

# The Negative Consequences of Maximizing in Friendship Selection

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Previous studies have shown that the maximizing orientation, reflecting a motivation to select the best option among a given set of choices, is associated with various negative psychological outcomes. In the present studies, we examined whether these relationships extend to friendship selection and how the number of options for friends moderated these effects. Across 5 studies, maximizing in selecting friends was negatively related to life satisfaction, positive affect, and self-esteem, and was positively related to negative affect and regret. In Study 1, a maximizing in selecting friends scale was created, and regret mediated the relationships between maximizing and well-being. In a naturalistic setting in Studies 2a and 2b, the tendency to maximize among those who participated in the fraternity and sorority recruitment process was negatively related to satisfaction with their selection, and positively related to regret and negative affect. In Study 3, daily levels of maximizing were negatively related to daily well-being, and these relationships were mediated by daily regret. In Study 4, we extended the findings to samples from the U.S. and Japan. When participants who tended to maximize were faced with many choices, operationalized as the daily number of friends met (Study 3) and relational mobility (Study 4), the opportunities to regret a decision increased and further diminished well-being. These findings imply that, paradoxically, attempts to maximize when selecting potential friends is detrimental to one's well-being.

*Keywords:* choices, friendship, maximizing, satisficing, well-being

Imagine you have been invited to a party on Friday night by a colleague whom you recently met. It seems as if the party will be enjoyable and you will probably meet some interesting people you have never met before. But before you commit to attending the party, you would like to know what your close friends plan on doing on Friday night. Alternatively, another group of friends may decide to watch a movie together on the same night, in which case

it might be more enjoyable to be with them. Not knowing all of the specifics about each option might make the decision to commit to going to the party difficult. How do you choose the option that will maximize your happiness?

In such situations, complete information is not available to make a decision. Nevertheless, a decision must be made. To describe this process, [Simon \(1956\)](#) coined the term *satisficing* as a decision-making strategy in which one chooses an option that is “good enough,” a decision that meets a certain threshold. Rather than considering every possible choice or piece of information available, people make decisions within the constraints of their situations and cognitive abilities.

Despite these constraints, individuals may nevertheless try to consider every piece of information possible to varying degrees when making decisions. To capture individual differences in this tendency, [Schwartz et al. \(2002\)](#) coined the term *maximizing* to describe a decision making strategy that is more or less the opposite of satisficing. When maximizing, people examine all possible choices and make a choice only after they have evaluated all alternatives and have found an option that meets their high standard. The present set of studies was intended to examine how the maximizing tendency operates within the realm of friendship selection, a heretofore unexamined possibility.

The tendency for people to use maximizing as a decision strategy has been linked to a number of negative outcomes. Greater maximizing has been found to be associated with higher levels of perfectionism and depression, and with lower levels of happiness, optimism, self-esteem, and life satisfaction (e.g., [Schwartz et al.](#),

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2002). These negative consequences can be explained by the fact that maximizing leads to regret, rumination, and continued evaluations of alternative options, which subsequently leads to greater choice dissatisfaction and lower well-being (Schwartz, 2004).

Several studies support this explanation. Maximizing is associated with upward social comparison, which leads to more frequent counterfactual thinking and regret (Schwartz et al., 2002, Studies 2 and 3). Increased maximizing is associated with increased external fixation on alternative choices and increased reliance on various sources of information (Iyengar, Wells, & Schwartz, 2006). This external fixation and comparison of options with others is characteristic of the maximizing tendency and presumably leads one to regret the present choice. Relatedly, increases in maximizing are also associated with an increased desire to “hang on” to the possibility of revising a choice. For example, in a study of evaluations of posters, Sparks, Ehrlinger, and Eibach (2012) found that satisficing was positively related to posttest evaluations of self-selected posters as compared to nonselected posters. Sparks et al. (2012) interpreted their findings as indicating that greater satisficing is associated with greater reductions in postdecision dissonance. This suggests that maximizing is associated with a continual consideration of foregone options, which reduces the hedonic benefits of cognitive dissonance.

### Maximizing in Selecting Friends

Much of the research on maximizing has focused on decisions in consumer related domains. For example, the general tendency to maximize has been found to be positively related to regret of expensive and inexpensive recent purchases, to decision times, and to the number of choices considered (Schwartz et al., 2002, Study 2). In the context of selecting jobs, the maximizing tendency was positively associated with the salary of an initial job offer for college seniors, but it was negatively associated with satisfaction of the salary (Iyengar et al., 2006). Additionally, after choosing ice cream from a local parlor, the maximizing tendency was negatively related to people’s satisfaction with the ice cream they selected (Dar-Nimrod, Rawn, Lehman, & Schwartz, 2009). The emphasis on consumer related decisions in research on maximizing is consistent with the fact that many of the items from the original Maximization Scale concern consumer decisions (e.g., “When shopping, I have a hard time finding clothing that I really love”). Moreover, consumer-related decisions such as product evaluation and choice can be tested relatively easily in laboratory settings.

Existing research on maximizing has focused on consumer decisions, and little is known about the maximizing tendency in social relationships. Social relationships are an important part of people’s daily lives and involve numerous decisions. In fact, one of the items in the original Maximization Scale, “I treat relationships like clothing: I expect to try a lot on before I get the perfect fit” (Schwartz et al., 2002), clearly indicates that the initial definition of the maximizing construct concerned friendship selection to some degree.

Nevertheless, decisions regarding friendship selection are qualitatively different from decisions about purchases in several ways. The options of potential friends are not presented to someone in the same way as options for material goods are often presented. For example, rather than making a decision at a particular moment,

people usually become friends over time, through shared experiences and time spent together. In social interactions, people weigh costs and rewards, and the advancement of the relationship is dependent on the satisfaction one receives from these interactions and from the forecasted or predicted satisfaction that future social interactions will bring. These decisions occur over time in stages (e.g., Altman & Taylor, 1973). Perhaps most important, friendships reflect mutual selection. Whereas purchase decisions involve only the consumer (products do not choose people), decisions about friendships take into account the reciprocal liking of others (Curtis & Miller, 1986).

Despite these differences in decision characteristics, people decide with whom they spend time at various points throughout the friendship formation process, and the tendency to maximize may play a role in such decisions. We acknowledge that different psychological processes might be important at different points in the friendship selection process and that maximizing in selecting friends could occur at each or all of the stages of friendship formation. Nevertheless, given that ours is the first study to examine the role of maximizing in friendship selection, we thought it best to focus broadly on the roles of maximizing in friendship selection. Accordingly, we defined maximizing in selecting friends as the tendency to find the optimal choice when selecting friends and when deciding with whom to spend time, and our measure assessed both of these tendencies. Some items referred to spending time with friends, and other items referred to selecting friends.

In addition, we conceptualized maximizing in friendship in terms of the three “sub-constructs” that have been used to define the overarching construct of maximization in other domains: alternative search, high standards, and decision difficulty (e.g., Nenkov, Morrin, Ward, Schwartz, & Hulland, 2008). In the context of social relationships, alternative search refers to the comparisons between time spent with certain friends with other possibilities, high standards refers to selecting friends who meet a certain threshold, and decision difficulty refers to having a hard time choosing who to spend time with. Thus, the alternative search and decision difficulty subscales tap into the friendship selection process that pertains to choosing to spend time with certain people, whereas the high standards subscale taps into the friendship selection process that pertains to choosing friends.

Only two studies, both reported in Mikkelsen and Pauley (2013), have examined relationships between the maximizing tendency and satisfaction/well-being in the domain of interpersonal relationships. In these two studies, participants in a romantic relationship completed measures of the maximizing tendency and of their satisfaction, quality of alternatives, investment, and commitment within romantic relationships (Mikkelsen & Pauley, 2013). The tendency to maximize was negatively related to satisfaction, investment, and commitment to the present relationship and was positively related to the evaluation of alternatives. This research suggests that the tendency to maximize in romantic relationships is negatively related to the commitment and the satisfaction people have to and with their romantic relationships.

Although research on maximizing in romantic relationships concerns a type of interpersonal relationship, these results cannot be generalized to other types of interpersonal relationships because romantic and nonromantic interpersonal relationships differ in important ways. One of the most important of these differences is that the normative pressure for exclusivity is stronger in romantic

relationships than it is in nonromantic friendships. In most societies, the general expectation is that people will have only one romantic partner at a time, whereas there are no such expectations for nonromantic friendships. By extension, the consequences of maximizing in terms of romantic relationships are more serious compared with the consequence of maximizing for nonromantic relationships because for romantic relationships the enjoyment or satisfaction from a relationship comes from just one person. In contrast, for nonromantic relationships enjoyment and satisfaction can come from relationships with more than one person.

### Number of Choices as a Moderator of Relationships Between Maximizing and Well-Being

The present studies also examined the possibility that the number of choices an individual has when selecting friends moderates the relationship between maximizing and well-being, such that negative relationships between maximizing and evaluations of chosen alternatives will be stronger when there are more versus when there are fewer alternatives. As people make a decision the tendency to maximize entails searching through the available options carefully, and after a decision has been made, maximizing includes ruminating about unselected choices. An increase in the number of available choices necessarily leads to an increase in the number of unselected choices and in turn, is likely to be associated with an increase in the number of positive attributes of unselected choices. In turn, such an increase should lead to stronger relationships between the tendency to maximize and dissatisfaction with the chosen alternative. When there is no choice, there is no opportunity to ruminate about forsaken alternatives, so maximizing will not be related to satisfaction. As the number of forsaken alternatives increases, opportunities to ruminate and regret increase, and the negative relationship between maximizing and satisfaction should become stronger.

Support for such a possibility has been found in studies of material possessions (Dar-Nimrod et al., 2009; Haynes, 2007) and in a cross-cultural study (Roets, Schwartz, & Guan, 2012). Dar-Nimrod et al. found that maximizing was negatively related to choice satisfaction when there were many options (e.g., 30 different chocolates, 200 flavors of ice cream) but was not related when there were few options (e.g., 6 different chocolates, 20 flavors of ice cream). Roets et al. found that in cultures with high levels of individual choice (e.g., the U.S. and Belgium) maximizing was negatively related to well-being, whereas in cultures with limited individual choice (e.g., China) maximizing and well-being were not related. They also found that maximizing was positively related to regret in all three countries and that regret mediated the negative relationship between maximizing and well-being in the U.S. and in Europe.

### Overview of Present Studies and Hypotheses

We examined processes similar to those that have been examined in previous research on maximizing but did so using different targets and levels of analyses. In one set of studies we examined maximizing in terms of choices about joining social groups. In another study we examined maximizing at the state (within-person) level. All previous research on maximizing has been done at the between-person level. Understanding how maximizing is

related to various outcomes at the within-person level is critical to understand the construct because relationships at different levels of analysis may represent different psychological processes (e.g., Affleck, Zautra, Tennen, & Armeli, 1999). Finally, we examined maximizing in terms of friendship selection.

The primary purpose of the present studies was to examine relationships between well-being and the tendency to maximize outcomes considered within the context of nonromantic friendships. This included examining the mediating role of regret and the moderating role of number of available options in these relationships. Our general hypotheses were that:

1. Well-being and maximizing would be negatively related.
2. Regret would mediate the relationships between maximizing and well-being. Initially, to replicate previous findings, we tested this hypothesis using a trait measure of general regret. In later studies, we measured regret more specifically, focusing on key decisions in the friendship formation process and by measuring daily states of regret over time.
3. Relationships between maximizing and well-being would vary as a function of the number of options available. Specifically, these relationships would be stronger when there were more choices available than when there were fewer.

