

# Two Essays on Hope and Consumer Behavior

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in  
partial fulfillment of the requirement for the degree of

Doctor of Philosophy

In

Executive Business Research

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August 2, 2021

Falls Church, VA

Keywords:

Hope, financial decision-making, information processing, experiential processing, gambling,  
risk taking, time perspective, savings

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## **Two Essays on Hope and Consumer Behavior**

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### **ABSTRACT**

This dissertation consists of two essays on the impact of hope on financial decision making. While hope is a commonly experienced positive emotion, research on the impact of hope on consumer decision making is relatively sparse. The first essay examines the impact of hope on gambling intentions. Findings from seven studies, including one consequential, demonstrate that in a gambling context, hope leads to suboptimal decisions when the focus of hope is on winning. We theorize and show empirically that this effect occurs because hope triggers experiential processing, which in turn increases gambling, interestingly without affecting rational expectations of winning. Evidence from a variety of gambling contexts suggest that hope leads to both intent and actual gambling behavior. This effect of hope on gambling does not hold for individuals low on trait experiential processing and is attenuated when individuals are prompted to not rely on their feelings. Thus, the authors contribute to the literature on hope by providing a detailed understanding of how hope impacts processing of information, which in turn leads to suboptimal decisions in a gambling context. More broadly, this work offers implications for policy makers and consumers to understand and to become aware of how everyday positive emotion can be detrimental to consumer welfare.

The second essay examines the impact of hope on savings. Across five studies, this research displays that hope increases willingness to save. The effect of hope on savings intention is mediated by hope's focus on the future. When hope is no longer focused on the future but is instead focused on the past, this effect disappears. To rule out positive emotion in general as a driving effect, we examine pride, a positive emotion which is generally focused on the past and find that pride does not lead to savings intention unless the focus of pride is shifted to the future. We also examine an alternative potential explanation that a sense of closeness with one's future self is driving the effect of hope on savings intention but do not find support for this, rather it is a future time perspective that mediates the effect of hope on willingness to save. These findings and their implications for research on positive emotion, time perspective and financial decision making are discussed.

## **Two Essays on Hope and Consumer Behavior**

**Stephen O. Juma**

### **GENERAL AUDIENCE ABSTRACT**

This study consists of two essays on hope's impact on consumer decision making. Essay 1 examines a negative side of hope, namely how hope may motivate gambling intentions. Although hope is commonly thought of as a positive entity, could hope actually trap an individual, leading to suboptimal decisions? We find that hope of winning increases gambling intentions through experiential (or emotional) processing. When individuals are instructed to not rely on their feelings, this impact of hope on gambling intentions disappears. We also find that for individuals who tend not to utilize experiential processing, there is no impact of hope on gambling.

Essay 2 looks at a positive consequence of hope: how hope motivates savings. We find that hope's focus on the future leads to motivation to save for one's future. When the focus of hope is shifted to the past, the impact of hope on saving disappears. We compare hope to another positive emotion, pride, as pride differs from hope by its typical focus on the past. We find that pride does not motivate savings unless its focus is shifted to the future. We rule out an alternative explanation for why hope may motivate savings by looking at sense of closeness with one's future self. We find that while a future time perspective mediates hope's impact on savings, sense of closeness with one's future self does not. The findings from these two essays add to the scarce literature on hope's impact on consumer decision making by providing two contrasting consequences of hope.

## ACKNOWLEDGEMENTS

I am grateful to my family, friends, and colleagues, far and near, who have supported me through this journey that has culminated in this dissertation. Completing this venture would have been quite impossible without their constant, unwavering support.

Special thanks to the chair of my committee Dr. Mario Pandelaere and committee members Dr. Dipankar Chakravarti, Dr. Rajesh Bagchi, and Dr. Anne-Sophie Chaxel. Please accept my gratitude for allowing me to learn from you and with you. Your work ethics, encouragement, generosity, and sustained coaching have helped me to grow as a person and as a researcher.

To Annabelle Ombac and Joy Jackson: Thank you for your patience in answering my many questions, and for your guidance on how to navigate many turns and twists in the doctoral process. I have benefitted so much from your expertise.

To my wife Monica: Thank you for your endless patience, love, and support every step of the way and for reminding me to take “little steps every day.” To my parents, whose love for education inspired me: Thank you for teaching me to learn, to unlearn, to relearn.

To Dr. George Dietz of The University of Memphis, who encouraged my pursuit of doctoral studies in business as we chatted about soccer: I am grateful for your nudging and for sharing how much joy you have found in academe.

Finally, to the PhD Project: I am grateful for all your support during this doctoral journey. I have met wonderful people through the PhD Project—extraordinary people who have enriched my life in extraordinary ways.

My debt to you all is great.

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## **ATTRIBUTION**

Mario Pandelaere co-authored the two manuscripts presented in this dissertation as chapters. His contribution is as follows. He aided in conceptual development, experimental design, review of data analyses and editorial comments.



## **CHAPTER 1: INTRODUCTION**

Positive emotion often influences consumer decisions. One such positive emotion that is easily evoked in daily decision-making is hope. Extant research suggests that hope can have a significant impact on decision making and behavior (MacInnis and De Mello 2005; Poels and Dewitte 2008; Winterich and Haws 2011; Feldman and Kubota 2015; Fazal-E-Hasan et. al 2020). However, research on hope in the realm of consumer behavior is still nascent. Hence, this dissertation aims to expand our understanding of how hope impacts consumer decision making. We examine both a positive and negative aspect of hope. Specifically, we look at hope's impact on saving for one's future by impacting one's time perspective as well as how hope may motivate gambling by triggering experiential processing. In summary, this dissertation contributes new evidence to the literature on positive emotion by providing a nuanced understanding of how hope can both positively and negatively impact decisions. The rest of this study is organized as follows. Chapter 2 provides an empirical analysis of the relationship between hope, future time perspective and savings (Essay 1). Chapter 3 examines the impact of hope on experiential processing and gambling intentions (Essay 2).

