

Detrimental Relations of Maximization with Academic and Career Attitudes

Abstract

Maximization refers to a decision-making style that involves seeking the single best option when making a choice, which is generally dysfunctional because people are limited in their ability to rationally evaluate all options and identify the single best outcome. The vocational consequences of maximization are examined in two samples, college students and working adults. After controlling for trait perfectionistic striving, highly-maximizing students reported lower satisfaction and perceived fit with their majors, higher academic turnover cognitions, and lower career decision self-efficacy (Study 1). Similarly, highly-maximizing adults reported less satisfaction and perceived fit with their jobs, higher employment turnover cognitions, and less satisfaction with the progression of their careers (Study 2). In both studies, the relations of maximization and these outcomes were mediated by negative affect, pointing to feelings of regret and frustration as a mechanism that drives these negative appraisals. Implications for practice and directions for future research are discussed.

Keywords

Career decision-making; decision styles; job attitudes; satisfaction; person-job fit; turnover intentions; negative affect

Detrimental Relations of Maximization with Academic and Career Attitudes

In the judgment and decision-making literature, maximizing and satisficing represent opposite ends of a continuum of strategies that people use when they approach the process of making a choice. As originally described by Simon (1955), maximizing involves exhaustively evaluating all possible choices and selecting the single best option. In contrast, satisficing involves choosing the first viable option that crosses the threshold of acceptability without an exhaustive search. For example, when faced with a decision like selecting a restaurant for dinner, both maximizers (i.e., those who fall on the maximization end of the continuum) and satisficers (i.e., those who fall on the satisficing end of the continuum) will first consider the minimum criteria that must be met for a restaurant option to be viable (e.g., price, location, type of food, etc.). When subsequently evaluating the restaurant options, satisficers will select the first option suggested that meets these criteria. Maximizers, in contrast, will go an extra step; they will identify every restaurant that meets their criteria, and then attempt to identify the *best* option among the pool of viable options.

Intuitively, one might expect that highly-maximizing people would be happier with their decisions and would attain better outcomes than satisficers due to their careful evaluation of the available options prior to making a choice. Research suggests, however, that the reverse is paradoxically true; people high in maximization tend to invest more resources (time, money, cognition) when making decisions across contexts and are ultimately less satisfied with their decisions when compared to those low in maximization (Dar-Nimrod, Rawn, Lehman, & Schwartz, 2009; Iyengar, Wells, & Schwartz, 2006; Larsen & McKibban, 2008; Parker, de Bruin, & Fischhoff, 2007; Schwartz, Ward, Monterosso, Lyubomirsky, White, & Lehman, 2002). These findings are consistent with Simon's (1955) landmark proposition that people

possess bounded rationality and lack the ability to carefully evaluate all possible options when making a decision. Maximizers are thereby prone to miss their most optimal choices and consequently experience regret despite their careful evaluations. Satisficers, in contrast, make acceptable choices that meet their needs and move on without dwelling on these missed opportunities (e.g., Iyenger et al., 2006).

Despite increased interest in career decision-making styles and profiles among vocational psychologists (e.g., Gati, Landman, Davidovitch, Asulin-Peretz, & Gadassi, 2010), maximization has received very little attention in previous research on career choices and attitudes (Paivandy, Bullock, Reardon, & Kelly, 2008; van Vianen, De Pater, & Preenen, 2009). This is an important oversight given that maximizers may have considerably more trouble making career choices and may later feel less satisfied with their career outcomes relative to satisficers. Some initial support for this idea was reported by Paivandy et al., who found that maximization was associated with negative career thoughts among a sample of college students.

Our objective was to extend our understanding of the implications of maximizing attitudes on several vocational outcomes. First, we examined the vocational consequences of maximization in two populations (i.e., college students and working adults) to demonstrate parallel, replicable results. Second, we tested negative emotions as a mediator of the relations between maximization and vocational criteria. Specifically, we expected that maximizers are prone to experience negative feelings like regret, frustration, and anger in the wake of sub-optimal decisions and that these feelings are the psychological mechanism that result in the lower self-efficacy and negative attitudes reported by maximizers at school and work. Lastly, we tested these ideas while controlling for the effects of perfectionism, a related individual difference that has received more attention from vocational psychologists (e.g., Page, Bruch, & Haase, 2008), to

demonstrate that maximization has unique effects on vocational outcomes beyond those established in previous research.

Maximization, Vocational Criteria, and Negative Emotions

Research on maximizing and satisficing is rooted in Simon's (1955) challenges to rational choice theory (Hargreaves-Heap, 1989), which proposed that people make calculated decisions based on a full understanding of all of their available options to maximize personal utility. Simon (1955, 1957) pointed out, however, that true maximization is generally impossible and that people instead operate under conditions of *bounded rationality* in which they have limited information and decision-making abilities. Individuals who attempt to maximize when presented with a variety of decision options are therefore likely to experience lowered well-being (Schwartz, 2000) and negative emotions (Schwartz et al., 2002). This has been demonstrated to be particularly true in domains in which individuals are faced with an enormous number of decision options (Iyengar & Lepper, 2000), such as career decision-making. Indeed, identifying the single most "optimal" career for oneself out of all potential options is virtually impossible (van Vianen et al., 2009).

Given the ongoing global recession and poor employment outlook in the United States, it seems particularly important to gain a more thorough understanding of maximization within vocational decision-making. Although "ideal" jobs may be less accessible in the current economic context, data indicate that recent graduates have nevertheless maintained high expectations about the quality of their forthcoming jobs (De Hauw & De Vos, 2010). According to Simon's (1955) conceptualization of maximization and results from more recent empirical research (e.g., Parker et al., 2007; Schwartz, 2000; Schwartz et al., 2002), maximizers are likely to be dissatisfied even with "good" choices if they perceive that a "better" choice could have

been made and acquired. Indeed, several major news outlets including the *New York Times* and *National Public Radio* (NPR) have published articles related to the impact of the ongoing economic crisis on job seekers. For example, a recent article highlighted the potentially-detrimental outcomes of a maximizing mentality in terms of the continual feeling of “failure” experienced by people who are unable to attain their ideal job (NPR, 2011). It therefore seems important to gain a more thorough understanding of the relations of maximization to a variety of attitudes and cognitions related to career decision-making.