In Study 1, we created a new scale to measure the maximizing tendency in friendship selections and examined relationships between this measure and well-being and regret. In Studies 2a and 2b, we examined the maximizing tendency of college undergraduates participating in the fraternity and sorority recruitment process, a structured decision in which people choose friendship groups. In Study 3, we examined within-person relationships among maximizing, well-being, and regret by measuring them on a daily basis.

In Study 4, we examined the impact of relational mobility on relationships between maximizing and well-being. Relational mobility is defined as the extent to which one can form new friends and leave existing relationships based on one's preferences (Yuki et al., 2007). We collected data in the U.S. and Japan, countries that have different mean levels of relational mobility (e.g., Schug, Yuki, & Maddux, 2010), and we compared the moderating effect of relational mobility on the relationship between well-being and maximizing in selecting friends. Because one can move in and out of friendships easily in high relational mobility societies, there are more options or choices for potential friends. These options could increase how much people regret their decisions when maximizing in selecting friends. Therefore, we hypothesized that the negative relationship between maximizing and well-being would be stronger in high relational mobility societies, such as the U.S., than it would be in low relational mobility societies, such as Japan.

## Study 1

### Method

Studies 1 and 3 were approved by the Protection of Human Subjects Committee at The College of William and Mary under the

title “Diary Study, 2013” and protocol number #PHSC-9838-dbnewman.

**Participants and procedure.** Two hundred fifty-four students ( $M_{\text{age}} = 18.85$ ;  $SD = 1.55$ ; 84 male, 170 female; 196 Euro American, 58 Asian or Asian American) were recruited from introductory psychology courses. For reasons unrelated to the present study, Asian Americans were slightly oversampled. The data were collected over two consecutive semesters, and 14 students provided data in both semesters. The second semester data of these 14 students were excluded from the analyses. Two students who failed to answer correctly two instructed response items (as recommended by Meade & Craig, 2012) were also excluded from the analyses.

**Measures.** The tendency to maximize in friendship selection was measured using an adapted version of the Relational Maximization Scale (RMS; Mikkelsen & Pauley, 2013). Items from this scale were categorized into three subscales according to the conceptualization of the maximizing construct: alternative search, high standards, and decision difficulty (Nenkov et al., 2008). Example items from each of the subscales of the maximizing scale for romantic relationships included the following: “I wonder if I would be happier in another relationship” (alternative search), “I don’t want to settle for a relationship that is ‘good enough’” (high standards), and “I have a hard time finding a relational partner that I really like” (decision difficulty). We adapted the items from this scale by replacing the words “romantic relationship” with “friendships” and by adding a form of the expression “spent time” in grammatically appropriate ways to capture the notion that people choose whom to spend their time with as they select their friends. Responses ranged from *completely disagree* to *completely agree* on a 7-point scale, and the items can be found in Table 1.

Because this was the first study to examine these relationships, we used a general trait level measure of regret rather than a domain specific measure. Regret was measured using the 5-item regret scale created by Schwartz et al., (2002). Participants responded by indicating the extent to which they agreed with each statement using a 7-point scale with endpoints labeled *completely disagree* to

*completely agree*. Participants also completed the 5-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) by indicating the extent to which they agreed with each statement, ranging from *strongly disagree* to *strongly agree* on a 7-point scale.

Next, participants completed measures of positive and negative affect based on those reported in Nezlek (2005). They responded to adjectives by indicating the extent to which they felt each emotion, ranging from *Do not feel this way at all*, to *Feel this way very strongly* on a 7-point scale. Enthusiastic, alert, happy, proud, excited, calm, peaceful, relaxed, contented, and satisfied measured positive affect; nervous, embarrassed, upset, stressed, tense, depressed, disappointed, sluggish, bored, and sad measured negative affect. Finally, participants completed the 10-item Rosenberg Self-Esteem Scale with responses ranging from *strongly agree* to *strongly disagree* on a 4-point scale (Rosenberg, 1965).

## Results

**Factor analysis.** To examine the psychometric properties of our friendship version of the RMS, we factor analyzed the 16 items of our measure. Following the recommendations of Costello and Osborne (2005), we used a maximum-likelihood factor analysis with a direct oblimin rotation. Based upon the first four eigenvalues (5.08, 3.15, 1.61, .89), we ran separate factor analyses with 2 and 3 factors. We chose a three-factor model because this model produced the highest loadings of the items on their respective factors, and the three-factor model corresponded well to the three subscales of maximizing, namely alternative search, high standards, and decision difficulty. 61.50% of the variance was explained by the three factors before extraction. The KMO test of sampling adequacy was .84, and the Bartlett test for sphericity was significant ( $p < .001$ ). A list of the items and their factor loadings can be found in Table 1. The correlation between the alternative search factor and high standards factor was .13; the correlation between alternative search and decision difficulty was .44; and the correlation between high standards and decision difficulty was .23.

Table 1  
Factor Loadings Presented for Each Item From a Pattern Matrix of a Factor Analysis in Study 1

Item	AS	HS	DD
1. I constantly compare the time I spend with people in my social group to time I could be spending with other people.	-.68		
2. No matter how satisfied I am with my social group, I am always on the lookout for better opportunities to spend time with other friends.	-.84		
3. I often wonder if I would be happier spending time with other friends.	-.75		
4. I always like to keep my options open for spending time with different groups of friends.	-.49		
5. I compare my current friendships to my past friendships to see if my current friendships are better.	-.34		
6. I won't settle for second best when I choose who to spend my time with.		.59	
7. I don't want to settle for friendships that are “good enough.”		.69	
8. I know what I want in friendships and I won't compromise.		.85	
9. I believe I can find the best friendships for me and I won't settle.		.93	
10. In my friendships, I am unwilling to settle for less than I feel I deserve.		.78	
11. Finding friends is difficult because I want to choose the perfect friends for me.			.50
12. I have a hard time choosing who to spend my time with.			.56
13. I always seem to struggle to pick the right people to hang out with.			.81
14. I have a hard time finding a social group that I really like spending time with.			.82
15. I only commit to spending time with people when I know all my expectations are going to be met.			.57
16. I am more selective about my choices about who to spend time with than most people.			.61

Note. AS = alternative search; HS = high standards; DD = decision difficulty.

Table 2  
Correlation Matrix of Entire Data Set With Cronbach's Alpha Scores Listed Along the Diagonal in Parentheses for Study 1

Variable	Mean (SD)	Maximizing	AS	HS	DD	SWLS	PA	NA	Regret	Self-esteem
Maximizing	3.53 (.94)	(.85)								
AS	3.55 (1.29)	.74***	(.78)							
HS	4.19 (1.39)	.66***	.18**	(.88)						
DD	2.95 (1.21)	.80***	.48***	.26***	(.83)					
SWLS	5.07 (1.39)	-.24***	-.29***	.18**	-.41***	(.91)				
PA	4.72 (.89)	-.19**	-.19**	.13*	-.40***	.64***	(.87)			
NA	3.53 (.98)	.27***	.31***	-.07	.35***	-.57***	-.44***	(.87)		
Regret	4.67 (1.27)	.34***	.37***	.08	.31***	-.36***	-.36***	.41***	(.83)	
Self-esteem	3.08 (.60)	-.26***	-.26***	.07	-.38***	.62***	.64***	-.58***	-.41***	(.92)

Note. Maximizing = combined subscales of maximizing; AS = alternative search; HS = high standards; DD = decision difficulty; SWLS = Satisfaction With Life Scale; PA = positive affect; NA = negative affect.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

In the original RMS, item 11, which corresponded to our item worded "Finding friends is difficult because I want to choose the perfect friends for me," loaded on the high standards subscale; however, in the present analyses, the item loaded on to the decision difficulty subscale. Given that this item had the weakest loading on the high standards subscale in the original RMS analyses and because of the wording of the item, we treated this item as part of the Decision Difficulty Scale for each of our studies. The reliabilities of the full scale and the resulting three subscales were all above or close to the .80, which Shrout (1998) categorized as "substantial" reliability.

**Correlations.** First, we examined correlations between our measures of well-being and of maximizing. As predicted, the total maximizing score was negatively related to satisfaction with life, positive affect, and self-esteem, and was positively related to negative affect and regret (see Table 2). Much of the recent research on maximizing in the general domain has emphasized analyses of the specific subscales because relationships between the subscales and other measures are not always consistent (e.g., Nenkov et al., 2008; Rim, Turner, Betz, & Nygren, 2011; Turner, Rim, Betz, & Nygren, 2012). Accordingly, in each of our studies, we conducted analyses using the total maximizing scale and the individual subscales.<sup>1</sup>

It appears that the negative relationships between our total maximizing score and measures of well-being and affect were primarily attributable to individual differences in the alternative search and decision difficulty subscales. Scores on these two subscales were negatively related to satisfaction with life, positive affect, and self-esteem, and were positively related to negative affect and regret. In contrast, scores on the high standards subscale were positively related to satisfaction with life and positive affect and were not significantly related to negative affect, regret, or self-esteem.

**Mediation analyses.** We tested the possibility that regret mediated the relationships between maximizing and well-being. Although it is not possible to draw definitive causal inferences based on coefficients from cross-sectional analyses (e.g., MacKinnon, Krull, & Lockwood, 2000), we examined mediation given the assumption in the literature that maximizing has a negative causal effect on well-being (e.g., Iyengar et al., 2006; Schwartz, 2004). Because high standards was not negatively related to well-being and due to our primary interest in the mediator of the negative

relationship between maximizing and well-being, the combined maximizing score, the alternative search subscale, and the decision difficulty subscale were used as predictors (X) in separate models. Satisfaction with life, positive affect, negative affect, and self-esteem were the outcome measures (Y) and regret was the mediator (M). In each model, the total effect (maximizing predicting well-being) was significant, as was the a-path (maximizing predicting regret) and the b-path (regret predicting well-being after controlling for maximizing).

We used a bootstrapping technique with 5000 bootstrap resamples and a bias-corrected confidence estimates with a 95% confidence interval of the indirect effects (Hayes, 2013; Preacher & Hayes, 2008). In each analysis, the indirect effect was significant because 0 was not between the lower confidence limit and the upper confidence limit. In some analyses, the direct effect between maximizing and well-being was not significant, indicating a strong mediation effect, whereas in other analyses, the direct effect was still significant, indicating weaker mediation. Nevertheless, because the indirect effect was significant in all analyses, these results suggest that regret mediated relationships between alternative search and decision difficulty subscales of our maximizing in selecting friends scale and well-being (see Table 3).

## Discussion

The results of this study suggest that our measure of the tendency to maximize rewards in friendship is reliable and measures the construct we intended it to measure. The reliability for the full scale was acceptable as were the reliabilities for the three subscales. Moreover, the factor structure of our scale was similar to the factor structure of the scale measuring the general tendency to maximize (Nenkov et al., 2008; Turner et al., 2012), and it was

<sup>1</sup> Although the high standards subscale has been shown to be positively related to well-being in contrast to the other subscales in some recent studies, we conducted analyses using both the total combined maximizing score and each individual subscale. According to recent theory (Cheek & Schwartz, 2016), having high standards or having a goal of choosing the best option is a necessary component of maximizing. Thus, it is important to consider both the composite score of maximizing in selecting friends to understand the effect of this multifaceted construct and the individual subscales to discern which aspects of maximizing are most detrimental to one's well-being.