## **CHAPTER 2**

### **Trapped in Hope: The Negative Impact of Hope on Gambling Decisions (ESSAY 1)**

# **Trapped in Hope: The Negative Impact of Hope on Gambling Decisions**

**Stephen O. Juma**

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## **ABSTRACT**

Hope is a commonly encountered positive emotion in daily life. Although most extant literature highlights its positive consequences, nascent studies suggest potential negative outcomes. In this article, findings of six studies, including a study with consequential decisions, demonstrate that in a gambling context, hope can lead to suboptimal decisions. The authors theorize and show empirically that hope triggers experiential processing, which in turn increases gambling, even though it does not affect rational expectations of winning. Evidence from a variety of gambling contexts suggests hope leads to both intended and actual gambling behavior. However, this effect does not hold for consumers who exhibit low trait experiential processing, and it is attenuated when people are prompted not to rely on their feelings. This article contributes to prior literature by providing a detailed description of how hope affects information processing and leads to suboptimal decisions in a gambling context. More broadly, the findings offer implications for policy makers and consumers seeking to understand and anticipate how an everyday positive emotion might be detrimental to consumer welfare.

**Keywords:** hope, gambling, risk-taking, experiential processing, positive emotion, information processing.

*A gambler is nothing but a man who makes his living out of false hope.*

—William Bolitho

An estimated 2.6% of the U.S. population suffers from gambling addiction, (North American Foundation for Gambling Addiction Help 2016) and almost a quarter of those with a gambling addiction attempt suicide (Potenza et al 2002; DeCaria et al 1996), a rate higher than that associated with any other addictive behavior (Zosh 2020; Jones 2020). Nevertheless, the drivers of gambling behavior remain understudied. Whereas previous work has revealed specific factors that predict gambling behavior—including low income (Brinner and Clotfelter 1975; Hansen, Miyazaki, and Sprott 2000), materialism, competitiveness, and impulsiveness (Mowen, Fang, and Scott 2009)—with this article, we probe how people’s experiences of hope can lead to gambling.

In six studies, we show that feeling hopeful about winning leads both to intentions to gamble and actual gambling. Hope does not distort the perceived likelihood of winning but does increase experiential processing. That is, even though participants are not more likely to perceive that their chances of winning go up, they are more likely to *feel lucky*. Along with revealing this key role of feelings, we document two boundary conditions. First, among people who tend not to use experiential processing, feeling hopeful does not make gambling alluring. Second, if people are specifically instructed *not* to rely on their feelings—that is, their experiential processing is decreased—the effect of hope on gambling disappears.

Our article accordingly contributes in several areas. First, it adds to literature on gambling. The causes of gambling are manifold and include, as we noted, comparatively lower income levels (Brinner and Clotfelter 1975; Hansen et al. 2000), materialism, competitiveness

and impulsiveness (Mowen et al. 2009). To these relatively stable factors, we add the commonly encountered positive emotion of hope as a relevant influence on gambling choices. Second, we contribute to literature on hope that tends to focus exclusively on its positive consequences, such as improved cognition and imagination (Chang 1998) and enhanced self-control (Winterich and Haws 2011). To the best of our knowledge, we are the first to empirically document a negative consequence of hope. MacInnis and De Mello (2005) theorize that hope may lead to distorted information processing and explicitly leave it to future researchers to examine their prediction empirically; we respond by using a gambling context to show that hope spurs suboptimal decisions. Third, we advance cognitive-experiential self-theory (CEST), which identifies two parallel information processing routes that operate simultaneously: experiential (system 1) and rational (system 2). Whereas the rational system operates through logic and evidence, the experiential system is shaped by intuition and emotions and processes information automatically. Rational thinking relates inversely to problematic gambling (Emond and Marmurek 2010), and experiential thinking is positively associated with gambling addiction (Armstrong, Rockloff, and Browne 2020). However, the causes of people engaging in rational versus experiential thinking are not well understood. Our studies identify hope as an antecedent of experiential processing.

## **THEORETICAL BACKGROUND**

Hope is a “positive emotion that varies as a function of the degree of yearning for an uncertain, yet possible outcome” (MacInnis and Chun 2007, 11). In the consumer behavior realm, research on the impact of hope is relatively new (MacInnis and Chun 2007) but shows that hope can be induced by having participants imagine feeling hopeful (Winterich and Haws 2011). Early research on hope also notes that individuals vary in their baseline levels of hope.

(Snyder et al. 1991), and accordingly hope can be experienced independent of actual circumstances. For example, someone who is serving a life sentence in prison may still hope the sentence will be overturned. Extant literature also identifies many positive consequences of hope, such as comparatively stronger problem-solving skills (Chang 1998), greater imagination (Cavanaugh et al. 2011), and healthier food consumption (Winterich and Haws 2011). Although findings suggest feeling hopeful leads to the ability to think and act more logically, MacInnis and De Mello (2005) theorize that hope also may negatively influence information processing.