Very few studies have examined these issues. For example, Iyengar et al. (2006) focused on maximizing tendencies among college seniors who were searching for jobs. They found that maximizing students acquired jobs with higher pay, but that they felt worse during the job search process and were less satisfied with the job that they attained. In a related study, Paivandy et al. (2006) studied maximization among undergraduates enrolled in a career development course and found that maximizing students reported more negative career thoughts and confusion about career decisions. Other authors have recognized the theoretical importance of maximization to vocational psychology (e.g., Larsen & McKibban, 2008; Sauermann, 2005; van Vianden et al., 2009), but empirical research on this topic is quite limited.

The Present Study

In this article, we extend this growing body of research to examine maximization in both academic and career contexts. In Study 1, we examined the consequences of maximization among college students with respect to their career decision self-efficacy (CDSE; Betz, Klein, & Taylor, 1996), perceived satisfaction and need-supplies fit with their academic major, and academic turnover cognitions. In Study 2, we evaluated the consequences of maximization on

job satisfaction, career satisfaction, perceived needs-supplies job fit, and job turnover cognitions amongst experienced workers.

Satisfaction refers to the overall positive or negative attitudes held by the person with respect to their position (Locke, 1976) whereas perceived needs-supplies fit reflects judgments of congruence between people's needs/values and the outcomes that they receive from their position (Cable & DeRue, 2002). Turnover cognitions refer to thoughts and plans about quitting a position to seek an alternative position, and these cognitions serve as the most proximal antecedents to actual withdrawal decisions (Bozeman & Perrewé, 2001). Consistent with trends documented in previous research (e.g., Iyengar et al., 2006), we expected that maximization will negatively relate to satisfaction and perceived fit, and positively relate to turnover cognitions, among both students and working adults.

Additionally, we measured criteria pertaining to career progression. Among students, we assessed CDSE with the expectation that maximizers would report lower CDSE due to their difficulties with identifying and selecting an optimal career path. Among adults, we assessed satisfaction with their career progression to evaluate perceptions of their career trajectory, not just their current jobs. Again, we expected that maximizers would be less satisfied with their career progression due to the belief that they might have experienced better outcomes if they had made more optimal choices (Sauermaun, 2005). The following hypotheses were proposed:

Hypothesis 1a: Among college students (Study 1), maximization will negatively relate to satisfaction with one's academic major, perceived fit with the major, and CDSE, but positively relate to turnover cognitions concerning the major.

Hypothesis 1b: Among working adults (Study 2), maximization will negatively relate to satisfaction with one's job, perceived fit with the job, and career satisfaction, but positively relate to turnover cognitions concerning the job.

Recent experimental studies outside of vocational psychology have indicated that the experience of regret is a key mediator that may explain the relations between maximization and outcome dissatisfaction (e.g., Parker et al., 2007; Schwartz et al., 2002). This research has focused exclusively on regret rather than other negative emotions and has relied on evidence from studies of simulated decisions in lab contexts. We extended this research by testing the more general trait of negative affect as a mediator of the relations between maximization and subsequent vocational criteria. Negative affect refers to a dispositional tendency to more frequently experience a broad spectrum of negative emotions like frustration, sadness, and anger (Watson, Clark, & Tellegen, 1988). Specifically, we expected that trait maximization would positively relate to trait negative affect and that negative affect would, in turn, serve as the mediating mechanism between maximization and subsequent career attitudes, academic attitudes, and self-efficacy. This formed the basis for the final hypothesis:

Hypothesis 2: Negative affect will mediate the relations between maximization and all criteria in both studies, such that the relations of maximization with vocational criteria are due, in part, to the experience of negative emotions.

Maximization and Perfectionism

Perfectionism is a multi-dimensional construct that entails setting high personal standards for oneself (Hamachek, 1978). Although maximization has received little attention among vocational psychologists, past research has linked perfectionism to a variety of outcomes such as CDSE (Ganske & Ashby, 2007), academic mastery (e.g., Hanchon, 2010), and career indecision

(Page et al., 2008). Although perfectionism and maximization are facially similar, they refer to different processes. Specifically, while perfectionists tend to set very high standards, maximization differs because it involves how people make decisions about options that *exceed* these standards. Perfectionism thereby impacts the criteria used to identify acceptable options, but maximization involves how one selects among the options that meet these criteria. Given that these are related individual differences and that perfectionism has been studied in previous vocational research, we controlled for perfectionistic striving in all of our analyses to demonstrate that maximization has unique effects on the outcomes.

Study 1: Method

Sample and Procedure

Participants were 136 students at a small, Mid-Atlantic college in the United States who completed the measures in the context of a broader survey given in exchange for extra credit in Psychology courses. Two simple quality-control questions were embedded in the survey to ensure that participants were reading carefully (e.g., “Please respond to this question with the answer choice of ‘Strongly Disagree’”). A total of 10 participants failed to answer either or both questions correctly; these responses were removed from the analysis, leaving the final sample at 126 students (92.6%). The mean age of the sample was 19.69 years ($SD = 1.60$) and the sample was 81.7% women. With respect to ethnicity, 10.3% of the sample identified as Hispanic or Latino/a, and with respect to race, 71.4% identified as European American, 19% as African American, 6.3% as Asian American, and 3.2% as “other”. The sample was comprised of 34.9% freshman, 34.9% sophomores, 20.6% juniors, and 9.5% seniors. Roughly half of the students majored in Psychology (48.4%); other common majors included Nursing, Biology, and Special Education.

Measures

Unless otherwise indicated, all responses were made on a five-point scale ranging from 1 = “strongly disagree” to 5 = “strongly agree.”