Table 3  
 Mediation Models With Regret as Mediator, Maximizing Total Scores and Individual Subscales as Predictors, and Well-Being as Outcome for Study 1

Outcome (Y)	Max predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
SWLS	.46***	-.34***	-.35***	-.19*	-.16**	-.25	-.08
PA	.46***	-.24***	-.18**	-.07	-.11**	-.18	-.06
NA	.46***	.28***	.28***	.15*	.13**	.08	.20
SE	.46***	-.17***	-.17***	-.09*	-.08**	-.12	-.05

  

Outcome (Y)	Max AS predicting regret	Regret predicting outcome	Total effect	Direct effect	Indirect effect	LCL	UCL
SWLS	.36***	-.32***	-.32***	-.20**	-.11**	-.19	-.06
PA	.36***	-.24***	-.13**	-.04	-.09**	-.14	-.05
NA	.36***	.26***	.24***	.14**	.10**	.06	.15
SE	.36***	-.17***	-.12***	-.06†	-.06**	-.09	-.04

  

Outcome (Y)	Max DD predicting regret	Regret predicting outcome	Total effect	Direct effect	Indirect effect	LCL	UCL
SWLS	.33***	-.28***	-.47***	-.38***	-.09**	-.16	-.05
PA	.33***	-.20***	-.26***	-.20***	-.06**	-.10	-.03
NA	.33***	.26***	.28***	.20***	.08**	.05	.14
SE	.33***	-.15***	-.19***	-.14***	-.05**	-.08	-.03

Note. LCL = 95% lower confidence limit; UCL = 95% upper confidence limit; Max = combined subscales of maximizing; AS = alternative search; DD = decision difficulty; SWLS = Satisfaction With Life Scale; PA = positive affect; NA = negative affect; SE = self-esteem. Significance tests of indirect effects were tested at  $p < .05$  and  $p < .01$  only.  
 †  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

similar to the structure of a scale measuring the tendency to maximize in romantic relationships (Mikkelsen & Pauley, 2013). Correlations between the present measure and measures of well-being and regret were similar to those found in previous research on the general tendency to maximize, and such relationships support our conclusion that the present measure is a measure of the maximizing tendency in friendships.

Additional analyses suggested that relationships between well-being and maximizing in friendships were mediated by regret. Although causality could not be confirmed in this correlational study, the prevalent view in the maximizing research is that maximizing is a cause of well-being rather than the reverse (e.g., Iyengar et al., 2006; Schwartz, 2004). Assuming this causal relationship based on previous research, these results suggest that maximizing when selecting friends leads one to experience regret, and regret leads one to experience lower levels of life satisfaction and self-esteem and higher levels of negative affect.

### Maximizing and Selecting Friends in a Real-World Setting

The overall goal of Studies 2a and 2b was to examine how the tendency to maximize rewards from friendships is related to decisions people make about friendship choices in real world settings. We examined these issues within the context of the American collegiate system of fraternities and sororities.

On many American campuses students have the option of living in special residences that are limited to members of a specific “Greek” organization (a fraternity or a sorority). These social organizations provide important identities for their members and provide the structure and context for many activities. Most important for present purposes, membership is by invitation only. For someone to join such an organization they must be asked to join

and they must decide to join. In Study 2a we examined relationships between maximizing and personal decisions to join a Greek organization, and in Study 2b we examined relationships between maximizing and current decisions to offer membership in a Greek organization as well as previous personal decisions to join.

We thought that the process of offering and accepting memberships in these organizations would provide a good context within which relationships between friendship choice and the tendency to maximize in friendships could be examined. Establishing a friendship often occurs over a lengthy period and may entail extended exchanges and reciprocal influences (Curtis & Miller, 1986; Fehr, 1995), making it difficult to determine what has influenced the establishment of a friendship. In contrast, decisions to offer and accept memberships in Greek organizations are structured and occur over a relatively short period of time. During the recruitment process (referred to as “rush”), undergraduate students visit various different organizations by attending social events. Attending these events (often with accompanying informal social meetings) helps people learn more about each group and helps them decide which group they would like to join. Joining entails spending a significant amount of time with other members over the next few years, so in essence, people are deciding with whom they want to be friends. Current members of the organization make decisions about whom they would like to have join the organization, and so they are also making friendship choices.

Moreover, for both aspiring members and present members, people are choosing among a set of options. Which organization should I join (if any) and which individuals should we (the organization) recruit? Foregone (unchosen) alternatives figure prominently in the construct of maximizing, and given this, we thought the Greek “rush” system provided a setting within which we could examine the role of maximizing in friendship choice. In both

Table 4

Correlation Matrix of Maximizing and Well-Being Variables for New Fraternity and Sorority Members With Cronbach's Alpha Scores Listed Along the Diagonal for Study 2a

Variable	Mean (SD)	Max	AS	HS	DD	Sat	Regret	Positive affect	Negative affect
Max	3.77 (.82)	(.79)							
AS	3.94 (1.21)	.73***	(.75)						
HS	4.44 (1.25)	.55***	.08	(.83)					
DD	3.07 (1.14)	.76***	.43***	.07	(.78)				
Satisfaction	6.02 (1.24)	-.19*	-.12	.07	-.31***	(.92)			
Regret <sup>a</sup>	2.98 (2.07)	.16*	.10	-.04	.26**	-.70***	NA		
Positive affect	4.81 (.90)	.02	-.09	.16*	-.04	.44***	-.34***	(.84)	
Negative affect	3.13 (1.18)	.25**	.27**	-.06	.29***	-.39***	.59***	-.32***	(.90)

Note. Max = combined subscales of maximizing; AS = alternative search; HS = high standards; DD = decision difficulty; Sat = satisfaction.

<sup>a</sup> There was only one regret item, therefore no reliability was estimated.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

studies we expected that maximizing would be negatively related to well-being, and in both studies, we collected measures of well-being immediately after the rush process. Finally, to build on the previous study, we tested the possibility that a specific measure of regret would mediate the relationships between maximizing and satisfaction and affect. This would allow us to distinguish the current meditational process from previous studies.

## Study 2a

### Method

Studies 2a and 2b were approved by the Protection of Human Subjects Committee at The College of William and Mary under the title "Greek rush study" and protocol number #PHSC-2013-08-06-8857-dbnewman.

**Participants and procedure.** Undergraduate students who were participating in the fraternity and sorority recruitment process volunteered for this study; 149 undergraduate students ( $M_{\text{age}} = 18.54$ ,  $SD = .78$ ; 116 female, 33 male; 78.5% white) agreed to participate in the study by completing questionnaires sent to them by e-mail just after the formal recruitment process ended. In exchange for completing the questionnaire, participants were entered into a lottery for a chance to win a \$25 gift card.

**Materials.** Immediately after making the decision to join a fraternity or sorority, participants were asked to complete the maximizing in selecting friends scale described in Study 1. The maximizing items were followed by several well-being measures that were adapted from some of the well-being items from a similar study that addressed the well-being of college seniors during a job recruitment process (Iyengar et al., 2006).

Three items measured participants' satisfaction with their decision to join their particular fraternity or sorority. "How satisfied are you with your decision to join your fraternity/sorority?" "How satisfied are you with the outcome of the recruitment process?" and "How confident are you that you made the right choice to join your fraternity/sorority?" Responses to the first two questions ranged from *very dissatisfied* to *very satisfied*, whereas the responses to the last question ranged from *very unconfident* to *very confident* on a 7-point scale. We used satisfaction with this particular decision as a proxy for satisfaction with their social relationships given that satisfaction with specific domains (e.g., cho-

sen fraternity/sorority) relates positively to satisfaction with a global domain (e.g., social relationships) (Oishi & Diener, 2001).

Regret was measured with a single item, "I wish the rush process had gone differently for me." All responses ranged on a 7-point scale from *strongly disagree* to *strongly agree*.

Positive and negative affect were assessed by asking participants to think about the rush process in which they had just participated. Twenty-three adjectives were listed after participants were asked the following: "To what extent do each of the following describe how you generally felt during the rush process?" Positive affect adjectives were: enthusiastic, calm, alert, peaceful, happy, relaxed, proud, contented, satisfied, and excited. Negative affect items were: stressed, depressed, embarrassed, disappointed, upset, sluggish, tense, bored, nervous, sad, overwhelmed, regretful, and frustrated (Nezlek, 2005). The final three adjectives for negative affect were added because they were used in a similar study measuring negative affect in response to the decision to accept a job during and after an interview process (Iyengar et al., 2006).

The participants were also asked, "To what extent did the following factors affect your decision to join a fraternity/sorority?" The factors or reasons were: potential friendships, legacy (i.e., whether a family member was an alum of the fraternity/sorority), reputation or prestige of fraternity/sorority, location of fraternity/sorority house, aesthetic qualities of fraternity/sorority house, and cost. These specific reasons were selected based on an exhaustive list prepared by research assistants who were already part of a fraternity or sorority. Responses ranged from *not at all* to *very much* on a 7-point scale.<sup>2</sup>

### Results

To demonstrate that the potential for forming friendships was the leading influence guiding participants' decisions to join a specific fraternity or sorority we conducted a one-way repeated measures ANOVA in which repeated measure was the extent to which each of the five reasons described above influenced partic-

<sup>2</sup> The new students answered some additional questions about the number of events and parties they attended, when they decided they would rush, when they made their final decision, etc., as well as some experimental measures not related to well-being.

Table 5

Mediation Models With Regret as Mediator, Maximizing Total Scores and Individual Subscales as Predictors, and Well-Being as Outcome for Study 2a

Outcome (Y)	Maximizing predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
Potential members							
Satisfaction	.41 <sup>†</sup>	-.41***	-.28 <sup>†</sup>	-.11	-.17 <sup>†</sup>	-.37	.00
PA	.41 <sup>†</sup>	-.15***	.02	.08	-.06*	-.15	-.00
NA	.41 <sup>†</sup>	.32***	.36*	.23*	.13 <sup>†</sup>	-.00	.27
Outcome (Y)	Max AS predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
Satisfaction	.17	-.42***	-.12	-.05	-.07	-.20	.05
PA	.17	-.15***	-.06	-.04	-.02	-.08	.02
NA	.17	.33***	.27**	.21**	.05	-.04	.15
Outcome (Y)	Max DD predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
Satisfaction	.47**	-.40***	-.34*	-.15	-.19**	-.33	-.07
PA	.47**	-.15***	-.03	.04	-.07**	-.14	-.03
NA	.47**	.32***	.30**	.15 <sup>†</sup>	.15**	.06	.24

Note. LCL = 95% lower confidence limit; UCL = 95% upper confidence limit; AS = alternative search; DD = decision difficulty; PA = positive affect; NA = negative affect. Significance tests of indirect effects were tested at  $p < .05$  and  $p < .01$  only.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

ipants' decisions. Mauchly's test for sphericity was significant,  $\chi^2(14) = 86.65$ ,  $p < .001$ , and so we used the Huynh-Feldt estimate of sphericity ( $\epsilon = .86$ ), and found a significant main effect,  $F(4.29, 635.06) = 158.91$ ,  $p < .001$ ,  $\eta_p^2 = .52$ . A post hoc comparison using a Bonferroni correction indicated that the mean rating of potential friendships ( $M = 6.48$ ,  $SD = 1.01$ ) was significantly higher than reputation ( $M = 4.26$ ,  $SD = 1.88$ ), which had the next highest rating,  $p < .001$ . Thus, the value of potential friendships was the reason that influenced the new fraternity and sorority students the most as they made their decisions.

We calculated correlations between each of the maximizing variables and the well-being variables (see Table 4). The combined maximizing score related negatively to satisfaction and positively to regret and negative affect. The decision difficulty subscale had the strongest and most negative relationships to well-being, whereas the high standards subscale was positively related to positive affect. Alternative search was positively related to negative affect.