We follow up on this idea by proposing that hope may affect how information affects behavior, in accordance with Cognitive Experiential Self Theory and its prediction of experiential (system 1) and rational (system 2) information processing. By definition, the rational system operates analytically through logic, and the experiential system processes information automatically according to intuition and previous emotional experiences (Denes-Raj and Epstein 1994; Kirkpatrick and Epstein 1992). These two systems operate jointly, with both trait and situational factors shaping their relative influence in specific situations (Denes-Raj and Epstein 1994; Pacini and Epstein 1999). The degree of emotional involvement also affects the balance of each system (Denes Raj and Epstein 1994; Shiloh, Salton, and Sharabi 2000). We propose that the more intensely people experience hope, the more they engage in experiential processing, because hope entails envisioning potential future outcomes (Stotland 1969) and stimulating mental explorations of novel situations (Snyder 1994). Visualization in turn triggers experiential—but not rational—processing (Epstein and Pacini 2001), as the experiential system processes information predominantly in the form of images, while the rational system functions through verbal representations. Compared with other positive emotions, such as pride, hope leads to greater imagination (Cavanaugh et al. 2011).

Although in terms of evolution, experiential processing is useful for integrating past experiences to adapt to the present and vital for efficient day-to-day operating, it can lead to bias and suboptimal decisions (Denes Raj and Epstein 1994; Tversky and Kahneman 1974). Experiential processing influences risk assessments (Lieberman et al. 2007; Shiloh et al. 2002); for example, it affects jurors' perceptions of the dangerousness of defendants, leading them to discount statistically oriented information (Lieberman et al. 2007). It also has been linked to overall participation in gambling (Denes-Raj and Epstein 1994) and problematic gambling, by both adolescents and adults (Armstrong et al. 2020; Consenza, Ciccarelli, and Nigro 2019; Emond and Marmurek 2010). Therefore, inducing hope in people might increase the likelihood they will bet, sparked by their experiential processing:

**H1:** Hope increases gambling intentions.

**H2:** The effect of hope on gambling is mediated by experiential processing.

A possible alternative explanation is that hope leads to gambling through increased perceptions of the likelihood of winning. However, experiential processing functions by leading people to *feel* their behaviors are the best courses of action, even if they *know* their actions are irrational (Denes-Raj and Epstein 1994; Epstein and Pacini 2001; Kirkpatrick and Epstein 1992), because experiential and rational processing are independent and occur in conjunction. According to the ratio-bias (RB) phenomenon, people perceive that their likelihoods of experiencing unlikely events when faced with equivalent ratios are higher when the ratios consist of two larger numbers rather than two smaller numbers (Denes-Raj and Epstein 1994; Denes-Raj, Epstein, and Cole 1995; Epstein and Pacini 2001; Kirkpatrick and Epstein 1992). This phenomenon is demonstrated by a game in which the goal is to select a red jellybean. Participants encounter two trays of jellybeans; one tray is smaller and has 10 jellybeans, one red

and nine white, and the other tray is larger and has 10 red and 90 white jellybeans. Players who select red beans receive monetary rewards. When participants are asked to select which tray to draw from, most select the large tray, thereby displaying the RB phenomenon. They even prefer to pay in order to choose their tray, rather than having them selected by coin toss. Although participants show rational processing by *acknowledging* that paying to choose is irrational—because they have equal probabilities with either tray—they show experiential processing by *feeling* they are more likely to win with the larger tray because there are more red beans (Epstein and Pacini 2001; Kirkpatrick and Epstein 1992).

The RB phenomenon was even more drastically evident in Denes-Raj and Epstein's (1994) work, in which they presented participants with two bowls of red and white jellybeans; one bowl had 7 red beans out of a total of 100 beans, and the other had 1 red bean out of a total of 10 beans. Most participants still chose the bowl with the greater number of absolute red beans (7 of 100), even though the odds of choosing a red jelly bean were less (7% rather than 10%). Again, participants who decided to draw from the bowl with 7 red jellybeans reported *knowing* the odds were against them, yet at the same time *feeling* they had a better chance with the bigger bowl and choosing it was the best course of action.

The importance of visualization in experiential processing also is evident in Epstein and Pacini's (2001) experiment in which participants responded to a verbal description of the RB game with and without instructions to visualize the game. The RB phenomenon was evident only for those who were instructed to visualize the game, leading to behavior similar to that shown in the actual game. In line with our reasoning that hope leads to gambling through experiential processing—because hope leads to visualization—we predict that, similar to the RB game, hope will compel participants to bet, while at the same time not influencing their rational perceived



likelihood of winning. That is, we predict hope will lead them to have stronger *feelings* they will win, while *knowing* their chances of winning are low.

In addition to situational factors that trigger experiential processing, there is variation in the extent to which people use experiential rather than rational processing (Epstein et al. 1996; Pacini and Epstein 1999). Whereas some people typically rely more on rational processing to make decisions, others prefer intuition. In situations in which most people display experiential processing that leads to suboptimal decisions, some people consistently display rational processing (Denes-Raj and Epstein 1994; Kirkpatrick & Epstein 1992; Pacini, Muir, and Epstein 1998), according to individual tendencies. Authors have developed several scales to measure the extent to which people utilize the two types of processing (Denes-Raj and Epstein 1994; Epstein et al. 1996; Pacini and Epstein 1999; Scott and Bruce 1995), and responses to dispositional scales can predict behavior across a host of situations (Epstein et al. 1996; Pacini and Epstein 1999). Presumably, a few people consistently rely on experiential processing, and some consistently do not rely on their feelings. We predict the latter will not be as affected by the induction of hope. That is, the effect of hope on gambling should be reduced or even absent for people who are generally reluctant to rely on experiential processing:

**H3:** Dispositional experiential processing moderates the effect of hope on gambling, such that the effect of hope on betting is stronger for those with high baseline levels of experiential processing.