Maximizing decision style. Maximization was measured with a 10-item measure developed by Schwartz et al. (2002), which focuses on maximizing behaviors and thoughts. Sample items from the measure include, “I’m a big fan of lists that attempt to rank things (the best movies, singers, athletes, novels, etc.)” and “Renting videos is really difficult; I’m always struggling to pick the best one.” Responses are made on a seven-point scale ranging from 1 = “completely disagree” to 7 = “completely agree”. Higher scores reflect a greater tendency to maximize when making decisions; lower scores reflect a greater tendency to satisfice when making decisions. Schwartz et al. showed that the measure was predictive of outcomes such as optimism, life satisfaction, depression, and satisfaction with consumer decisions across four studies, and the measure is also predictive of satisfaction with job search outcomes (Iyengar et al., 2006). Iyengar et al. reported a reliability of .60; $\alpha = .70$ in this sample.

Negative affect. We used the 10 negative affect items from the Positive and Negative Affect Scale (PANAS; Watson et al., 1988), asking respondents to indicate the way that they generally tend to feel. Sample items include “upset” and “distressed”, and responses are made on a five-point scale where 1 = “very slightly or not at all” to 5 = “extremely”. The PANAS is the most widely-used measure of dispositional affectivity, and it has consistently demonstrated strong psychometric properties across hundreds of published studies (Tuccitto, Giacobbi, & Leite, 2010). We found that $\alpha = .89$.

Trait perfectionism. Perfectionism was assessed with Stoeber and Rambow’s (2007) five-item measure of perfectionistic striving. Sample questions from the measure include, “I

strive to be as perfect as possible” and “I feel the need to be perfect”. The measure is predictive of outcomes such as motivation for school and objective grades among adolescent students (Stoeber & Rambow), and of self-confidence and lower anxiety among collegiate athletes (Stoeber, Otto, Pescheck, Becker, & Stoll, 2007). Stoeber et al. reported reliabilities of .90-.93 across four samples; in this sample, $\alpha = .90$.

Satisfaction with major. Students’ satisfaction with their major was measured with the Academic Major Satisfaction Scale (AMSS; Nauta, 2007). The six-item AMSS is a measure of global satisfaction with majors; sample items read, “I wish I was happier with my choice of an academic major” (reverse-scored) and “I feel good about the major I’ve selected.” Nauta reported evidence of factorial stability, reliability, and two-year predictive validity for the AMSS in two large student samples. Duffy, Allan, and Dik (2011) also demonstrated that professional calling was predictive of AMSS scores. In Duffy et al. and this study, $\alpha = .93$.

Perceived fit with academic major. Fit was measured with Schmitt, Oswald, Friede, Imus, and Merritt’s (2008) six-item scale, which measures the extent to which students perceive that the courses and faculty fit with their needs and abilities. Sample items include “All things considered, my current major suits me” and “The courses available at this school match my interests.” In a large, longitudinal study drawing on students from 10 U.S. colleges and universities, Schmitt et al. reported that perceived fit ratings were predictive of satisfaction, GPA, and absenteeism over multiple points of data collection. Schmitt et al. reported a reliability of .75 whereas $\alpha = .79$ in this study.

Academic major turnover cognitions. We modified a five-item organizational measure by Bozeman and Perrewé (2001) to measure thoughts about changing academic majors. Sample items include, “At the present time, I am actively searching for another major” and “It is unlikely

that I will actively look into changing my major in the next year” (reverse-scored). Bozeman and Perrewé found reliabilities of .90 and .94 for the organizational version of the measure in two samples; in this study, $\alpha = .93$ for the modified version referencing academic majors.

Career decision self-efficacy. We used the career decision self-efficacy scale, short form (CDSE-SF; Betz et al., 1996) to measure career decision self-efficacy. Consistent with Betz, Hammond and Multon (2005), we adapted the response scale to use a five-level continuum where 1 = “no confidence at all” and 5 = “complete confidence” rather than the 10-point continuum used in previous research. Participants are prompted with the question stem, “How much confidence do you have that you could...”, and sample items include “make a plan of your goals for the next five years” and “determine what your ideal job would be”. The CDSE-SF has been employed in dozens of studies (Betz et al.) and has a stable factor structure, good reliability, and an extensive body of validity evidence. In this study, $\alpha = .90$ whereas Betz et al. reported reliabilities from .78-.87.

Study 1: Results

Table 1 shows all correlations and descriptive statistics among the student sample. All variables correlated in the expected directions, with the exception of academic turnover cognitions which was unrelated to negative affect. We hypothesized a mediated sequence of relationships in which maximization leads to negative affect and negative affect leads to vocational criteria. Given concerns about the cross-sectional nature of our data, prior to testing our hypotheses we compared the fit of our hypothesized model to an alternative model using a path analysis framework (Kline, 2011) in MPlus (Muthén & Muthén, 1998-2007). The alternative model reversed the positions of maximization and negative affect, placing maximization as a mediator of the relations of negative affect with the vocational criteria. We

found that the hypothesized path analysis fit the data very well ($\chi^2_{(4)} = 6.39, ns$; CFI = .99; RMSEA = .07; SRMR = .06). In contrast, the alternative model showed worse fit to the data ($\chi^2_{(4)} = 9.94, p < .05$; CFI = .97; RMSEA = .10; SRMR = .06). Given this statistical support and the theoretical evidence for our hypothesized sequence of variables, we moved forward to testing Hypotheses 1a and 2.

We tested our mediation hypotheses using bootstrapping (Shrout & Bolger, 2002) with the aid of a SPSS macro developed by Preacher and Hayes (2008; see Table 2). The advantage of this analytical approach is that we could test mediation with bias-accelerated-and-corrected confidence intervals around the bootstrapped effects (Shrout & Bolger), which overcomes the limitations associated with testing mediation with a Sobel test. Additionally, we were able to test these mediated relations while simultaneously accounting for the effects of perfectionistic striving, our control variable.

Table 2 shows the results of four tests of mediation, one for each of the criteria that we studied. For clarity, we labeled the paths in Table 2 using the well-known terms originally described by Baron and Kenny (1986). In this terminology, path A reflects the relation between the predictor and the mediator, path B reflects the relation between the mediator and the criterion, and path AB is the indirect effect found by combining these effects together. Path C is the total effect from the predictor to the criterion, and path C' is the remaining direct effect from the predictor to the criterion after the indirect effect through the mediator is taken into account. Note that we did not include the effect from maximization to negative affect (i.e., path A, the effect from the predictor to the mediator) in Table 2 because this effect is the same for all four tests of mediation shown in the table ($b = .15, SE = .07, t = 2.35, p < .05$). The bottom half of the table shows the bias-corrected and -accelerated 95% confidence intervals around the mean value

of the indirect effect, path AB ($N = 5,000$ bootstrapped samples); where this confidence interval does not include zero, the indirect effect of maximization on the criterion via negative affect is statistically significant ($p < .05$).

