. Job Search Progress[a]	75	3.43	1.04	-0.03	0.17	-0.14	-0.15	0.29*	0.18	-				
8. Peer Job Search Effort[b]	75	3.57	0.88	0.05	-0.06	-0.02	0.10	-0.12	0.11	-0.07	-			
9. Job Search Early Stage Dummy[b]	75	-	-	-0.08	-0.18	-0.11	0.07	0.00	-0.42**	-0.19	-0.08	-		
10. Job Search Late Stage Dummy[b]	75	-	-	0.07	0.34**	0.01	0.19	0.03	0.36**	0.28*	0.23	-0.35**	-	
11. Job Search Effort[b]	75	3.34	1.19	0.17	0.19	0.09	0.21	0.08	0.50**	0.06	0.30**	-0.32**	0.27*	-

** $p < .01$ (2-tailed).

* $p < .05$ (2-tailed).

[a] Measured at Time 1

[b] Measured at Time 2

TABLE 4

STUDY 2: REGRESSION RESULTS

Variable	Job Search Effort[b]			
	Model 1	Model 2	Model 3	Model 4
Control Variables				
Major (0 = non-business, 1 = business)	0.13	0.06	0.06	0.11
Grade Point Average	0.14	0.10	0.09	0.15
Social Network Size	0.03	-0.01	-0.02	-0.07
Conscientiousness	0.18	0.11	0.13	0.17
Core Self-Evaluation	0.03	0.08	0.08	0.13
Independent Variables				
Job Search Effort[a]		0.43**	0.38**	0.40**
Job Search Progress		-0.02	-0.03	0.10
Peer Job Search Effort		0.25**	0.24*	0.49**
Moderator Variables[c]				
Job Search Early Stage Dummy			-0.15	-0.12
Job Search Late Stage Dummy			-0.02	0.05
Interactions				
Job Search Progress X Job Search Early Stage Dummy				0.06
Job Search Progress X Job Search Late Stage Dummy				-0.26*
Peer Job Search Effort X Job Search Early Stage Dummy				-0.03
Peer Job Search Effort X Job Search Late Stage Dummy				-0.36**
R-Square	0.09	0.35	0.36	0.46
ΔR-Square		0.26**	0.02	0.10*
Adjusted R-square	0.03	0.27	0.26	0.33

Note. Standardized coefficients are reported. ΔR-Square indicates changes from the previous model.
n = 75; with 20, 36, and 19 indicating being in the early, intermediate, or late stages of job search, respectively.

* $p < .05$ (1-tailed).
** $p < .01$ (1-tailed).