Similarly, if experiential processing drives the effect of hope on gambling, we predict the effect will be reduced or even disappear when participants are instructed to not rely on their feelings when deciding to bet:

**H4:** When people are instructed to not rely on their feelings in a gambling situation, the

effect of hope on gambling is reduced.

## **OVERVIEW OF STUDIES**

In six studies, we examine the impact of hope on gambling behavior. In study 1, we show that trait hope is positively correlated with lottery participation. In study 2, we demonstrate that situational hope increases gambling intentions. In study 3, we explore the underlying process by which hope motivates gambling by measuring participants' perceptions of their likelihoods of winning and their feelings or hunches that they will win; even though hope leads them to have stronger feelings they will win, it does not change their perceptions of their likelihoods of winning. In studies 4 and 5, we examine two boundary conditions: low levels of trait experiential processing and instructions to not rely on feelings. Finally, in study 6, we show hope affects actual gambling behavior.

### **STUDY 1: TRAIT HOPE PREDICTS LOTTERY PARTICIPATION**

Study 1 aims to determine whether trait hope predicts gambling behavior in a lottery context. In this correlational study, we asked participants to (1) complete trait hope and optimism scales and then indicate how often they purchase lottery tickets and (2) read a Powerball lottery scenario and indicate how likely they would be to play. We propose that trait hope predicts participants' tendencies to play the lottery.

## Participants and Procedure

We recruited 100 participants (46% women, mean age [ $M_{age}$ ] = 40 years) from Amazon Mechanical Turk (MTurk) in exchange for a small monetary amount. We identified one participant as a careless respondent (agreeing to “I live on Mars”) and two responses as outliers (greater than absolute value of 2.5 standardized residual), resulting in a final total of 97 participants. (We removed careless respondents and outliers in the same fashion for all studies) We presented participants with the validated Trait Hope Scale (Snyder et al. 1991), which consists of 12 items, including “Even when others get discouraged, I know I can find a way to solve the problem” and “I energetically pursue my goals,” on a scale from 1 = “definitely false” to 8 = “definitely true.” Next, we presented them with the Revised Life Orientation Test (LOT-R), an optimism scale (Scheier et al. 1994) consisting of 10 items, such as “I’m always optimistic about my future” and “In uncertain times, I usually expect the best,” on a scale from 1 = “I disagree a lot” to 5 = “I agree a lot” (see appendix for full scales). We then asked them how many lottery tickets they typically purchase per month, and followed with a scenario that asked them how likely they would be to buy a lottery ticket: “Imagine you are getting gas and see an advertisement for Powerball Lottery, with flashing lights with a current estimated jackpot of 91 million dollars. How likely are you to buy a ticket?” on a scale from 1 = “extremely unlikely” to 7 = “extremely likely.” Finally, we presented them with several demographic items and an attention check question.

## Results and Discussion

First, we took a log transformation,  $\ln(1 + \text{estimated number of lottery tickets purchased per month})$  to correct for a positive skew. Then we ran a linear regression with trait hope and trait optimism as the independent variables and the log transformation of lottery tickets as the outcome variable. We found trait hope significantly predicted lottery tickets purchased per month ( $b = .12$ ,  $SE = .06$ ,  $p = .048$ ), but optimism did not ( $b = -.14$ ,  $SE = .10$ ,  $p = .183$ ). Next, we ran a linear regression with trait hope and optimism as the predictor variables and likelihood of purchasing a lottery ticket from the vignette as the outcome variable. Trait hope significantly predicted participants' likelihoods of purchasing lottery tickets after reading the Powerball scenario ( $b = .51$ ,  $SE = .20$ ,  $p = .011$ ), but here again, optimism did not ( $b = -.44$ ,  $SE = .34$ ,  $p = .192$ ). In summary, trait hope predicts the specific gambling behavior of participating in a lottery. Because the study is correlational, we designed study 2 to examine whether induced hope leads to gambling.

### **STUDY 2: HOPE AFFECTS GAMBLING**

The primary aim of study 2 is to determine whether hope has a causal effect on gambling behavior in a different context, that is, betting on a soccer game. We predict hope of winning will increase risky decision making and cause participants to be more likely to bet money, because they are more hopeful they will win (H1).

#### Participants and Procedure

We recruited 121 participants (55% women,  $M_{\text{age}} = 37$  years) from MTurk in exchange for a small monetary amount. We identified 10 participants as careless respondents; we did not identify any outliers according to the criteria used throughout this article, making a final total of 111 participants.

We instructed these participants to imagine they and their friends were watching their favorite soccer team play. They were betting on the game and so far had lost money. Those assigned to the hope condition read that they yearned to win, whereas those assigned to the control condition read they were discussing the weather as they waited for the second half to start. As a manipulation check, we asked participants to indicate how hopeful they were they would win money, on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever.” We then asked: “How likely are you to put the rest of your money on this second round?” on a scale from 1 = “extremely unlikely” to 7 = “extremely likely.”