Hypothesis 1a stated that maximization would have a positive relation with turnover cognitions regarding the academic major and negative relations with academic major satisfaction, perceived fit with the academic major, and CDSE. As shown in Table 1, Hypothesis 1a was fully supported as maximization correlated with all criteria consistent with expectations. Hypothesis 2 concerned the mediating role of negative affect in all four of these relationships. As shown in Table 2, Hypothesis 2 was largely supported. Negative affect fully-mediated the relation between maximization and academic major satisfaction, and between maximization and perceived fit with the major, as shown by the non-significant direct effect of maximization on these criteria (i.e., the change from statistical significance to non-significance when comparing path C to path C'). We also found that negative affect partially-mediated the relation between maximization and CDSE; the direct effect from maximization to CDSE weakened, but remained significant after including negative affect as a mediator. However, no support for mediation was found with respect to major turnover cognitions. As shown in Table 2, negative affect was unrelated to academic major turnover cognitions, so support for a pattern of mediation could not be inferred. Lastly, perfectionistic striving, the control variable did not have significant unique effects on any of the criteria, suggesting that maximization is the stronger predictor of these outcomes.

Study 1: Discussion

The results of Study 1 demonstrate that college students with a maximizing decision style are likely to face a variety of challenges. Maximization was negatively related to satisfaction, fit

perceptions, and CDSE, and positively related to turnover cognitions about leaving their majors to try a different program of study. In combination, these findings demonstrate that maximizers may have difficulties settling on a career direction during their college experience.

We also found that negative affect mediated most of the relations between maximization and these criteria. These results suggest that maximization relates to feelings like regret, frustration, and anxiety in the wake of academic decisions, and these feelings are predictive of negative attitudes toward the circumstances they selected for themselves (Iyengar et al., 2006; Paivandy et al., 2008). These findings are important because they represent the first empirical support for the role of negative affect as a mediator between maximization and subsequent criteria found outside of a laboratory setting. However, negative affect did not mediate the relationship between maximization and academic major turnover cognitions because affect was unrelated to turnover cognitions. This unexpected result may be explained in terms of invested costs; given that changing an academic major has significant costs in terms of time and money to pursue a new major, students may not consider changing majors to be a viable option even if they tend to experience negative emotions during their course of study.

Based on these results, we conducted a second study to examine the effects of maximization on the attitudes and cognitions of working adults with respect to their jobs and careers. In the interest of replicating Study 1, we selected a similar set of criteria to examine (satisfaction, fit perceptions, and turnover cognitions) and we expected that maximization would have the same pattern of relations with these outcomes. Given that working adults have already made career decisions, we focused on career satisfaction rather than CDSE in Study 2, with the expectation that maximizers would experience more disappointment with the existing state of their careers. Again, we expected that negative affect would mediate these relationships and we

controlled for perfectionistic striving in all hypothesis tests to demonstrate that maximization has unique effects beyond those observed in previous research on perfectionism.

Study 2: Method

Sample and Procedure

Participants were 155 employed adults residing in the United States who were recruited through Amazon.com's Mechanical Turk system (MTurk). MTurk launched in 2005 as a means to pair up "workers" with "requesters" who need large numbers of people to complete various short, computer-based tasks for business or research purposes. Workers receive token financial compensation from the requesters (typically less than one dollar and sometimes as little as one cent); in this study, we compensated participants 60 cents for a complete survey response. Several recent studies have analyzed the demographic composition of the MTurk worker pool and the quality of data collected through this process. These studies indicate that the pool of respondents is more diverse than standard Internet samples, that measures collected through MTurk show good test-retest reliability and factor stability over time, and that results observed from MTurk participants are nearly identical when compared to those of a matched sample recruited in person (Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, & Ipeirotis, 2010; Sprouse, 2011). To ensure the quality of our data, we again embedded several quality-control questions in the survey to confirm that participants were reading closely. We also blocked repeat IP addresses to prevent any one person from completing the survey multiple times under different aliases. Lastly, we limited responses to workers in the U.S. and screened participants on the basis of their self-rated comfort with the English language in the interest of only recruiting participants who could clearly understand the survey items.

Ultimately, we deleted two responses from participants who lived outside of the U.S. and one response from a participant who indicated only moderate comfort with English. Thirteen participants failed to correctly answer at least one of the quality-control questions and these responses were dropped as well, leaving a total sample size of 139 responses for hypothesis testing (89.7%). The final sample had a mean age of 34.61 years ($SD = 11.83$) and consisted of 59.4% women. Salaried employees made up 69.1% of the sample and the remainder of participants worked part-time. A total of 5% of participants identified as Hispanic or Latino/a, and the sample was 74.8% European American, 10.8% Asian American, 10.8% African American, and 3.6% Native American or Native Alaskan.

Measures

Maximizing decision style, negative affect, and perfectionistic striving were all assessed using the same measures described in Study 1. In Study 2, the reliability for the Schwartz et al. (2002) maximization scale was .75, the reliability of Watson et al.'s (1988) negative affect scale was .95, and the reliability of Stoebler and Rambow's (2007) perfectionistic striving scale was .94. Unless otherwise indicated, all responses for the new measures introduced below were made on a five-point scale ranging from 1 = "strongly disagree" to 5 = "strongly agree."

Job satisfaction. Overall job satisfaction was assessed with Cammann, Fichman, Jenkins, and Klesh's (1983) satisfaction measure. This three-item measure has been used extensively in organizational research and demonstrates good reliability, factorial stability, and validity (e.g., Sanchez, Kraus, White, & Williams, 1999). Sample items from the measure include, "All in all, I am satisfied with my job" and "In general, I like working here." Sanchez et al. reported a reliability coefficient of .85, whereas $\alpha = .92$ in this study.