Similar to Study 1, we tested for mediation for the total maximizing score and for the alternative search and decision difficulty subscales by using a bootstrapping technique with 5000 bootstrap resamples (Hayes, 2013; Preacher & Hayes, 2008). The indirect effects involving satisfaction and negative affect did not reach conventional levels of significance at the 95% confidence interval for the total maximizing scores or for alternative search, but they did for decision difficulty (see Table 5). On an exploratory basis, we also used the 90% CI for the total maximizing score and found that the indirect effects were marginally significant for satisfaction ( $\beta = -.17$ ,  $SE = .09$ , 90% CI  $[-.335, -.024]$ ) and negative affect ( $\beta = .13$ ,  $SE = .07$ , 90% CI  $[-.022, .251]$ ) using bias-corrected confidence estimates with 90% confidence intervals. The indirect effect for positive affect was also significant ( $\beta = -.06$ ,  $SE = .04$ , 95%

CI  $[-.146, -.003]$ ). Given that the total effect was not significant ( $\beta = .02$ ,  $SE = .12$ ,  $p = .8$ ), the significant indirect effect suggests that regret acted as a suppressor in these models.

## Discussion

In general, the tendency to maximize among those joining fraternities and sororities was negatively related to well-being and satisfaction with their selection after making the decision to join. This negative relationship was mediated by regret with the recruitment process. Consistent with Study 1, decision difficulty was most strongly related to the well-being measures, and high standards either did not relate significantly to well-being or had an opposite pattern of findings compared to the other subscales. The general pattern of findings suggests that when selecting a group of friends, maximizing relates negatively to decision satisfaction.

## Study 2b

In addition to the decision new students make to join a fraternity or sorority, current members have the opportunity to maximize when they select which new students they want to accept into their fraternity or sorority. This decision provided another opportunity to examine a friendship selection decision. In a conceptual replication of Study 2a, we also asked current fraternity and sorority members to describe their decision to join their fraternity or sorority to examine the long-term effects of maximizing. We hypothesized that, similar to Study 2a, maximizing would be negatively related to satisfaction with decisions to accept new members into the fraternity or sorority and would be negatively related to members' satisfaction with their decision to join their current social organization.



Table 6

Correlation Matrix of Maximizing and Well-Being Variables for Current Fraternity and Sorority Members With Cronbach's Alpha Scores Listed Along the Diagonal for Study 2b

Outcome	Mean (SD)	Max	AS	HS	DD	Current rush process				Past decision		
						Sat	Reg	PA	NA	Sat	Reg	
Max	3.51 (.83)	(.80)										
AS	3.50 (1.21)	.73***	(.72)									
HS	4.55 (1.28)	.58***	.02	(.83)								
DD	2.66 (1.06)	.82***	.57***	.19*	(.75)							
During current rush process												
Satisfaction	5.86 (1.07)	-.26***	-.21**	-.04	-.32***	(.90)						
Regret	3.33 (1.45)	.25**	.32***	-.11	.33***	-.44***	(.75) <sup>a</sup>					
PA	4.69 (1.09)	-.14 <sup>†</sup>	-.16*	.12	-.26**	.47***	-.24**	(.87)				
NA	2.69 (1.14)	.40***	.33***	.05	.47***	-.28***	.31***	-.38***	(.90)			
Regarding past decision												
Satisfaction	6.18 (1.31)	-.29***	-.36***	.16*	-.43***	.53***	-.34***	.34***	-.26**	(.94)		
Regret	1.68 (1.27)	.31***	.36***	-.14 <sup>†</sup>	.44***	-.54***	.36***	-.36***	.28***	-.80***	(.91)	

Note. Max = combined subscales of maximizing; AS = alternative search; HS = high standards; DD = decision difficulty; PA = positive affect; NA = negative affect; Sat = satisfaction; Reg = regret.

<sup>a</sup> The mean, standard deviation, and reliability reflect the sorority members who completed all 3 regret items. The mean, standard deviation, and reliability of the fraternity members who completed just 2 regret items were 3.27, 1.47, and .56, respectively.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## Method

**Participants and procedure.** Similar to the study with new fraternity and sorority members, current fraternity and sorority members were emailed questionnaires immediately following the recruitment process; 172 ( $M_{\text{age}} = 20.22$ ,  $SD = 1.10$ ; 83 female, 89 male; 80.2% white) undergraduate students from the same university on the east coast participating in the same recruitment process volunteered for the study in exchange for the possibility of winning a \$25 gift card.

**Measures.** Participants first completed the maximizing in selecting friends scale that was administered to the new fraternity and sorority members and then they completed measures of well-being.

Satisfaction was measured with the items "How satisfied are you with your decision to offer bids to those students who have now joined your fraternity/sorority?" and "How confident are you that you made the right choices in offering bids to those students who have now joined your fraternity/sorority?" Responses to the first question ranged from *very dissatisfied* to *very satisfied*, and responses to the second question ranged from *very unconfident* to *very confident*.

Current members' regrets about decisions to accept new fraternity and sorority members was measured with the items, "I wish we had offered bids to different students during the rush process," and "I wish I had been more involved in the entire recruitment process" for both fraternities and sororities. Because the fraternity and sorority processes differed, current sorority members were asked an additional question "I wish I had scored conversations with potential new members differently." Responses ranged from *strongly disagree* to *strongly agree* on a 7-point scale.

The current fraternity and sorority members were also asked to reflect on the recruitment period and report the extent to which they experienced the same emotions used to describe positive and negative affect that were administered to the new fraternity and sorority members. They were also asked the question, "To what extent did the following factors affect your decision to offer bids

to students to join your fraternity/sorority?" Responses ranged from *not at all* to *very much* and included the following factors: potential friendships, legacy of the students, academic achievement/potential, perceived level of commitment to fraternity/sorority, and perceived level of maturity.

Next, the current fraternity and sorority members were asked to reflect on their own decision to join their fraternity or sorority in the past. Their satisfaction with their decision was measured with two of the same items that were used for the new fraternity and sorority members: "How satisfied are you with your decision to join your fraternity/sorority?" and "How confident are you that you made the right choice in joining your fraternity/sorority?"

Regret with their decision was measured with three items: "I wish I had never joined my fraternity/sorority," "I regret my decision to join my fraternity/sorority," and "I often consider resigning from my fraternity/sorority." Demographic questions followed at the end.<sup>3</sup>

## Results

Similar to Study 2a, we first analyzed the different reasons that participants reported as influences on their decisions to accept new members into their fraternity or sorority. We conducted a repeated measures ANOVA with the five options as outcomes. Mauchly's test for sphericity was again significant,  $\chi^2(9) = 68.17$ ,  $p < .001$ ; we used the Hunnh-Feldt estimate of sphericity ( $\epsilon = .85$ ), and found a significant main effect,  $F(3.40, 581.70) = 107.97$ ,  $p < .001$ ,  $\eta_p^2 = .39$ . A post hoc comparison using Bonferroni correction indicated that the mean rating of potential friendships ( $M = 6.19$ ,  $SD = 1.08$ ) was significantly higher than perceived level of maturity ( $M = 5.38$ ,  $SD = 1.34$ ), which had the next highest rating,  $p < .001$ . Thus, potential friendships was the reason that

<sup>3</sup> Similar to the new students, the current fraternity and sorority students received a few experimental measures unrelated to well-being and are not reported here.

Table 7

*Mediation Models With Regret as Mediator, Maximizing as Predictor, and Well-Being as Outcome for Study 2b*

Outcome (Y)	Maximizing predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
<b>Current members</b>							
Satisfaction current	.44**	-.29***	-.34***	-.21*	-.13**	-.24	-.05
PA	.44**	-.17**	-.18 <sup>†</sup>	-.11	-.07**	-.16	-.02
NA	.44**	.18**	.55***	.47***	.08**	.02	.17
Satisfaction past	.43**	-.82***	-.46***	-.10	-.36**	-.60	-.16
<b>Alternative search</b>							
Outcome (Y)	Max AS predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
Satisfaction current	.38***	-.30***	-.18*	-.07	-.12**	-.19	-.06
PA	.38***	-.16*	-.15 <sup>†</sup>	-.08	-.06**	-.13	-.02
NA	.38***	.18**	.31***	.25**	.07**	.02	.14
Satisfaction past	.36***	-.80***	-.40***	-.11 <sup>†</sup>	-.29**	-.47	-.15
<b>Decision difficulty</b>							
Outcome (Y)	Max DD predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
Satisfaction current	.45***	-.27***	-.32***	-.20**	-.12**	-.21	-.07
PA	.45***	-.13*	-.27***	-.21*	-.06*	-.14	-.01
NA	.45***	.14*	.51***	.45***	.06*	.01	.14
Satisfaction past	.50***	-.79***	-.54***	-.14*	-.40**	-.60	-.23

Note. LCL = 95% lower confidence limit; UCL = 95% upper confidence limit; AS = alternative search; DD = decision difficulty; PA = positive affect; NA = negative affect. Significance tests of indirect effects were tested at  $p < .05$  and  $p < .01$  only.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

current fraternity and sorority members rated as the most influential reason in their decision to accept new students.

Correlations between each of the maximizing variables and the well-being variables are presented in Table 6. The combined maximizing score was negatively related to satisfaction with the rush process and was positively related to negative affect during rush and to regret with the decision to accept new members. Additionally, the combined maximizing score was negatively related to current satisfaction with the present organization and was positively related to regret for their decision to join their current fraternity or sorority. Similar to the results of our previous studies, the relationship between alternative search and decision difficulty was stronger than the relationships between high standards and the other two subscales. Alternative search and decision difficulty were negatively related to the well-being variables similar to the combined score of maximizing, whereas high standards was positively related to satisfaction with the current fraternity or sorority and was not significantly related to any of the other variables.

Similar to Study 2a, we ran mediation analyses by using a bootstrapping technique with 5000 bootstrap resamples and bias-corrected confidence estimates with 95% confidence intervals for the total maximizing score and the alternative search and decision difficulty subscales (Hayes, 2013; Preacher & Hayes, 2008). The indirect effects for total maximizing scores, alternative search, and decision difficulty were significant for satisfaction with the current recruitment process, positive affect and negative affect during the recruitment process, and satisfaction with their previous decision to join their respective fraternity or sorority (see Table 7).

## Discussion

In Study 2b current fraternity and sorority members reflected on two different friendship selection decisions, their decision to ac-

cept new members and their past decision to join their respective fraternity or sorority. Across the two fraternity and sorority studies, the tendency to maximize in selecting friends related negatively to their well-being measured just after the recruitment process, and these relationships were mediated by specific measures of regret. These findings concern specific decisions in the domain of friendship selections made in a naturalistic setting by members of a particular subpopulation.

## Study 3

In the next study, we aimed to extend our findings in three important ways. First, within the context of a daily diary study, we moved beyond between-person analyses by measuring daily states of maximizing in selecting friends and by examining within-person relationships between maximizing and well-being. Such within-person relationships do not necessarily represent the same relationships as the between-person relationships reported in Studies 1 and 2 because relationships at the between- and within-person levels of analysis are independent of each other (e.g., Nezlek, 2001). Additionally, these levels of analysis may represent unique psychological processes (Affleck et al., 1999).

For example, consider the relationship between exercise and the risk of a heart attack. Individuals are more likely to experience a heart attack while exercising (a positive within-person relationship), but individuals who exercise often are less likely to experience a heart attack (a negative between-person relationship; Curran & Bauer, 2011). Moreover, the general tendency to maximize has been conceptualized as a dispositional individual difference only (e.g., Rim et al., 2011; Schwartz et al., 2002). Given that many personality traits may vary within-individuals on a daily basis (e.g., Fleeson, 2001), we hypothesized that maximizing in the domain of selecting friends would vary within individuals and that

the daily state of maximizing would be negatively related to daily states of well-being.