## Results and Discussion

The manipulation of hope was successful: Participants in the hope condition reported feeling more hopeful about winning ( $M_{\text{hope}} = 4.75$ ,  $SD = 1.77$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.09$ ,  $SD = 1.77$ ;  $F(1, 109) = 24.27$ ,  $p < .01$ ). As hypothesized, those in the hope condition were more likely to bet all their money on the second half of the game ( $M_{\text{hope}} = 4.68$ ,  $SD = 1.90$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.35$ ,  $SD = 1.92$ ;  $F(1, 109) = 10.39$ ,  $p = .002$ ). Therefore, study 2 offers supporting evidence for hypothesis 1: People who feel hopeful about winning in a gambling context display greater intentions to gamble than those who are not primed with the hope of winning.

### **STUDY 3: MEDIATING ROLE OF EXPERIENTIAL PROCESSING**

The purpose of study 3 is to understand why hope of winning motivates gambling intentions, by illuminating the underlying process. Because experiential processing predicts gambling behavior (Armstrong et al. 2020; Denes-Raj and Epstein 1994) and is emotionally driven (Denes-Raj and Epstein 1994; Kirkpatrick and Epstein 1992), we hypothesize that experiencing hope leads to gambling through system 1 processing (hypothesis 2). We also test the alternative explanation that hope leads to gambling through an increase in the perceived likelihood or expectation of winning. Because hope is assumed to maintain a realistic appraisal (MacInnis and Chun 2006), we predict it will not change participants' perceived likelihoods of winning. As another objective, study 3 expands the context of risk-taking behavior, using a different gambling scenario and participant pool. Whereas we conducted the first two studies on the MTurk platform, we ran study 3 on the Prolific platform. In study 1, we used lottery tickets, and in study 2, we examined betting on a soccer game; study 3 refers to gambling intentions in the context of the popular casino card game Blackjack, to increase the robustness of our findings.

#### **Participants and Procedure**

A total of 122 participants completed the survey on Prolific ( $M_{\text{age}} = 26$  years, 42% women) in exchange for small monetary amounts. We identified one participant as a careless respondent and identified one outlier according to the criteria used throughout this article, for a final total of 120 participants.

We randomly assigned these participants to either the hope condition or the neutral condition and instructed them to imagine they were playing Blackjack and so far had lost money.

Those in the hope condition read that they yearned to win money, hoping to score 21 (highest possible earnings), whereas those in the neutral condition read they were discussing the weather with the person next to them as they waited for the next round to start.

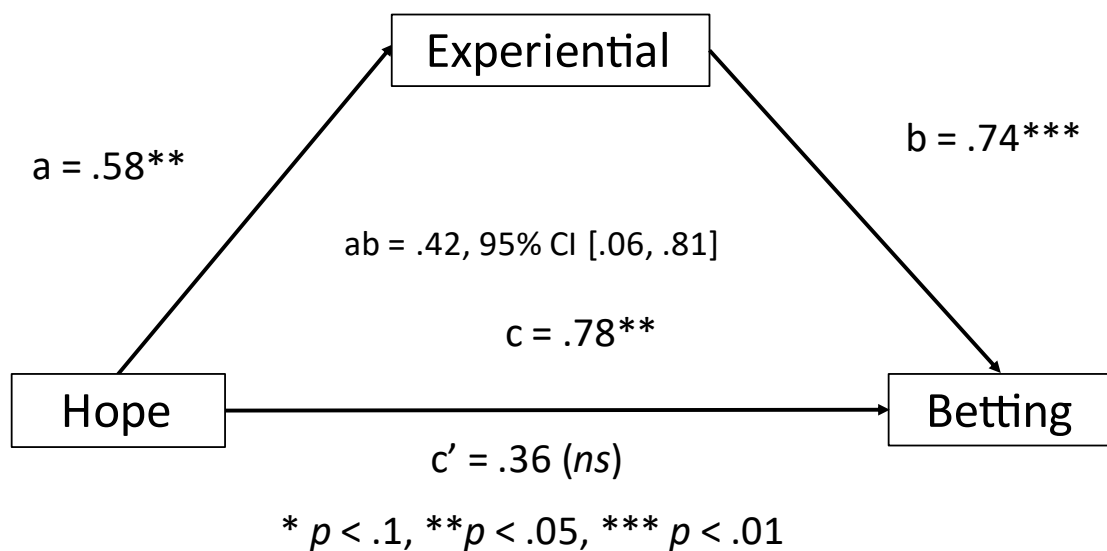
Next, we asked participants the same questions as in study 2, related to how likely they were to bet the rest of their money on the next round, on a scale from 1 = “extremely unlikely” to 7 = “extremely likely,” and how hopeful they were feeling about winning, on a scale of 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever.” Next, we asked them three questions aimed at understanding the underlying mechanism of the effect. To evaluate experiential processing, we asked how strongly they felt they would win, on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever,” and how strong was their hunch they would win, on a scale from 1 = “not strong at all,” to 7 = “stronger than ever” ( $\alpha = .85$ ). To capture expectations about winning and rational processing, we asked how likely it was they would win money, on a scale from 1 = “extremely unlikely” to 7 = “extremely likely.” Finally, participants reported demographic information and answered an attention check.