Perceived job fit. Perceived fit was measured with the three-item measure developed and validated by Cable and DeRue (2002). Sample items include, “There is a good fit between what my job offers me and what I am looking for in a job” and “The job that I currently hold gives me just about everything that I want from a job”. The measure was found to be predictive of outcomes such as organizational identification and pay raises received one year later. Cable and DeRue reported reliabilities ranging from $\alpha = .89-.93$, and $\alpha = .92$ in this study.

Turnover cognitions. We assessed turnover cognitions with the original, organizational measure by Bozeman and Perrewé (2001) that we had modified for Study 1. The five-item measure consists of items such as “At the present time, I am actively searching for another job” and “It is unlikely that I will actively look into changing my job in the next year” (reverse-scored). We found that $\alpha = .91$ for the measure in this study.

Career satisfaction. Career satisfaction was measured using Greenhaus, Parasuraman, and Wormley’s (1990) five-item questionnaire, which has been identified as the best measure of this construct in previous work (Judge, Cable, Boudreau, & Bretz, 1995). Sample items include, “I am satisfied with the progress I have made toward meeting my overall career goals” and “I am satisfied with the success I have achieved in my career”. Greenhaus et al. reported that $\alpha = .88$; in this study, $\alpha = .92$.

Study 2: Results

We followed the same practices as reported in Study 1 to test our hypotheses in Study 2. Table 3 shows all correlations and descriptive statistics among the adult sample. The pattern of intercorrelations was entirely consistent with expectations. We began by comparing the fit of a path analysis with our hypothesized sequence of variables ($\chi^2_{(4)} = 8.87$, *ns*; CFI = .98; RMSEA = .09; SRMR = .07) to the fit of a path analysis with an alternative sequence of variables in which

negative affect was the predictor and maximization was the mediator ($\chi^2_{(4)} = 11.27, p < .05$; CFI = .98; RMSEA = .12; SRMR = .07). As in Study 1, the hypothesized sequence of variables exhibited superior fit to the data, and we consequently moved forward with testing Hypotheses 1b and 2.

Table 4 shows the results of the mediation tests using bootstrapping with Preacher and Hayes' (2008) macro. Again, the effect of maximization on negative affect (Path A) was excluded from Table 4 because it is the same in all of the mediation analyses ($b = .27, SE = .07, t = 3.80, p < .01$). Hypothesis 1b was fully supported; maximization was negatively related to job satisfaction, perceived fit, and career satisfaction, and positively related to turnover cognitions, as shown in Table 3. Moreover, Hypothesis 2, which concerned negative affect as a mediator of these relations, was also fully supported. As shown in Table 4, the direct effect from maximization to all criteria was reduced relative to the total effect, but remained significant, when negative affect was included as a mediator in each regression equation. Thus, negative affect partially mediated all four relationships between maximization and the vocational criteria. Perfectionistic striving, the control variable, retained significant, positive effects on both job satisfaction and perceived needs-supplies fit with the job, but not on turnover cognitions or career satisfaction.

Study 2: Discussion

The results of Study 2 replicated the findings observed in Study 1 among working adults with respect to their jobs and career progression. Maximization related negatively to satisfaction and perceived fit with the job and related positively to turnover cognitions from the job among working adults. Further, maximizing adults reported lower satisfaction with their career progression, which is comparable to the lower levels of CDSE reported among the maximizing

students. Negative affect mediated all of the relations between maximization and the job and career criteria, pointing again to negative feelings as an important psychological state that mediates the link between maximization and vocational outcomes. All of these effects persisted despite again controlling for perfectionistic striving. Perfectionistic striving did not demonstrate unique effects on the outcomes for college students in Study 1, but did for two criteria (i.e., job satisfaction and perceived needs-supplies fit with the job) among working adults in Study 2.

General Discussion

Consistent with previous research on maximization, our results indicate that maximizers are likely to be dissatisfied with their condition despite their rigorous decision-making processes. Among college students, we found that maximization related negatively to satisfaction and perceived fit with the student's academic major, related positively to turnover cognitions from the major, and related negatively to CDSE. Negative affect mediated all of these relations except for the relation between maximization and turnover cognitions from the major. Maximization, therefore, appears to detract from academic outcomes through negative feelings such as remorse, anger, and frustration, which come as a consequence of the inability to always make the best rational choice (Schwartz et al., 2002; Simon, 1955, 1957).

In Study 1, the predictor variables explained between 8-9% of the variability in CDSE, satisfaction, and perceived needs-supplies fit. Although these are somewhat small effect sizes in absolute terms (Cohen, 1988), the breadth of variables found to impact CDSE and these attitudes in past research suggests that our findings do have practical importance. Larger effect sizes (9-16%) were observed among the working adults in Study 2 relative to the students in Study 1. These effects may be more pronounced because job and career decisions may carry more significant, longer-term consequences than academic decisions. Again, given the enormous body

of research documenting antecedents of job attitudes (e.g., Schleicher, Hansen, & Fox, 2011), these effect sizes are noteworthy despite being only moderate in absolute terms (Cohen, 1988).

Taken together, the results from both studies highlight the role of negative affect as an important mediating variable between maximization and vocational outcomes. Maximization was positively associated with trait negative affectivity, and negative affect partially mediated the relations between maximization and almost all of the criteria that we studied across both samples. These findings are important given that negative emotions have been examined as mediators of the relationships between maximization and subsequent criteria only in laboratory studies to date (e.g., Schwartz et al., 2002), and that this research has focused entirely on regret rather than negative affect in general.

Implications for Practice

These results suggest that the emotional experiences of maximizers may offer a point of involvement that could disrupt the negative relationships between maximization and vocational criteria. Interventions designed to help maximizers feel less frustrated and upset about their choices may be helpful. For example, career counselors could work with clients to help them to develop strategies to assess and appraise their choices more favorably by reframing their career decisions in terms of the positive benefits gained by a choice rather than the alternatives lost (e.g., Sauermaun, 2005).