Second, we examined daily states of regret as a mediator between daily maximizing and daily well-being. We predicted that, similar to maximizing, daily states of regret would vary within individuals, and that daily states of regret would mediate the within-person relationships between maximizing and well-being.

Third, we tested the moderating effect of the number of choices on relationships between maximizing and well-being. Because maximizers tend to regret their decisions, an increase in the number of choices presented to maximizers is particularly detrimental to their satisfaction with their decision (Haynes, 2007; Schwartz, 2004). In terms of friendships, we operationalized the number of choices by measuring the daily number of friends or acquaintances a person met each day. We hypothesized that the negative relationship between daily maximizing and daily well-being would be stronger on days when people met more new friends or acquaintances in comparison to days when people met fewer new friends or acquaintances.

## Method

**Participants and procedure.** Participants were 130 undergraduate students who received research participation credit ( $M_{\text{age}} = 18.66$ ,  $SD = .99$ , 63.8% female), and they were the same participants who completed the trait level measures from one of the semesters of Study 1. Participants attended orientation sessions prior to the study during which they were told that the purpose of the study was to learn about daily experiences over time. Participants received daily questionnaires every evening at 9:00 p.m. for 14 consecutive days, and they were told to complete the daily questionnaire just before going to bed. A reminder email was sent at 7:00 a.m. the following morning to those students who forgot to complete the questionnaire the night before. Entries were accepted until noon, consistent with the procedure used in previous similar studies (e.g., Oishi, Diener, Choi, Kim-Prieto, & Choi, 2007).

In total, 1710 daily entries were collected from the participants. Entries that were either incomplete, completed after noon, or were completed on the same day by the same participant were eliminated. Additionally, if the participant failed to answer an instructed response item ("please select the choice 'disagree' for this item") or if they entered the same response across an entire page the entry was eliminated (Meade & Craig, 2012). Sixty-one entries (3.6%) were removed from final analyses, which left 1649 entries. The mean number of valid daily entries completed by each participant was 12.68 ( $SD = 1.66$ ).

**Measures.** Daily questionnaires included scales that measured constructs that have been reliably used in previous studies at the trait-level but were worded at the daily level to measure states rather than traits and included some slight modifications (Nezlek, 2005, 2012). Daily tendencies to maximize included only the alternative search and decision difficulty subscales because in Studies 1 and 2 and in studies measuring general domains of maximizing (Nenkov et al., 2008; Rim et al., 2011) the high standards subscale was not and has not been found to be consistently related to well-being.

The daily alternative search items were "Today, I often wondered if I would have been happier spending time with other friends"; "No matter how satisfied I was with my social group

today, I was always on the lookout for better opportunities to spend time with other friends"; and "Today I tried to keep my options open for spending time with different groups of friends." The daily decision difficulty items included were "Today, I had a hard time choosing who to spend my time with"; "I had trouble picking who to hang out with today"; and "Today I had a hard time finding a social group that I wanted to spend time with." Responses ranged from *strongly disagree* to *strongly agree* on a 7-point Likert scale. We also asked participants, "How many new friends and/or acquaintances did you meet today?" Response options ranged from 0 to 10 or more.

Daily satisfaction with life items included two items that have been used previously (Oishi et al., 2007): "How was today?" with a 7-point Likert scale that ranged from *terrible* to *excellent*; and "How satisfied were you with your life today?" with a 7-point Likert scale that ranged from *very dissatisfied* to *very satisfied*.

To measure daily positive and negative affect, we asked participants to indicate how strongly they felt certain emotions on each day using a 7-point scale ranging from *did not feel this way at all* to *felt this way very strongly* with a midpoint *felt this way moderately*. Adjectives used to measure positive affect were enthusiastic, calm, alert, peaceful, happy, relaxed, proud, contented, satisfied, and excited. Adjectives used to measure negative affect were stressed, depressed, embarrassed, disappointed, upset, sluggish, tense, bored, nervous, and sad (Nezlek, 2005). Self-esteem was measured with 4 items from Rosenberg's (1965) Self-Esteem Scale, reworded at the daily level in a similar manner to prior diary studies (e.g., Nezlek & Plesko, 2001, 2003). These 4 items included "Today, I felt like a failure"; "Today, I felt that I had many good qualities"; "Today, I thought I was no good at all"; and "Today, on the whole, I was satisfied with myself." Responses ranged from *very uncharacteristic of me today* to *very characteristic of me today* on a 7-point scale.

Finally, daily regret was measured using three items based on the regret scale of Schwartz et al., (2002). The three items were "Whenever I made a choice today, I was curious about what would have happened if I had chosen differently"; "Today, when I thought about how I'm doing in life, I often thought about the opportunities I had passed up"; and "Whenever I made a choice today, I tried to get information about how the other alternatives would have turned out." Responses ranged on a 7-point scale from *strongly disagree* to *strongly agree*.

Table 8  
Descriptive Statistics for Daily Measures for Study 3

Daily measure	Mean	Variance		Reliability
		Day	Person	
Maximizing: alternative search	2.02	.86	.61	.51
Maximizing: decision difficulty	1.81	.65	.42	.75
Satisfaction with life	4.81	1.21	.64	.81
Positive affect	4.04	.77	.75	.74
Negative affect	2.91	.93	.85	.65
Self-esteem	5.23	.92	.92	.62
Regret	2.99	.94	1.76	.59

Table 9  
*Unstandardized Coefficients From the Mediation Models for the Combined Maximizing Score and Subscales, Including Total, Indirect, Direct Effects, and the a- and b-Paths for Study 3*

Outcome (Y)	Maximizing predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
SWLS	.34***	-.25***	-.09 <sup>†</sup>	-.01	-.08**	-.13	-.03
PA	.34***	-.14***	-.01	.03	-.04*	-.07	-.01
NA	.34***	.20***	.13***	.07*	.07***	.03	.11
SE	.34***	-.25***	-.13**	-.04	-.09***	-.14	-.04

  

Outcome (Y)	Max AS predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
SWLS	.25***	-.24***	-.13**	-.06	-.07**	-.11	-.03
PA	.25***	-.13***	-.05 <sup>†</sup>	-.01	-.03**	-.06	-.01
NA	.25***	.20***	.10***	.05 <sup>†</sup>	.06***	.03	.09
SE	.25***	-.25***	-.12**	-.05	-.07**	-.11	-.02

  

Outcome (Y)	Max DD predicting regret (a-path)	Regret predicting outcome (b-path)	Total effect (c-path)	Direct effect (c' path)	Indirect effect (ab-path)	LCL	UCL
SWLS	.25***	-.24***	-.11*	-.05	-.07**	-.12	-.02
PA	.25***	-.13***	-.01	.02	-.03*	-.06	-.00
NA	.25***	.20***	.13***	.09***	.06**	.02	.10
SE	.25***	-.25***	-.14***	-.07 <sup>†</sup>	-.09***	-.14	-.04

Note. LCL = 95% lower confidence limit; UCL = 95% upper confidence limit; AS = alternative search; DD = decision difficulty; SWLS = Satisfaction With Life Scale; PA = positive affect; NA = negative affect; SE = self-esteem.  
<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Results**

**Overview of analyses.** We conceptualized the data as a hierarchically nested data structure with days nested within persons. We used the program HLM 7.0 (Raudenbush, Bryk, & Congdon, 2011) to analyze these data following guidelines offered by Nezlek (2012). First, we examined the reliabilities of the daily measures. Then we examined the within-person relationships between daily maximizing and daily well-being. Next, we tested the hypothesis that daily regret would mediate the relationship between daily maximizing and daily well-being. Finally, and critical to the main hypothesis of this study, we examined the moderating effect that the number of new friends or acquaintances people met each day had on the within-person relationship between maximizing and well-being.

**Reliabilities.** We examined the reliability of our daily measures using three-level models with *i* items nested within *j* days, and *j* days nested within *k* people (Nezlek, in press). In such analyses, the reliability of the level 1 coefficient is conceptually equivalent to a Cronbach’s alpha, adjusted for day and person level differences. The initial analyses of the reliabilities of the daily measures found that the reliability of the measure of the daily maximizing subscale alternative search was low (.33). We eliminated one item (“Today I tried to keep my options open for spending time with different groups of friends”) to improve the reliability of this measure. The reliabilities of the daily measures are presented in Table 8.

Table 8 also contains a summary of the results of two level (days within persons) unconditional models (no predictors at either level of analysis) for each daily measure. Such models provide the basic descriptive statistics for level 1 measures in a multilevel design. Two aspects of these analyses are noteworthy: First, the means for

all measures were sufficiently far from scale endpoints so that floor and ceiling effects were probably not problems. Second, there was ample variance at the within-person level of analysis for all measures, suggesting that analyses at the within-person level might be productive.

**Within-person relationships between maximizing and well-being including regret as a mediator and number of new acquaintances as a moderator.** For this study, our primary hypotheses concerned within-person relationships between daily well-being and daily maximizing in terms of friendships. In these two-level models, *i* days were nested within *j* people. To understand more clearly within-person relationships between well-being and maximizing, we examined relationships between each measure of daily well-being (satisfaction with life, positive affect, negative affect, and self-esteem) and each measure of daily maximizing (alternative search and decision difficulty) separately. Each maximizing subscale was entered group mean centered and randomly varying (Nezlek, 2001). The model is presented below.<sup>4</sup>

$$\text{Within-person: } y_{ij}(\text{well-being}) = \beta_{0j} + \beta_{1j}(\text{maximizing subscale}) + r_{ij}$$

<sup>4</sup> We also conducted analyses in which we modeled differences in daily satisfaction with life, self-esteem, and positive and negative affect as a function of both daily decision difficulty and alternative search. The results of these analyses were not consistent. For satisfaction with life, only alternative search was significant when both predictors were included as models. In contrast, for negative affect, only decision difficulty was significant. For self-esteem, both were significant. Given this, and the fact that no comparison of the slopes of the two predictors indicated that they were significantly different, we thought it best to present the results of the analyses with only one predictor.

$$\text{Between-person : } \beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

The results of these analyses (the  $\gamma_{10}$  coefficients from the above model) are presented in Table 9 as total effects. As hypothesized, both aspects of daily maximizing in terms of friendships were negatively related to daily life satisfaction and daily self-esteem and were positively related to daily negative affect. Neither aspect of maximizing in terms of friendships was significantly related to positive affect, although the negative relationship between positive affect and alternative search was marginally significant.

To build on the regret mediation analyses from the previous studies, we tested the mediation effect of daily states of regret on the within-person relationships between daily maximizing states and daily well-being states. These particular regret mediation analyses further our understanding of the mediation process by moving beyond single time point measures. We hypothesized that a daily state of regret would mediate these within-person relationships.

To test this hypothesis, we used a multilevel SEM technique to estimate the indirect effects (Preacher, Zhang, & Zyphur, 2011; Preacher, Zyphur, & Zhang, 2010) as an improvement on traditional multilevel modeling techniques that potentially conflate between- and within-person components of indirect effects (e.g., Bauer, Preacher, & Gil, 2006). We used MPlus 6.12 (Muthén & Muthén, 2010) to calculate the within-person components of the indirect effects from 1–1–1 mediation models. Because we hypothesized that daily regret would mediate the relationships between maximizing and well-being, we report the within-person components of the indirect effects. Total effects and direct effects were calculated using traditional multilevel modeling techniques as described above. Similar to the mediation analyses presented in Studies 1 and 2, we used the combined maximizing construct as well as the individual subscales of maximizing in separate analyses.