## Results and Discussion

The manipulation of hope was successful: Participants in the hope condition reported feeling more hopeful ( $M_{\text{hope}} = 4.07$ ,  $SD = 1.55$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.45$ ,  $SD = 1.59$ ;  $F(1, 118) = 4.63$ ,  $p = .033$ ). We created an experiential processing measure consisting of the average of the two experiential items ( $\alpha = .85$ ). Next, we conducted an analysis of variance (ANOVA) with the condition as the independent variable and the experiential score as the dependent variable. Participants in the hope condition displayed greater experiential processing

than participants in the neutral condition ( $M_{\text{hope}} = 3.65$ ,  $SD = 1.45$ ;  $M_{\text{neutral}} = 3.08$ ;  $SD = 1.32$ ;  $F(1, 118) = 5.17$ ,  $p = .025$ ), but the perceived likelihood of winning did not differ between the two conditions, ( $M_{\text{hope}} = 3.67$ ,  $SD = 1.54$ ;  $M_{\text{neutral}} = 3.55$ ,  $SD = 1.40$ ;  $F(1, 118) = .19$ ,  $p = .66$ ). In addition, participants in the hope condition were more likely to bet ( $M_{\text{hope}} = 4.22$ ,  $SD = 1.68$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.43$ ,  $SD = 1.67$ ;  $F(1, 118) = 6.56$ ,  $p = .012$ ), thereby replicating our findings from study 2. Finally, with a mediation analysis, using Hayes's (2018) PROCESS analysis (model 4 with 5,000 bootstrap samples), we examine the mediating role of experiential processing on the effect of hope on gambling. It confirms that experiential processing significantly mediated the relationship between hope and gambling, as depicted in figure 1 (indirect effect:  $ab = .42$ ,  $SE = .19$ , 95% confidence interval [CI] [.064, .81]).

**FIGURE 1: EXPERIENTIAL PROCESSING MEDIATES THE EFFECT OF HOPE ON BETTING (STUDY 3)**





Study 3 demonstrates that hope invokes gambling intentions through system 1 processing; it also replicates the study 2 findings and provides evidence that though hope does not change the perceived likelihood of a hoped-for outcome—in this case, winning—it does lead to the feeling or hunch that one will win. Therefore, in line with findings from the RB game and the simultaneous operation of system 1 and system 2 processing, though participants in the hope condition *felt* they were more likely to win, they *knew* their chances of winning had not increased. In the next two studies, we further examine the driving role of experiential processing in the effect of hope on gambling behavior and identify some theory-driven boundary conditions.

#### **STUDY 4: BASELINE TENDENCIES TO UTILIZE EXPERIENTIAL PROCESSING AS A MODERATOR**

We theorize that hope increases gambling intentions through experiential processing, so we examine whether chronic reliance on experiential processing moderates this effect. Previous research shows that individuals differ in the degree to which they utilize experiential and rational processing (Denes-Raj and Epstein 1994; Kirkpatrick and Epstein 1992; Pacini et al 1998). Therefore, for those who are low in trait experiential processing, we predict hope does not trigger experiential processing and in turn does not influence their gambling choices (hypothesis 3).

#### **Participants and Procedure**

A total of 300 participants completed the study on Prolific ( $M_{\text{age}} = 25$  years, 33% women) in exchange for small monetary amounts. We identified two participants as careless respondents and six participants as outliers according to the criteria used throughout this article, for a final total of 292 participants.

We asked these participants to complete items that measure chronic tendencies to utilize experiential processing, by responding to six items from the Rational-Experiential Inventory (REI-40) experiential subscale (Pacini and Epstein 1999), such as “I often go by my instincts when deciding on a course of action,” and “I tend to use my heart as a guide for my actions,” as well as six items from the rational subscale, such as “I usually have clear, explainable reasons for my decisions,” and “I have a logical mind,” from 1 = “definitely not true of myself” to 5 = “definitely true of myself” (see appendix for details) (Pacini and Epstein 1999). We then randomly assigned participants to either the hope condition or the neutral condition. They read the same scenarios used in study 2 (imagining betting while watching their favorite soccer team play, so far losing money). Participants in the hope condition read that they yearned to win, whereas those in the control condition read they discussed the weather as they waited for the next half to start. Next, we asked them how likely they were to bet the rest of their money on the second half of the game, on a scale from 1 = “extremely unlikely” to 7 = “extremely likely,” and how hopeful they felt they would win, on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever.” We also asked them the two experiential questions from the previous study: “How strongly do you feel you will win?” on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever” and “How strong is your hunch that you will win?” on a scale from 1 = “not strong at all” to 7 = “stronger than ever.”