Consistent with previous research, our findings also highlight the folly of trying to identify, and decide upon, the single “best” job or career (e.g., Iyengar et al., 2006; Paivandy et al., 2008). In combination, these data suggest that career practitioners may best meet the needs of maximizing clients by facilitating their ability to approach the career decision process in a boundaryless and protean fashion. For example, maximizing individuals may benefit from the

identification of skills and strategies that will assist them in developing open exploration and adaptability with regard to career possibilities rather than rigid and conclusive decision-making (Krieshok, Black, & McKay, 2009; van Vianen et al., 2009). As suggested by van Vianen et al., clients who exhibit maximizing tendencies may benefit from reminders that career decisions are not irreversible and that career transitions and nonlinear development are increasingly common.

Interventions that support clients in developing role-breadth self-efficacy, adaptability, and transferable skills (Savickas, 1997) may be particularly helpful for clients who tend to maximize when faced with decisions. These types of interventions are especially important in these economic times given the staggering unemployment rates, soaring student loan debt, and paucity of available jobs. As such, individuals' expectations about jobs and careers may not match the reality of the positions that they can secure (De Hauw & De Vos, 2010). Without education and increased awareness about the current economic reality, job-seekers may end up experiencing negative feelings (e.g., regret, disappointment, failure) even when they are able to secure employment.

Limitations and Directions for Future Research

Despite these promising results, our studies should be interpreted in light of several limitations. First, our data are cross-sectional and self-reported, which introduces concerns about causal inferences and mono-method biases. Although we tested alternative models to examine different patterns of relations between the constructs, longitudinal data is necessary to draw stronger conclusions about the causal effects of maximization on vocational criteria.

Second, our student sample in Study 1 was disproportionately female and overrepresented with Psychology majors rather than students from other disciplines. Although

our sample in Study 2 was more gender-balanced, future researchers should replicate our results from Study 1 among students using a more diverse sample.

Third, the effects that we observed in the study were primarily of a small magnitude in Study 1 and a moderate magnitude in Study 2 (Cohen, 1988). Although our criteria were quite broad and these effects are noteworthy in context (Schleicher et al., 2011), there are clearly other constructs that impact attitudes toward academic, job, and career outcomes. Additional research examining a broader set of predictors, including maximization, is needed to clarify the unique effects of maximization on these criteria.

Fourth, we note that the reliability of the maximization measure was somewhat low, although safely within established convention and consistent with past research (e.g., Iyengar et al., 2006; Schwartz et al., 2002). However, future research should continue to evaluate its psychometric properties in the interest of improving the assessment of maximization. To date, the Schwartz et al. (2002) measure has dominated research on maximization, and the development of alternative measures could be useful in future studies.

Additional research is also needed to integrate maximization into existing typologies of decision-making styles and profiles. For example, Gati et al. (2010) recently developed the Career Decision-Making Profile (CDMP) questionnaire in the interest of distilling large sets of decision-making styles into a smaller body of decision-making profiles that draw on different combinations of styles. The CDMP includes a dimension called *willingness to compromise* that is based on Simon's (1957) work on satisficing, which Gati et al. (2010) defined as "the extent to which individuals are willing to be flexible about their preferred alternative when they encounter difficulties in actualizing it" (p. 280). Although predictive and convergent validity evidence is not yet available for the CDMP instrument, this inventory may provide a mechanism by which

future careers researchers can assess maximizing versus satisficing tendencies in the context of a broader set of career decision-making approaches.

Summary

Results from both studies indicate that people who seek to maximize career and academic decisions may be more likely to be embittered with the results. Given the unrealistic pressure that many students and working adults feel to quickly identify the “right” career and to make decisive career choices (van Vianen et al., 2009), it seems likely that many people will unfortunately continue to approach the career decision-making process with a maximizing mindset.

Consequently, there is a clear need for future research and practice that focuses on helping clients adopt more realistic and adaptive orientations.

References

- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. DOI: 10.1037/0022-3514.51.6.1173
- Betz, N.E., Hammond, M.S., & Multon, K.D. (2005). Reliability and validity of five-level response continua for the career decision self-efficacy scale. *Journal of Career Assessment, 13*, 131-149. DOI: 10.1177/1069072704273123
- Betz, N.E., Klein, K.L., & Taylor, K.M. (1996). Evaluation of a short form of the career decision-making self-efficacy scale. *Journal of Career Assessment, 4*, 47-57. DOI: 10.1177/106907279600400103
- Bozeman, D.P., & Perrewé, P.L. (2001). The effect of item content overlap on Organizational Commitment Questionnaire-turnover cognitions relationships. *Journal of Applied Psychology, 86*, 161-173. DOI: 10.1037//0021-9010.86.1.161
- Buhrmester, M., Kwang, T., & Gosling, S.D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*, 3-5. DOI: 10.1177/1745691610393980
- Cable, D.M., & DeRue, D.S. (2002). The convergent and discriminant validity of subjective fit perceptions. *Journal of Applied Psychology, 87*, 875-884. DOI: 10.1037//0021-9010.87.5.875
- Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1983). Assessing the attitudes and perceptions of organizational members. In S. Seashore, E. Lawler, P. Mirvis, & C. Cammann (Eds.), *Assessing organizational change: A guide to methods, measures, and practices* (pp. 71-138). New York, NY: John Wiley.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, N J: LEA.

Dar-Nimrod, I., Rawn, C.D., Lehman, D.R., & Schwartz, B. (2009). The maximization paradox: The costs of seeking alternatives. *Personality and Individual Differences, 46*, 631-635.
DOI: 10.1016/j.paid.2009.01.007

De Hauw, S., & De Vos, A. (2010). Millennial's career perspective and psychological contract expectations: Does the recession lead to lowered expectations? *Journal of Business & Psychology, 25*, 293-302. DOI: 10.1007/s10869-010-9162-9

Duffy, R.D., Allan, B.A., & Dik, B.J. (2011). The presence of a calling and academic satisfaction: Examining potential mediators. *Journal of Vocational Behavior, 79*, 74-80.
DOI: 10.1016/j.jvb.2010.11.001

Ganske, K.H., & Ashby, J.S. (2007). Perfectionism and career decision-making self-efficacy. *Journal of Employment Counseling, 44*, 17-28.