As can be seen from the analyses in Table 9, when regret was included as a mediator, the indirect effects for the total maximizing scores were all significant. The direct effect between well-being and maximizing was not significant for satisfaction with life and self-esteem, which indicates a strong mediation effect. The direct effect was significant for negative affect, which indicates a weaker

mediation effect. The nonsignificant total and direct effects for positive affect indicate that regret suppressed the effect of maximizing on positive affect. A similar pattern emerged for the individual subscales of alternative search and decision difficulty (See Table 9).

Furthermore, it is useful to demonstrate significant relationships from the predictor (maximizing) to the mediator (regret), and significant relationships from the mediator to the outcome measures (satisfaction with life, self-esteem, positive affect, and negative affect) after controlling for the predictors. In separate models, daily regret was positively related to daily maximizing. Moreover, regret was significantly related to satisfaction with life, positive affect, negative affect, and self-esteem after controlling for maximizing (see Table 9).

**Number of daily friendship options as a moderator of relationships between maximizing and well being.** The next set of analyses tested the hypothesis that the within-person relationships between maximizing in selecting friends and well-being would be moderated by the number of friendship options people had. We operationalized the number of friendship choices as the number of friends and/or acquaintances a person met on a particular day. We hypothesized that relationships between maximizing in selecting friends and daily well-being would be stronger on days when people met more new potential friends than on days when they met fewer potential friends.

To test this hypothesis, we conducted level 1 moderation analyses. Separate analyses were run for each of the dependent variables with each of the maximizing subscales as predictors (separately). The number of friends met each day and the maximizing subscale were entered group-mean centered (the  $\beta_{1j}$  and  $\beta_{2j}$  coefficients in the model below). The interaction term (the  $\beta_{3j}$  coefficient) was created by zero-centering each predictor (subtracting a participant's mean score from each daily score) and then multiplying these scores by each other. This interaction variable was entered uncentered at level 1. For a more detailed description of this procedure see Nezlek (2011, pp. 37–41).

Within-person :  $y_{ij}(\text{well-being}) =$

$$\beta_{0j} + \beta_{1j}(\text{number of friends met}) + \beta_{2j}(\text{maximizing subscale})$$

$$+ \beta_{3j}(\text{number of friends} * \text{maximizing subscale}) + r_{ij}$$

Between-person :  $\beta_{0j} = \gamma_{00} + u_{0j}$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

$$\beta_{2j} = \gamma_{20} + u_{2j}$$

$$\beta_{3j} = \gamma_{30} + u_{3j}$$

The coefficients from these analyses are presented in Table 10. First, it is important to note that the number of possible new friends encountered each day was positively related to satisfaction with life, self-esteem, and positive affect when alternative search or decision difficulty was included in the model. The number of possible new friends encountered was negatively related to negative affect when decision difficulty was included in the model but not when alternative search was included in the model. Second, the interaction term of alternative search and number of friends was significant in all the analyses of all measures of well-being, whereas the interaction term of decision difficulty and number of

Table 10  
Coefficients From Analyses of Well-Being Testing the Moderating Effect of Number of Friends on Relationships Between Well-Being and Maximizing for Study 3

Analysis	Well-being	Number of friends	Maximizing subscale	Interaction
Alternative search	SWLS	.09***	-.13***	-.04**
	PA	.04**	-.05 <sup>†</sup>	-.02*
	NA	-.01	.10***	.03*
	SE	.05***	-.12**	-.03*
Decision difficulty	SWLS	.09***	-.15**	-.00
	PA	.04***	-.03	-.01
	NA	-.02*	.13***	.01
	SE	.06***	-.15***	-.01

Note. SWLS = Satisfaction With Life Scale; PA = positive affect; NA = negative affect; SE = self-esteem.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 11  
*Predicted Values Illustrating Interaction of Alternative Search and Number of Friends in the Analysis of Daily Well-Being for Study 3*

Number of friends	High		Low		AS effect	
	High	Low	High	Low	High friends	Low friends
Satisfaction with life	4.80	5.16	4.57	4.70	-.37	-.13
Positive affect	3.88	4.05	3.78	3.81	-.17	-.03
Negative affect	2.89	2.61	2.86	2.77	.28	.09
Self-esteem	5.17	5.50	5.06	5.18	-.33	-.12

*Note.* AS (alternative search) effect is the difference between the estimated mean well-being for high AS days (+1 *SD*) and low AS days (−1 *SD*).

friends was not significant in any of the analyses of measures of well-being.

To understand the nature of these interactions we estimated predicted values for observations one standard deviation above and one standard deviation below the mean of alternative search and number of friends.<sup>5</sup> The predicted scores, representing the interaction for each measure of well-being, are presented in Table 11. The interaction was the same for all measures. As expected, the effect for alternative search (the difference in well-being between days that were + 1 *SD* on alternative search and those that were −1 *SD*) was larger on days when people had more opportunities to meet new friends (+1 *SD* on number of friends) than it was on days when people had fewer opportunities to meet new friends (−1 *SD* on number of friends).

## Discussion

As hypothesized, daily maximizing tendencies were negatively related to daily well-being with the exception of daily positive affect. Consistent with the findings at the between-person level of analysis, the within-person relationships between maximizing and life satisfaction, negative affect, and self-esteem were mediated by daily regret. This particular mediation finding of regret rules out the possibility that maximizers generally feel more regret at the individual level which leads to lower well-being. Rather, daily states of regret that vary within individuals explain why maximizing in selecting friends relates negatively to well-being at the within-person level.

Additionally, the negative relationships between alternative search maximizing and the well-being measures were moderated by the number of friends or acquaintances met each day. The findings suggest that maximizing in selecting friends should be measured and conceptualized as a state in addition to a trait. By extension, these findings suggest that it might be useful to study within-person variability in the general tendency to maximize.

## Study 4

The findings of the first three studies are limited by the fact that the samples consisted of undergraduate students in the U.S. Such samples raise concerns about the generalizability of the current findings to other samples. We were also concerned about how well the number of daily friends or acquaintances serves as a measure of number of choices in other populations. Given the plethora of social activities and clubs present on American college campuses,

when selecting with whom they will spend their time on a daily basis college students have more options than working adults and members of other age groups have.

To address these limitations, we studied samples of American and Japanese noncollegiate participants. We operationalized the number of friendship choices in this study in terms of relational mobility, a social ecological construct that can be defined as the ease or extent to which an individual can enter into, move out of, and form new relationships based on one's preferences (Yuki et al., 2007; Yuki & Schug, 2012).

In the present study, we treated perceptions of relational mobility as a moderating variable. We hypothesized that the relationship between maximizing and well-being would be negative when relational mobility was higher, and that it would be weaker when relational mobility was lower. Higher relational mobility is associated with more choices or opportunities to seek out friendships than low relational mobility. Given more choices, a maximizer will be more likely to regret decisions to spend time with particular friends, and this regret will lead to greater dissatisfaction, higher negative affect, and so forth. We sampled participants in the U.S. and Japan because the perceived level of relational mobility has been shown to be higher in the U.S. than in Japan (e.g., Schug et al., 2010). Although we did not predict any country-level moderating effect, we sampled participants from both countries to increase the variance of relational mobility.

## Method

In the U.S., Study 4 was approved by the Protection of Human Subjects Committee at The College of William and Mary (protocol number #PHSC-2013-07-01-8801-jschug), and in Japan it was approved by the Ethics Committee of Center for Experimental Research in Social Sciences at Hokkaido University under the title "Maximizing and friendships."

**Participants.** Participants were 150 American adults ( $M_{\text{age}} = 36.26$ ,  $SD = 12.68$ ; 79 male, 71 female) recruited via Amazon's Mechanical Turk, and 207 Japanese adults ( $M_{\text{age}} = 37.58$ ,  $SD =$

<sup>5</sup> Estimating predicted values to represent level 1 interactions requires knowing the within-person standard deviations of the predictors. These are defined as the square root of the variance from an unconditional model.

Table 12  
 Descriptive Statistics of Maximizing and Well-Being, and Between-Country Differences for Study 4

Outcome	U.S.			Japan			<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
	Mean	<i>SD</i>	$\alpha$	Mean	<i>SD</i>	$\alpha$				
Maximizing	3.50	1.08	.89	3.40	.89	.88	<1			
Max AS	3.06	1.31	.83	3.27	1.06	.74	1.63	277.72	.11	.18
Max HS	4.08	1.29	.87	3.29	1.17	.89	-6.06	355	<.001	.64
Max DD	3.22	1.43	.86	3.65	1.22	.87	2.93	289.51	<.01	.32
RM	4.93	.98	.88	4.21	.86	.83	-7.30	286.56	<.001	.78
SWLS	4.40	1.61	.91	3.23	1.21	.89	-7.52	264.86	<.001	.82
PA	4.38	1.17	.90	3.71	.97	.87	-5.71	283.44	<.001	.62
NA	2.30	1.22	.93	3.72	1.10	.89	11.48	355	<.001	1.22
Regret	3.87	1.53	.88	4.29	1.09	.76	2.93	252.59	<.01	.32

Note. Maximizing = combined subscales of maximizing; AS = alternative search; HS = high standards; DD = decision difficulty; RM = relational mobility; SWLS = Satisfaction With Life Scale; PA = positive affect; NA = negative affect.

9.58; 99 male, 108 female) recruited through Lancers.jp, a crowdsourcing platform similar to Mechanical Turk. In our study, American and Japanese participants were compensated \$0.40 and 100 yen, respectively, for completing a short questionnaire.

**Materials and procedure.** Participants agreed to complete the study by clicking on a link to fill out an Internet-based questionnaire. After providing demographic information, participants completed the Relational Mobility Scale (Yuki et al., 2007). Examples of this 12-item scale include, "They (people in my society) have many chances to get to know other people," "It is common for these people to have a conversation with someone they have never met before," and "It is often the case that they cannot freely choose who they associate with" (reverse coded). Participants were asked to respond to each statement by selecting choices that ranged from *strongly disagree* to *strongly agree* on a 7-point scale.

Participants completed the maximizing in selecting friends scale used in Studies 1 and 2. Regret was measured using the 5-item regret scale created by Schwartz et al. (2002), and life satisfaction was assessed with the 5-item Satisfaction With Life Scale (Diener et al., 1985). Participants responded to items from each scale by indicating the extent to which they agreed to each item, ranging from *completely disagree* to *completely agree* on a 7-point scale.

Next, participants completed measures of positive and negative affect. They responded to the same adjectives used in Study 3 by indicating the extent to which they felt each emotion, ranging from *Do not feel this way at all*, to *Feel this way very strongly* on a 7-point scale (Nezlek, 2005). Enthusiastic, alert, happy, proud, excited, calm, peaceful, relaxed, contented, and satisfied measured positive affect; nervous, embarrassed, upset, stressed, tense, depressed, disappointed, sluggish, bored, and sad measured negative affect. All items were translated from English to Japanese, and were then backtranslated into English. Discrepancies were discussed among a committee of bilinguals.

## Results

We first compared between-nation differences in means for relational mobility, well-being, and maximizing. Consistent with previous findings (e.g., Schug et al., 2010), Americans perceived their society to have higher relational mobility than the Japanese did (see Table 12). Americans also scored higher in satisfaction

with life and positive affect, and lower in negative affect and regret. There were no significant differences between the Americans and the Japanese in maximizing in selecting friends when measured as one construct, but the Americans maximized more in the domain of high standards, whereas the Japanese maximized more in the decision difficulty domain, a finding consistent with between nation differences in the general tendency to maximize (Oishi, Tsutsui, Eggleston, & Galinha, 2014). There were no significant differences in means for alternative search.