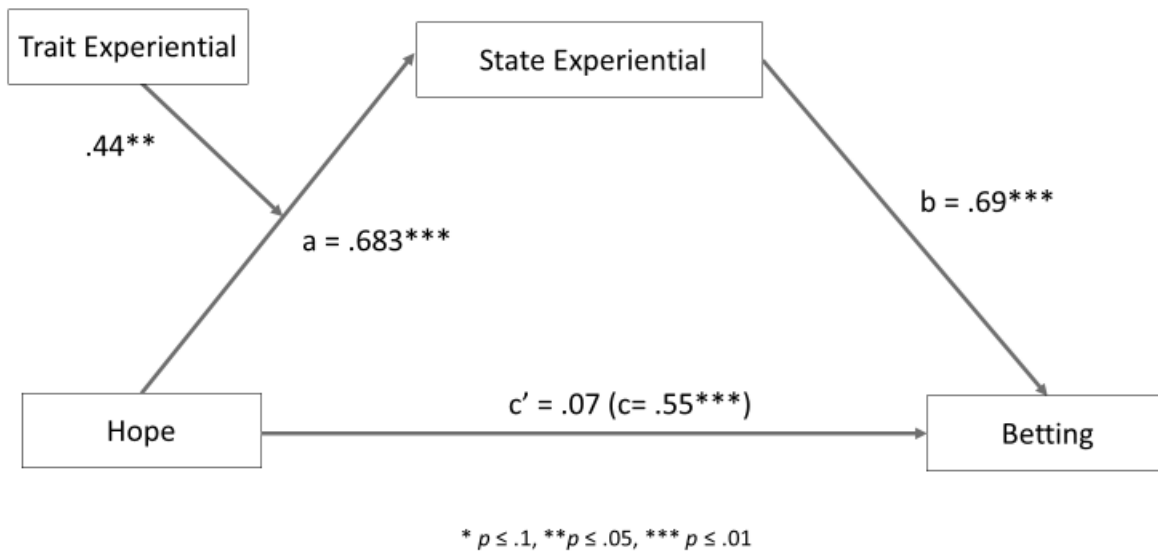
## Results and Discussion

Our inducement of hope was successful: Participants reported feeling more hopeful in the hope condition ( $M_{\text{hope}} = 4.24$ ,  $SD = 1.74$ ) than in the neutral condition ( $M_{\text{neutral}} = 3.30$ ,  $SD = 1.58$ ,

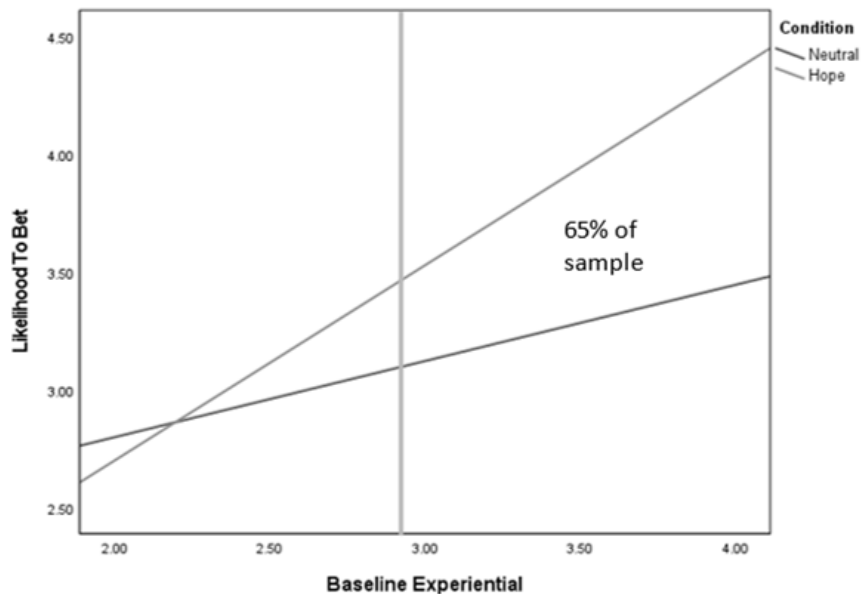
$F(1, 290) = 23.70, p < .01$ ). As predicted, participants in the hope condition also were more likely to bet the remainder of their money on the next round ( $M_{\text{hope}} = 3.73, SD = 1.73$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.19, SD = 1.57, F(1, 290) = 8.01, p = .005$ ), a result that replicates the findings of studies 2 and 3. Similar to study 3, participants in the hope condition reported greater experiential processing ( $M_{\text{hope}} = 3.70, SD = 1.56$ ) than participants in the neutral condition ( $M_{\text{neutral}} = 3.02, SD = 1.43, F(1, 290) = 15.14, p < .01$ ), and system 1 processing predicted betting ( $b = .70, SE = .05, p < .01$ ).

We ran a moderated mediation analysis using Hayes's (2018) PROCESS analysis model 7 with 5,000 bootstrap samples to determine whether chronic reliance on experiential processing moderates the effect of hope on gambling. We found a significant interaction between condition and chronic experiential score ( $b = .44, SE = .23, p = .05$ ), see figure 2. Moreover, a Johnson-Neyman analysis reveals that hope increased experiential processing only among those who had higher levels of chronic reliance on experiential processing, at or above 2.67 on the dispositional experiential scale (72.95% of the sample). Experiential processing mediated the effect of hope on betting only at higher levels of chronic experiential processing (effect of  $ab = .22, SE = .18; 95\% \text{ CI } [-.13, .58]$  at a chronic experiential score of 2.45 or  $-1SD$  below the mean; effect of  $ab = .46, SE = .13; 95\% \text{ CI } [.21, .72]$  at a chronic experiential score of 3.22; and effect of  $ab = .70, SE = .19; 95\% \text{ CI } [.33, 1.07]$  at a chronic experiential score of 4.00 or  $+1SD$  above the mean). Finally, we ran a moderation analysis using Hayes's (2018) PROCESS analysis model 1 with 5,000 bootstrap samples. We found a significant interaction between condition and chronic experiential score ( $b = .51, SE = .25, p = .040$ ). A Johnson-Neyman analysis reveals that hope increased betting only among those who had higher levels of chronic reliance of experiential processing, at or above 2.96 (65.07 % of the sample); see figure 3.

**FIGURE 2: TRAIT EXPERIENTIAL PROCESSING MODERATES THE IMPACT OF HOPE ON STATE EXPERIENTIAL PROCESSING (STUDY 4)**



**FIGURE 3: BASELINE EXPERIENTIAL TENDENCIES MODERATES THE IMPACT OF HOPE ON BETTING (STUDY 4)**



These findings provide evidence for our theorized process that hope leads to gambling through experiential processing. That is, because the person feels hopeful about winning, she or he experiences stronger *feelings* of the likelihood of winning. We also document a boundary condition: For those who are low on trait experiential processing, the impact of hope on gambling intentions disappears. Hope affects the betting decisions only of those who have greater chronic tendencies to rely on experiential processing.