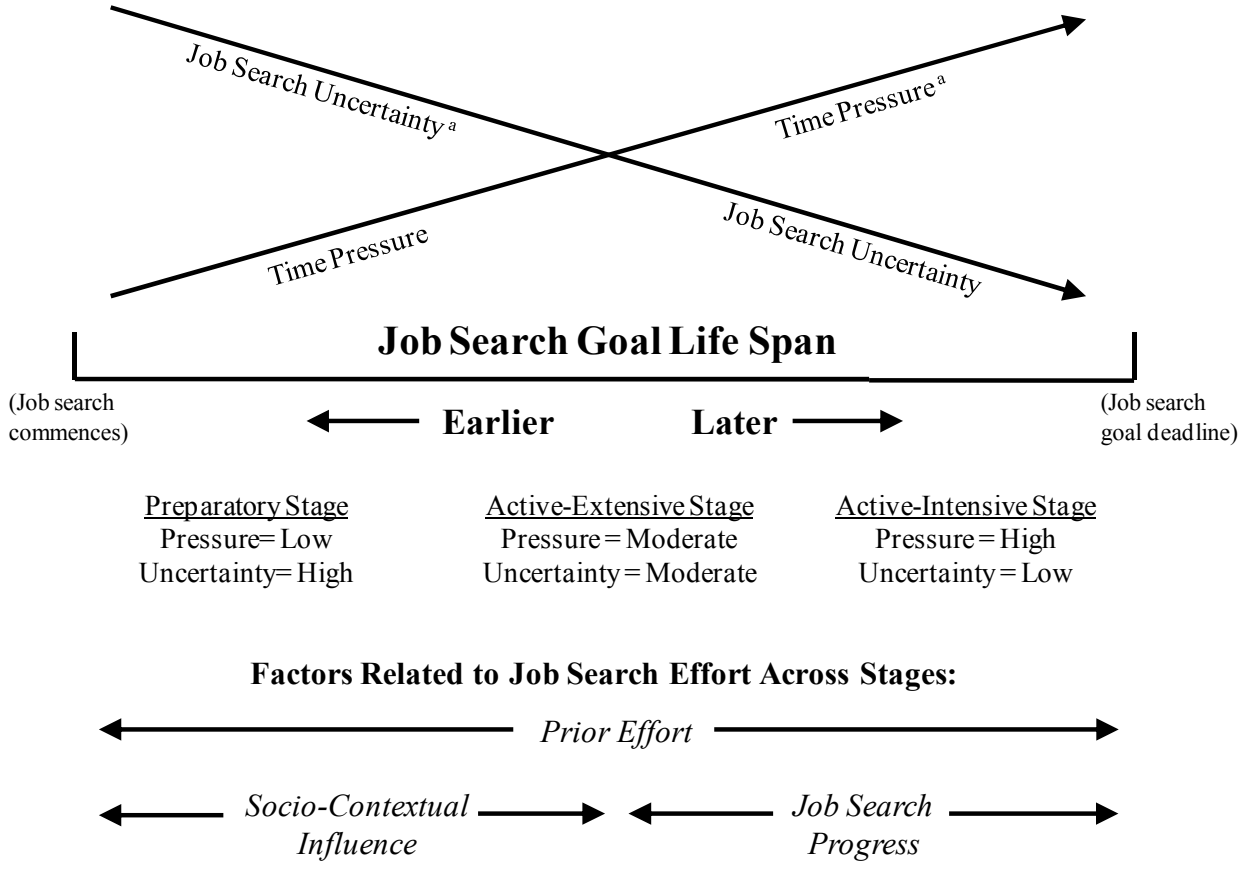
[a] Measured at Time 1

[b] Measured at Time 2

[c] Job Search Intermediate Stage = comparison group

FIGURE 1

JOB SEARCH UNCERTAINTY, TIME PRESSURE, AND FACTORS RELATED TO EFFORT ACROSS STAGES OF A JOB SEARCH GOAL LIFE SPAN



[a] Theoretical dimensions. These were not observed.