Next, we examined partial correlations between maximizing and life satisfaction, positive affect, and negative affect for all participants controlling for country.<sup>6</sup> For all participants maximizing was negatively marginally significantly related to life satisfaction,  $r(354) = -.10$ ,  $p = .07$ , was not significantly related to positive affect,  $r(354) = -.04$ ,  $p = .41$ , but was positively related to negative affect,  $r(354) = .29$ ,  $p < .001$ .

**Moderating effect of relational mobility.** Next, and critical to our main hypothesis for this study, we examined the moderating effect of relational mobility on the relationships between maximizing and well-being. Although only some of the zero-order relationships between well-being and maximizing were significant, the lack of a significant zero-order relationship could have been due to the fact that well-being and maximizing were related for

<sup>6</sup> Because our aim was not to examine between-country differences in relationships between maximizing and well-being, we presented the partial correlations aggregated across all participants controlling for country. Nevertheless, for the sake of thoroughness, we examined correlations between maximizing and life satisfaction, positive affect, and negative affect for each country separately. In the U.S., maximizing was not significantly related to life satisfaction,  $r(148) = .07$ ,  $p = .41$ , or positive affect,  $r(148) = -.06$ ,  $p = .45$ , but was positively related to negative affect,  $r(148) = .29$ ,  $p < .001$ . In Japan, maximizing was marginally significantly related to life satisfaction,  $r(205) = -.13$ ,  $p < .06$ , was not significantly related to positive affect,  $r(205) = -.02$ ,  $p = .73$ , but was significantly related to negative affect,  $r(205) = .30$ ,  $p < .001$ . Although the relationship between maximizing and life satisfaction differed by country (not significant in the U.S. and marginally significant in Japan), the general pattern of findings was relatively consistent across countries.

Table 13  
Simple Slopes for People One Standard Deviation Above and Below the Mean on Relational Mobility for Study 4

Outcome	SD	SWLS	PA	NA
Max	-1 SD Relational mobility	.05	.14	.28**
	+ 1 SD Relational mobility	-.28*	-.18	.35**
AS	-1 SD Relational mobility	.09	.15*	.18†
	+ 1 SD Relational mobility	-.26**	-.10	.23***
DD	-1 SD Relational mobility	-.21*	-.04	.31***
	+ 1 SD Relational mobility	-.22*	-.20*	.29***
HS	-1 SD Relational mobility	.23**	.15*	.01
	+ 1 SD Relational mobility	-.03	.00	.12†

Note. Max = combined maximizing subscales; AS = alternative search; HS = high standards; DD = decision difficulty; SWLS = Satisfaction With Life Scale; PA = positive affect; NA = negative affect.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

some members of the sample (e.g., those higher in mobility) but not for others (e.g., those lower in mobility).<sup>7</sup>

Given that ours is the first study to focus on maximizing in friendship selections, we conducted a separate analysis for each subscale of maximizing combined with each measure of well-being. Relational mobility, a measure of maximizing, and the interaction of mobility and maximizing were predictors, and a dummy coded country variable (Japan = 0, U.S. = 1) was entered to control for mean differences. We used the PROCESS macro (Hayes, 2013) to correct for heteroscedastic standard errors. To interpret these interactions, simple slopes were estimated for individuals who were  $\pm 1$  SD on relational mobility. Estimated simple slopes accompanied by the results of significance tests are presented in Table 13.

Consistent with our prediction, when the number of opportunities to form new friends was greater (high relational mobility), the tendency to maximize was negatively related to satisfaction, whereas this relationship was weaker for those low in relational mobility. When maximizing was defined using total scores, the interaction of mobility and maximizing was significant in the analyses of satisfaction with life ( $\beta = -.17, p < .05$ ) and positive affect ( $\beta = -.17, p < .05$ ), but not in the analysis of negative affect ( $\beta = .04, p = .68$ ). For those low in relational mobility the simple slope between maximizing and satisfaction with life was not significant, whereas for those high in relational mobility the slope was negative and significant. In the analysis of positive affect, neither simple slope was significant, although for those high in relational mobility this slope was negative, whereas for those low in relational mobility the slope was positive.

The results of analyses using the alternative search subscale (AS) were similar to the results using the total maximizing score. The mobility-maximizing interaction was significant in the analyses of satisfaction with life ( $\beta = -.18, p < .01$ ) and positive affect ( $\beta = -.13, p < .05$ ) but not in the analysis of negative affect ( $\beta = .03, p = .70$ ). For those low in relational mobility the simple slope between AS scores and satisfaction with life was not significant, whereas for those high in relational mobility the slope was negative and significant. In the analysis of positive affect, the simple slope for those low in relational mobility was positive and significant, whereas for those high in relational mobility the slope was negative (although not significant).

The results of analyses using decision difficulty produced a marginally significant interaction between maximizing and mobility in the analyses of regret ( $\beta = .09, p < .10$ ), but not for the other measures of well-being (satisfaction with life:  $\beta = -.01, p = .91$ ; positive affect:  $\beta = -.08, p = .13$ ; negative affect:  $\beta = -.01, p = .84$ ). Nevertheless, after examining the pattern of findings from the simple slopes, it appeared as if decision difficulty followed the same pattern as alternative search. Thus, although relational mobility significantly moderated only the relationships between alternative search and well-being, relational mobility had a similar effect on the relationships between decision difficulty and well-being. This pattern of findings was consistent with the within-person interactions of Study 3.

When maximizing was defined in terms of high standards, significant mobility-maximizing interactions were found in the analyses of satisfaction with life and regret (satisfaction with life:  $\beta = -.13, p < .01$ ; positive affect:  $\beta = -.08, p = .11$ ; negative affect:  $\beta = .06, p = .31$ ; regret:  $\beta = .11, p < .05$ ). For those in low relational mobility, maximizing was positively related to life satisfaction, but the relationship was essentially zero for those high in relational mobility. The relationship between high standards maximizing and regret was practically zero for those low in relational mobility, but was positive for those high in relational mobility. The pattern of results from these analyses is different from the patterns from the analyses of the other two subscales. Also, recall that in Studies 1 and 2, relationships between well-being and the high standards subscale were different from relationships between well-being and the other two subscales. Taken together, those results and the results of Study 4 suggest that the high standards subscale measures a different construct than that measured by the other two subscales.

**Regret as a mediator.** A consistent finding from the previous studies was that regret mediated relationships between maximizing and well-being, and such mediation required zero-order relationships between maximizing and well-being. In Study 4, we did not find consistent significant zero-order relationships between maximizing and well-being, which would seem to preclude the possibility that regret mediated these relationships—there was no relationship to mediate. Nevertheless, the fact that maximizing and well-being were significantly related for people high in relational mobility suggested that moderated mediation might have occurred. That is, regret might have mediated relationships between maximizing and well-being for participants for whom these relationships were significant, that is, those high in relational mobility.

To determine whether regret mediated the relationship between maximizing and well-being at high levels of relational mobility we conducted moderated mediation analyses. We used the PROCESS macro (Hayes, 2013) in SPSS, Model 8 with 5000 bootstrap samples. Given the relatively consistent pattern of mediation for

<sup>7</sup> By definition, relational mobility measures people's perceptions of how easy it is for people in their society to change friendships and make new friendships. It does not measure how mobile people think they are, as individuals, per se. This definition has led some authors to use terms such as "people who live in high mobility societies" to describe individuals with high scores on this measure. In the interests of parsimony, when discussing individual differences in our measure of relational mobility we will refer to it simply as relational mobility without phrases referring to perceptions of one's society.



each of the subscales of maximizing and for the sake of parsimony for the complex moderated mediation analyses, we used the total maximizing score only. The index of moderated mediation was significant for satisfaction with life ( $\beta = -.103$ ,  $SE = .03$ , 95% CI  $[-.175, -.044]$ ), positive affect ( $\beta = -.047$ ,  $SE = .02$ , 95% CI  $[-.092, -.017]$ ), and negative affect ( $\beta = .080$ ,  $SE = .03$ , 95% CI  $[.034, .141]$ ). These results indicated that, as expected, relational mobility significantly moderated the indirect effect of regret on the relationship between maximizing and well-being (Hayes, 2015). At high levels of relational mobility (+1 *SD* below the mean), the indirect effect of regret on satisfaction with life was significantly stronger ( $\beta = -.338$ ,  $SE = .07$ , 95% CI  $[-.481, -.223]$ ) than the indirect effect of regret on satisfaction with life ( $\beta = -.140$ ,  $SE = .04$ , 95% CI  $[-.238, -.064]$ ) at low levels of relational mobility (-1 *SD* above the mean). Additionally, the direct effect at high levels of relational mobility was not significant ( $\beta = .092$ ,  $SE = .13$ , 95% CI  $[-.156, .340]$ ), whereas the direct effect at low levels of relational mobility was significant ( $\beta = .260$ ,  $SE = .12$ , 95% CI  $[.021, .499]$ ). This suggests that regret mediated the relationship between maximizing and satisfaction with life at high levels of relational mobility, but not at low levels.

Similarly, the indirect effect of regret on the relationship between maximizing and positive affect was significantly stronger at high levels of relational mobility ( $\beta = -.156$ ,  $SE = .04$ , 95% CI  $[-.255, -.080]$ ) than it was at low levels of relational mobility ( $\beta = -.065$ ,  $SE = .02$ , 95% CI  $[-.124, -.027]$ ). The direct effect at high levels of relational mobility was not significant ( $\beta = -.009$ ,  $SE = .11$ , 95% CI  $[-.225, .207]$ ), whereas the direct effect at low levels was significant ( $\beta = .243$ ,  $SE = .10$ , 95% CI  $[.048, .437]$ ). This indicates that regret mediated relationships between well-being and maximizing only at high levels of relational mobility. Finally, the indirect effect of regret on negative affect was significantly stronger at levels of high relational mobility ( $\beta = .263$ ,  $SE = .06$ , 95% CI  $[.165, .392]$ ) than it was at low levels ( $\beta = .110$ ,  $SE = .03$ , 95% CI  $[.049, .188]$ ).

## Discussion

In this final study, although we found that maximizing in friendship selection was not negatively related to all measures of well-being at the zero order (in contrast to the results of the previous studies), the results of more fine-grained analyses were consistent with the results of the previous studies. The marginally significant or nonsignificant zero-order relationships we found need to be evaluated in light of the significant interactions indicating that maximizing was negatively related to well-being for people who were high in relational mobility, whereas maximizing and well-being were not related for people who were low in relational mobility. Moreover, for individuals high in relational mobility, relationships between maximizing and well-being were mediated by regret. In other words, the zero-order and mediational relationships for individuals in Study 4 who were high in relational mobility were similar to the zero-order and mediational relationships we found in the previous studies.

The way in which relational mobility moderated relationships between maximizing and well-being suggests that negative relationships between maximizing and well-being may occur only at higher levels of relational mobility, that is, when the number of

available friendship choices is high. In support of this explanation, additional analyses of the data in Study 1 found that relational mobility did not moderate relationships between maximizing and well-being; however, mean relational mobility among these undergraduates was greater than mean relational mobility in both our samples in Study 4 ( $ps < .001$ ). This led us to believe that there was no moderation in Study 1 because most participants reported sufficiently high levels of relational mobility.