Gati, I., Landman, S., Davidovitch, S., Asulin-Peretz, L., & Gadassi, R. (2010). From career decision-making styles to career decision-making profiles: A multidimensional approach. *Journal of Vocational Behavior, 76*, 277-291. DOI: 10.1016/j.jvb.2009.11.001

Greenhaus, J.H., Parasuraman, S., & Wormley, W.M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal, 33*, 64-86.

Hamachek, D.E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology, 15*, 27-33.

Hanchon, T.A. (2010). The relations between perfectionism and achievement goals. *Personality and Individual Differences, 49*, 885-890. DOI: 10.1016/j.paid.2010.07.023

Hargreaves-Heap, S. (1989). *Rationality in economics*. Oxford, UK: Blackwell.

- Iyengar, S.S., & Lepper, M.R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, *79*, 995-1006. DOI: 10.1037//0022-3514.79.6.995
- Iyengar, S.S., Wells, R.E., & Schwartz, B. (2006). Doing better but feeling worse: Looking for the “best” job undermines satisfaction. *Psychological Science*, *17*, 143-150. DOI: 10.1111/j.1467-9280.2006.01677.x
- Judge, T.A., Cable, D.M., Boudreau, J.W., & Bretz, R.D. Jr. (1995). An empirical investigation of the predictors of executive career success. *Personnel Psychology*, *48*, 485-519. DOI: 10.1111/j.1744-6570.1995.tb01767.x
- Klein, R.B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.
- Krieshok, T.S., Black, M.D., & McKay, R.A. (2009). Career decision making: The limits of rationality and the abundance of non-conscious processes. *Journal of Vocational Behavior*, *75*, 275-290. DOI: 10.1016/j.jvb.2009.04.006
- Larsen, J.T., & McKibban, A.R. (2008). Is happiness having what you want, wanting what you have, or both? *Psychological Science*, *19*, 371-377. DOI: 10.1111/j.1467-9280.2008.02095.x
- Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (1st ed., pp. 1297-1349). Chicago, IL: Rand McNally.
- Muthén, L.K., & Muthén, B.O. (1998-2007). *Mplus user's guide*, 5th ed. Los Angeles, CA: Muthén & Muthén.

- Nauta, M.M. (2007). Assessing college students' satisfaction with their academic majors. *Journal of Career Assessment, 15*, 446-462. DOI: 10.1177/1069072707305762
- National Public Radio Staff (Nov. 12, 2011). *Educated And Jobless: What's Next For Millennials?* Retrieved from <http://www.npr.org/2011/11/12/142274437/educated-and-jobless-whats-next-for-millennials?sc=emaf>
- Page, J., Bruch, M.A., & Haase, R.F. (2008). Role of perfectionism and Five-Factor model traits in career indecision. *Personality and Individual Differences, 45*, 811-815. DOI: 10.1016/j.paid.2008.08.013
- Paivandy, S., Bullock, E.E., Reardon, R.C., & Kelly, F.D. (2008). The effects of decision-making style and cognitive thought patterns on negative career thoughts. *Journal of Career Assessment, 16*, 474-488. DOI: 10.1177/1069072708318904
- Paolacci, G., Chandler, J., & Ipeirotis, P.G. (2010). Running experiments on Amazon Mechanical Turk. *Judgment and Decision Making, 5*, 411-419.
- Parker, A.M., de Bruin, W.B., & Fischhoff, B. (2007). Maximizers versus satisficers: Decision-making styles, competence, and outcomes. *Judgment and Decision Making, 2*, 342-350.
- Preacher, K.J., & Hayes, A.F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891. DOI: 10.3758/BRM.40.3.879
- Sanchez, J.I., Kraus, E., White, S., & Williams, M. (1999). Adopting high-involvement human resource practices: The mediating role of benchmarking. *Group & Organization Management, 24*, 461-478. DOI: 10.1177/1059601199244004
- Sauermann, H. (2005). Vocational choice: A decision making perspective. *Journal of Vocational Behavior, 66*, 273-303. DOI: 10.1016/j.jvb.2004.10.001

- Savickas, M.L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *The Career Development Quarterly*, 45, 247-259.
- Schleicher, D.J., Hansen, S.D., & Fox, K.E. (2011). Job attitudes and work values. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 3, pp. 137-189). Washington, D.C.: APA.
- Schmitt, N., Oswald, F.L., Friede, A., Imus, A., & Merritt, S. (2008). Perceived fit with an academic environment: Attitudinal and behavioral outcomes. *Journal of Vocational Behavior*, 72, 317-335. DOI: 10.1016/j.jvb.2007.10.007
- Schwartz, B.A. (2000). Self-determination: The tyranny of freedom. *American Psychologist*, 55, 79-88. DOI: 10.1037/0003-066X.55.1.79
- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D.R. (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of Personality and Social Psychology*, 83, 1178-1197. DOI: 10.1037//0022-3514.83.5.1178
- Shrout, P.E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods*, 7, 422-445. DOI: 10.1037/1082-989X.7.4.422
- Simon, H.A. (1955). A behavioral model of rational choice. *The Quarterly Journal of Economics*, 69, 99-118.
- Simon, H.A. (1957). *Models of man, social and rational: Mathematical essays on rational human behavior*. New York, NY: Wiley.
- Sprouse, J. (2011). A validation of Amazon Mechanical Turk for the collection of acceptability judgments in linguistic theory. *Behavior Research Methods*, 43, 155-167. DOI: 10.3758/s13428-010-0039-7

- Stoeber, J., Otto, K., Pescheck, E., Becker, C., & Stoll, O. (2007). Perfectionism and competitive anxiety in athletes: Differentiating striving for perfection and negative reactions to imperfection. *Personality and Individual Differences, 42*, 959-969. DOI: 10.1016/j.paid.2006.09.006
- Stoeber, J., & Rambow, A. (2007). Perfectionism in adolescent school students: Relations with motivation, achievement, and well-being. *Personality and Individual Differences, 42*, 1379-1389. DOI: 10.1016/j.paid.2006.10.015
- Tuccitto, D.W., Giacobbi, P.R., & Leite, W.L. (2010). The internal structure of positive and negative affect: A confirmatory factor analysis of the PANAS. *Educational and Psychological Measurement, 70*, 125-141. DOI: 10.1177/0013164409344522
- van Vianen, A.E.M., De Pater, I.E., & Preenen, P.T.Y. (2009). Acceptable careers: Maximizing less and exploring more. *The Career Development Quarterly, 57*, 298-309.
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070. DOI: 10.1037/0022-3514.54.6.1063