FIGURE 2

STUDY 2: INTERACTION BETWEEN PEER JOB SEARCH EFFORT AND JOB SEARCH STAGE

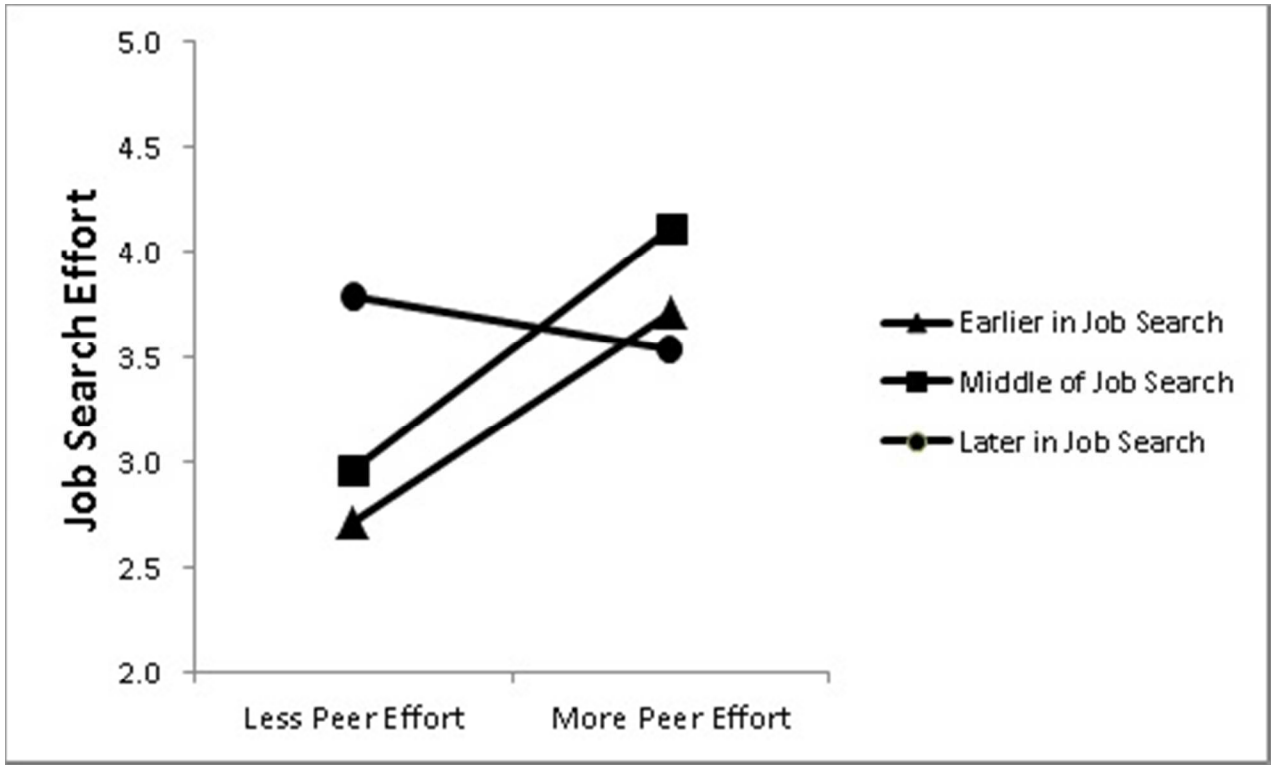
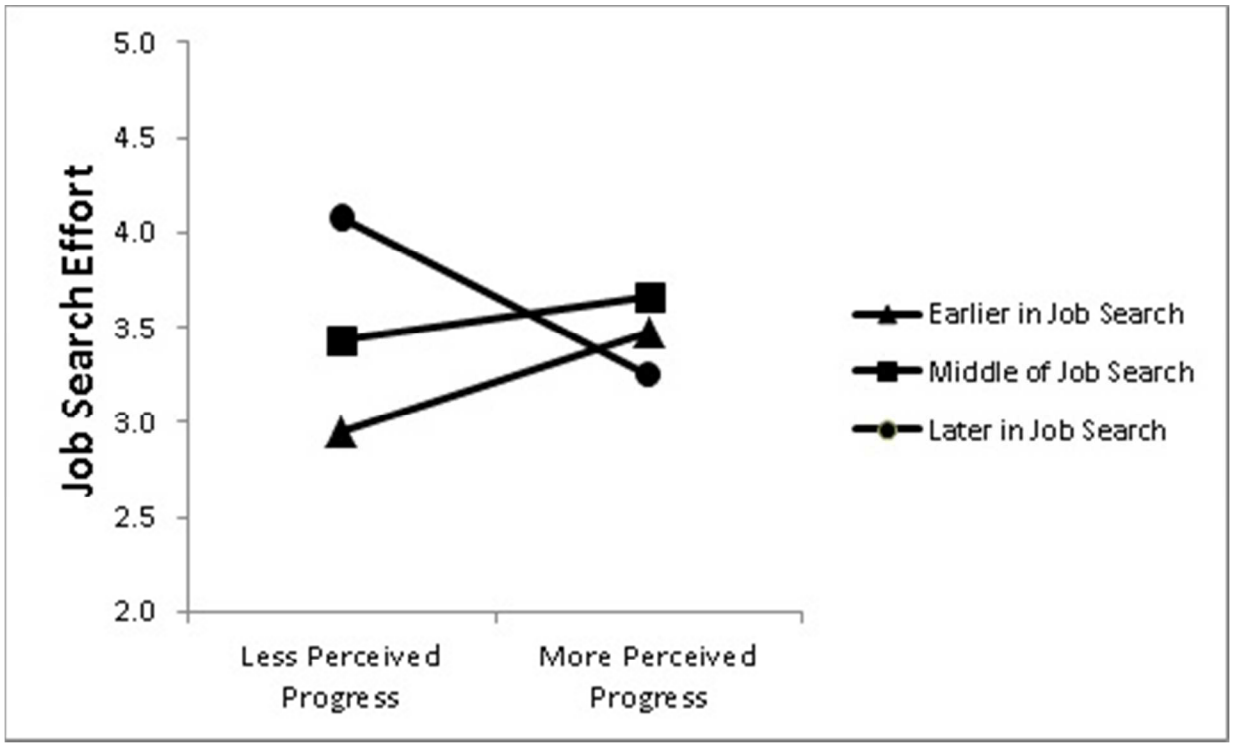


FIGURE 3

STUDY 2: INTERACTION BETWEEN JOB SEARCH PROGRESS AND JOB SEARCH STAGE



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