In addition, in Study 4 we found that the relationship between maximizing and positive affect was positive when relational mobility was low. This implies that the tendency to maximize may be beneficial to one's well-being when the number of choices is low. Presumably, the tendency to maximize in this context would not be associated with a tendency to regret a particular decision as much when the number of options is low versus when it is high. Maximizing in this context may be positively related to picking better options that lead to greater well-being. Future research needs to determine whether, when, and why greater maximizing is associated with greater well-being.

## General Discussion

The present studies examined the tendency to maximize outcomes in selecting friends, a tendency that has not been examined in previous research. The tendency to maximize outcomes in friendship selection was related negatively to well-being across all studies. This general relationship was established in Study 1, and a general trait measure of regret was identified as a mediator of these relationships. In a naturalistic setting of the fraternity and sorority recruitment process in Studies 2a and 2b, maximizing in selecting members of these organizations was negatively related to satisfaction with the decisions to join a particular fraternity or sorority. Items that addressed the specific regret process mediated these negative relationships. Next, in Study 3, we extended the findings from the between-person level of analysis to the within-person level of analysis by measuring daily states of maximizing. Daily states of maximizing were negatively related to daily well-being and several of these relationships were mediated by daily states of regret. These particular mediation findings highlight the unique psychological process that explains how and why maximizing in this specific domain relates negatively to well-being.

Additionally, we showed that the number of choices available to an individual moderated the relationship between maximizing and well-being in Studies 3 and 4. In contrast to days in which people met fewer new friends or acquaintances, daily maximizing was more negatively related to well-being on days in which people met more new friends or acquaintances. In Study 4, the number of choices in friendships was operationalized as relational mobility, which refers to the extent to which one believes people can form new friends or leave existing ones within a given society (Yuki et al., 2007). In samples of adult participants from the U.S. and Japan, the relationship between maximizing and well-being was more strongly negative for people high in relational mobility than it was for those low in relational mobility.

This moderating effect of the number of choices on the relationship between maximizing and well-being is particularly noteworthy. Although our findings complement the results of several studies that have similar "choice overload" effects (Álvarez, Rey, & Sanchis, 2014; Dar-Nimrod et al., 2009; Haynes, 2009; Roets et

al., 2012), a recent meta-analysis found that there was essentially no significant main effect of choice overload, but there was a significant amount of variance across 50 studies (Scheibehenne, Greifeneder, & Todd, 2010). Scheibehenne et al. also found no support for the general maximizing tendency as a moderator of the choice overload effect, although they mentioned that a domain specific maximizing tendency could moderate the choice overload effect.

Consistent with this possibility, the moderating effect of choice alternatives can be understood within the context of interdependence theory (Kelley & Thibaut, 1978). According to Kelley and Thibaut (1978), individuals weigh the costs and rewards in social interactions with potential friends. As individuals consider the outcomes of potential relationships (the rewards minus the costs), they compare the outcomes of potential relationships with their comparison level and the comparison level of alternatives. Comparison level refers to the level of which the individual believes the outcomes (rewards minus cost) of a relationship should meet a set threshold, analogous to the high standards subscale of maximizing. The comparison level of alternatives refers to the extent to which an individual compares the outcomes of a potential relationship with the other choices, namely other possible relationships or time spent alone, analogous to the alternative search subscale of maximizing.

Interdependence theory posits that as the value of alternative relationship options increases, people's commitment to, and satisfaction with, their current relationships will decrease. This process may vary across individuals, and our alternative search subscale may have measured this individual difference. Consistent with this line of reasoning, we found that alternative search was negatively related to well-being at the between- and within-person levels and these relationships were moderated by the number of choices present, measured by the number of new daily friends and/or acquaintances met (Study 3) and relational mobility (Study 4). In terms of the meta-analytic review by Scheibehenne et al. (2010), we believe that our findings do not contradict their conclusions regarding the lack of moderation of the general tendency to maximize on choice overload, a concept similar to the number of friendship choices in Studies 3 and 4. In fact, interdependence theory and the investment model support our findings regarding the moderation of the domain specific measure of maximizing in friendship selection on choice overload, defined in this context as the number of friendship choices available.

Most studies of maximizing have been conducted in the U.S. Consequently, there is little research on how relationships between maximizing and well-being might vary across cultures. Although the Maximization Scale has been translated into other languages (e.g., Greifeneder & Betsch, 2006; Isobe et al., 2008), to our knowledge only three studies have examined cultural differences between maximizing and well-being (Brown et al., 2015; Oishi et al., 2014; Roets et al., 2012). In the Roets et al. (2012) study, cultures high in individual choice (e.g., the U.S. and Belgium) were compared with a culture with less individual choice (e.g., China). In the U.S. and Belgium, maximizing was positively related to regret and was negatively related to well-being, but these relationships did not occur in China. In Oishi et al.'s (2014) study, maximizing was negatively related to life satisfaction and happiness and was positively related to depression in Japan, whereas in

the U.S. sample, these relationships varied depending on the maximizing scale used.

In each of these studies, assumptions based on previous research on cultural differences provided the context for interpreting the results. In Roets et al. (2012), the authors claimed that the U.S. and Western Europe are societies of abundant choices and personal autonomy (Schwartz, 1999), whereas China is a society that prohibits options in everyday choices. In Oishi et al. (2014), the authors claimed that the U.S. is a culture that cherishes choices (Markus & Schwartz, 2010), whereas Japan is a culture in which individuals are not given many personal choices (Lewis, 1995). In both studies, the authors did not collect measures of these constructs directly. The present study represents an improvement over these studies in that we measured participants' relational mobility to help explain our results, rather than simply compare effects cross-culturally and assume that some type of cultural differences could explain our results.

The present findings also raise questions about the meaning of the high standards subscale and the general meaning of the measure of maximizing. In all of the studies, the high standards subscale either related positively to well-being or did not relate significantly to well-being. The correlations between alternative search and decision difficulty were stronger than the correlations between high standards and the other two subscales. These findings can be interpreted in different ways.

One possibility is that high standards may not be measuring the same construct as the other subscales. Such a conclusion is consistent with the results of Nenkov et al., (2008) and Rim et al., (2011), and with a new measure that does not include the high standards subscale (Turner et al., 2012). Another possibility is that the high standards subscale could still characterize maximizing in friendship selection despite its low correlation with the other subscales. Cheek and Schwartz (2016) present a useful framework to integrate the different definitions of the many new maximizing scales (e.g., Dalal, Diab, Zhu, & Hwang, 2015; Misuraca, Faraci, Gangemi, Carmeci, & Miceli, 2015; Richardson, Ye, Ege, Suh, & Rice, 2014) by suggesting that maximizing consists of two components: a goal of choosing the best and a strategy of searching for alternatives. In the context of maximizing in friendship selection, this conceptualization suggests that the goal of choosing the best groups of friends (defined as high standards in the present studies) could be beneficial in certain circumstances. In other instances, searching for alternative people to spend time with and befriend (defined as alternative search in the present studies) could be detrimental to one's well-being.

Relatedly, the maximizing in selecting friends scale measured different psychological processes that occur during the friendship formation process, namely choosing to spend time with friends and choosing friends. In future research, studies aimed specifically at these different processes in the friendship formation process could be useful in determining when maximizing is most detrimental to one's well-being or when maximizing could potentially be beneficial to one's well-being.

For example, although the general conclusion of our studies and that of other research is that greater maximizing is associated with more negative outcomes, there may be some limited positive outcomes associated with maximizing. For instance, as one maximizes in selecting friends, one necessarily has to search through numerous potential friends. This could lead one to consider various

positive attributes of others who might have quite different preferences, worldviews, and ideologies, and this could promote greater tolerance. Although the process of maximizing in selecting friends may lead one to regret which lowers well-being, it could potentially cause one to become more tolerant of others. Such possibilities require studies designed specifically to test such hypotheses.

### Limitations and Future Research Directions

No study is without its limitations. In the first three studies, participants were undergraduate students, and findings from student samples may not generalize to the greater population (e.g., Henrich, Heine, & Norenzayan, 2010). Although we studied non-collegians in Study 4, the relationship between maximizing in selecting friends and well-being might be different for subpopulations such as older adults. According to socioemotional selectivity theory (Carstensen, 1992) and selection, optimization, and compensation theory (Baltes & Baltes, 1990), older adults focus their time and energy on family ties and close friends. Because their time is limited, older adults attempt to spend time with those relationships that will be the most rewarding and this presumably increases life satisfaction and positive affect.

In this context, maximizing in selecting friends might be conceptualized slightly differently for older adults than it is for younger adults. On the one hand, the decision to spend time with family members and close social ties could be considered satisficing. In essence, people are not searching through all of the potential friendship options; rather, they are choosing options that are good enough without expending a lot of resources investigating alternatives. On the other hand, older adults may not have as many choices as younger people, so the difference between maximizing and satisficing might not influence their well-being very much, as is the case when few choices are available. At the extreme, when there are no options, one can neither maximize nor satisfice. Such a possibility is consistent with the finding that older adults self-report lower levels of the general tendency to maximize (Bruine de Bruin, Parker, & Strough, 2016). Understanding maximizing in selecting friends among older adults will require studies designed specifically for that purpose.

Our conclusions are also limited by the cross sectional design of our studies. We measured maximizing and well-being simultaneously, making it difficult to make statements about causality. For example, the results of our mediation analyses need to be interpreted in light of this because the difference between a control variable and a mediator can be thought of as conceptual (MacKinnon, Krull, & Lockwood, 2000). We assumed that maximizing causes one to be dissatisfied (total effect), that maximizing causes regret (a-path), and that regret causes one to be dissatisfied (b-path). If these assumptions can be proved, our analyses support the contention that regret mediates these relationships. Such causal directions have been assumed in previous research (e.g., Schwartz et al., 2002); however, to our knowledge, such causality has not been proved in part because it is difficult to manipulate the constructs involved.

In terms of mediation, we examined the mediating role of different measures of regret to understand how the psychological mechanisms explaining the negative relationship between maximizing and selecting friends and well-being were distinct from

maximizing in other domains. Although there is a sound conceptual basis for, and empirical support of, the mediating role of regret, there may be other constructs that mediate relationships between well-being and maximizing in selecting friends. In our research, we were concerned primarily with introducing the construct of maximizing in terms of decisions about friendship selection, and we used previous research on general maximizing as a guideline. Future studies will need to consider other possible mediators of the relationships between well-being and maximizing as we have defined it here.

We also examined the moderating role of a specific social ecological construct in the relationship between maximizing and well-being. Future research should consider cultural, international, and other social ecological differences that could potentially moderate the relationship between maximizing and well-being. For example, in authoritarian societies the number of choices citizens have to make a friend or affiliate with others may be more limited than they are in nonauthoritarian societies.

Nevertheless, certain cultural phenomena may clarify the relationships between maximizing and the quality of decisions. For instance, a collectivistic culture may encourage decisions that benefit the collective over the individual. Within such a culture, a maximizer may not be able to consider the effects or outcomes of possible alternatives on the collective because of the difficulty in predicting how the collective will benefit from an alternative. Therefore, the tendency to maximize may not correlate with well-being as strongly in a collectivistic culture as it would in an individualistic culture. Future research should address these possible cultural moderating effects.

### Conclusion

In sum, the present findings extend our current knowledge of maximizing by demonstrating that maximizing in the domain of selecting friends is negatively related to well-being at both the between- and within-person levels of analysis. Maximizers in this domain are probably unhappier than satisficers because of the regret they experience after making a choice. When the number of choices increases, the negative effects of maximizing are amplified, most likely because more choices provide more opportunities to regret foregone alternatives.

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