Table 1

Correlations and Descriptive Statistics, Study 1

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Age	19.69	1.60	--									
2. Gender	--	--	-.13	--								
3. Academic rank	--	--	.63**	-.10	--							
4. Maximizing decision style	3.84	0.90	-.08	-.10	-.06	.70						
5. Negative affect	1.96	0.68	-.07	.08	.01	.26**	.89					
6. Perfectionistic striving	3.41	0.96	-.03	.34**	-.09	.07	.19*	.90				
7. Satisfaction with major	4.10	0.99	.13	.08	.14	-.20*	-.25**	-.09	.93			
8. Perceived fit with major	4.02	0.57	.00	.10	-.01	-.21*	-.25**	.00	.74**	.79		
9. Major turnover cognitions	1.76	0.94	-.31**	-.11	-.31**	.19*	.11	.03	-.77**	-.55**	.93	
10. CDSE	3.87	0.49	.11	.15	.12	-.22*	-.20*	.09	.35**	.49**	-.33**	.90

Note: ** $p < .01$; * $p < .05$. Coefficient alpha is reported on the diagonal. Gender was coded such that 1 = male and 2 = female. CDSE

= Career decision self-efficacy.

Table 2

Tests of Mediation Hypotheses, Study 1

	Criteria															
	Major Satisfaction			Perceived Major Fit			Turnover Cognitions			Career Decision Self-Efficacy						
	b	SE	Total R ²	b	SE	Total R ²	b	SE	Total R ²	b	SE	Total R ²				
Direct effect of NA on criterion (<i>b</i> path)	-.28*	.13	.08*	-.17*	.08	.09*	.07	.13	.04	-.14*	.07	.09*				
Total effect of maximization on criterion (<i>c</i> path)	-.21*	.10		-.13*	.06		.20*	.09		-.12*	.05					
Direct effect of maximization on criterion (<i>c'</i> path)	-.16	.10		-.10	.06		.19	.10		-.10*	.05					
Partial effect of perfectionism on criterion (<i>control variable</i>)	-.03	.09		.04	.05		.00	.09		.08	.05					
	Major Satisfaction				Perceived Major Fit				Turnover Cognitions				Career Decision Self-Efficacy			
	<i>M</i>	<i>SE</i>	LL 95%	UL 95%	<i>M</i>	<i>SE</i>	LL 95%	UL 95%	<i>M</i>	<i>SE</i>	LL 95%	UL 95%	<i>M</i>	<i>SE</i>	LL 95%	UL 95%
	Bootstrap results for indirect effects (<i>ab</i> path)	-.05	.03	-.14	-.01	-.03	.02	-.08	-.01	.01	.03	-.03	.08	-.02	.02	-.06

Note: ** $p < .01$; * $p < .05$. LL = lower limit of confidence interval; UL = upper limit of confidence interval.

Table 3

Correlations and Descriptive Statistics, Study 2

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Age	34.62	11.83	--									
2. Gender	--	--	.10	--								
3. Work status	--	--	-.24**	.03	--							
4. Maximizing decision style	4.07	1.01	-.18*	-.17*	.02	.75						
5. Negative affect	1.71	0.83	-.20*	-.03	.22*	.33**	.95					
6. Perfectionistic striving	3.50	0.93	-.18*	-.01	.03	.20*	.13	.94				
7. Job satisfaction	3.45	1.12	-.10	-.09	-.04	-.27**	-.26**	.13	.92			
8. Perceived job fit	3.15	1.12	-.07	-.05	-.12	-.24**	-.23**	.21*	.82**	.92		
9. Job turnover cognitions	2.93	1.21	-.14	-.02	.19*	.29**	.24**	.05	-.62**	-.67**	.91	
10. Career satisfaction	3.19	1.01	-.10	-.07	-.18*	-.32**	-.27**	.04	.47**	.46**	-.34**	.92

Note: ** $p < .01$; * $p < .05$. Gender was coded such that 1 = male and 2 = female, and work status was coded such that 1 = full-time

and 2 = part-time employment. Coefficient alpha is reported on the diagonal.

Table 4

Tests of Mediation Hypotheses, Study 2

	Criteria															
	Job Satisfaction			Perceived Job Fit			Turnover Cognitions			Career Satisfaction						
	b	SE	Total R ²	b	SE	Total R ²	b	SE	Total R ²	b	SE	Total R ²				
Direct effect of NA on criterion (<i>b</i> path)	-.30 **	.07	.14**	-.30*	.12	.16**	.27*	.13	.09**	-.27*	.11	.14**				
Total effect of maximization on criterion (<i>c</i> path)	-.32**	.10		-.29**	.10		.32**	.11		-.34**	.09					
Direct effect of maximization on criterion (<i>c'</i> path)	-.24*	.10		-.21*	.10		.25*	.11		-.26**	.09					
Partial effect of perfectionism on criterion (<i>control variable</i>)	.24*	.10		.37**	.10		-.05	.11		.13	.09					
	Job Satisfaction				Perceived Job Fit				Turnover Cognitions				Career Satisfaction			
	<i>M</i>	<i>SE</i>	LL 95%	UL 95%	<i>M</i>	<i>SE</i>	LL 95%	UL 95%	<i>M</i>	<i>SE</i>	LL 95%	UL 95%	<i>M</i>	<i>SE</i>	LL 95%	UL 95%
Bootstrap results for indirect effects (<i>ab</i> path)	-.08	.04	-.18	-.02	-.08	.04	-.17	-.02	.07	.04	.01	.16	-.08	.04	-.18	-.02

Note: ** $p < .01$; * $p < .05$. LL = lower limit of confidence interval; UL = upper limit of confidence interval.