### **STUDY 5: INSTRUCTIONS TO RELY OR NOT ON FEELINGS AS A MODERATOR**

The aim of this study is to provide additional support for our theory through use of a moderation-of-process design (Spencer, Zanna, and Fong 2005). Because hope leads to betting through experiential processing, we predict that when consumers are prompted *not* to rely on their emotions while deciding to bet, the effect of hope on betting will be reduced or even eliminated (hypothesis 4).

#### Participants and Procedure

We recruited 335 participants ( $M_{\text{age}} = 26$  years, 65% men) from Prolific in exchange for small monetary amounts. We identified three participants as careless but found no outliers as defined by the criteria used throughout this article, for a final total of 332 participants. The study uses a 2 (condition: hope vs. neutral)  $\times$  2 (instruction: to rely vs. to not rely on feelings) between-subject design. We randomly assigned participants to one of four conditions. First, they read the hope-related and neutral scenarios used in studies 2 and 4, imagining betting while watching

their favorite soccer teams play and either yearning to win money (hope condition) or discussing the weather as they waited for the second half of the game to start (neutral condition). We then gave them a hope manipulation check by asking how hopeful they were feeling they would win, on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this stronger than ever,” followed by the experiential questions previously used: “How strong do you feel you will win?” and “How strong is your hunch that you will win?” on a scale from 1 = “not strong at all” to 7 = “stronger than ever.” Next, we asked them how likely they were to bet the rest of their money on the second half of the game, on a scale from 1 = “not at all likely” to 7 = “more likely than ever” and gave them one of two instructions: “Please do not trust your feelings in making this decision” or “Please trust your feelings in making this decision.” Next, we issued the manipulation check: “How much did you rely on your feelings to make your decision in the last question?” on a scale from 1 = “not at all” to 6 = “completely,” followed by demographic questions and an attention check.

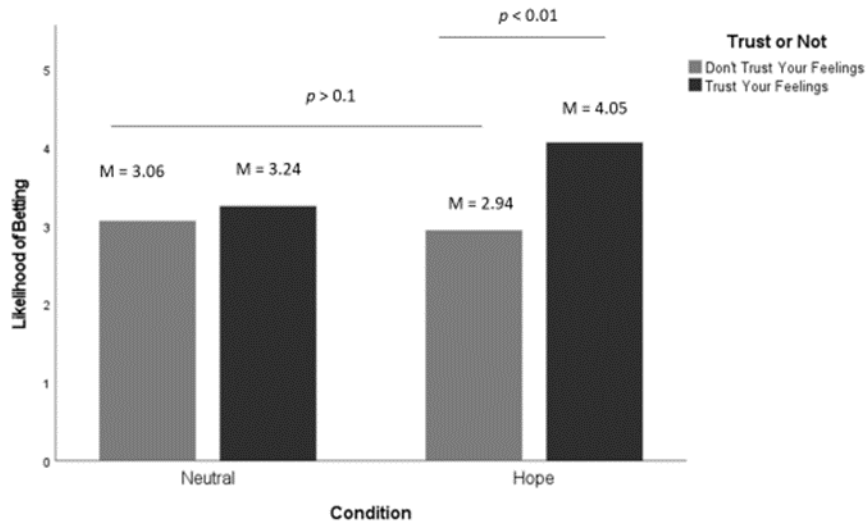
## Results and Discussion

The manipulation of hope was successful: Participants in the hope condition reported stronger feelings of hope ( $M_{\text{hope}} = 4.62$ ,  $SD = 1.61$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.39$ ,  $SD = 1.65$ ;  $F(1, 330) = 46.71$ ,  $p < .01$ ). We also successfully manipulated trusting one’s feelings: Participants whom we instructed to trust their feelings reported relying on their feelings to a greater degree ( $M_{\text{trust}} = 4.46$ ,  $SD = 1.50$ ) than those we instructed not to trust their feelings ( $M_{\text{do not trust}} = 3.49$ ,  $SD = 2.71$ ;  $F(1, 330) = 16.45$ ,  $p < .01$ ).

We conducted an ANOVA with likelihood of betting as the dependent variable and

emotion and instructions to rely on one's feelings as the independent variables. The analysis revealed a significant main effect for instruction, such that participants were more likely to bet when instructed to rely on their feelings ( $M_{\text{trust}} = 3.66$ ,  $SD = 1.73$ ) than when instructed not to rely on their feelings ( $M_{\text{do not trust}} = 3.00$ ,  $SD = 1.67$ ;  $F(1, 328) = 12.54$ ,  $p < .01$ ). The main effect of hope is marginal, with participants displaying a higher likelihood of betting in the hope condition ( $M_{\text{hope}} = 3.50$ ,  $SD = 1.78$ ) than in the neutral condition ( $M_{\text{neutral}} = 3.15$ ,  $SD = 1.67$ ;  $F(1, 328) = 3.52$ ,  $p = .061$ ). Notably, we found a significant interaction between emotion and instruction ( $F(1, 328) = 6.38$ ,  $p = .012$ ). In the hope condition, participants who were instructed to trust their feelings bet more ( $M_{\text{hope, trust}} = 4.06$ ,  $SD = 1.77$ ) than those who were instructed not to trust their feelings ( $M_{\text{hope, do not trust}} = 2.94$ ,  $SD = 1.62$ ;  $p < .01$ ). In the neutral condition, there was no difference in the likelihood of betting between participants who were instructed to trust ( $M_{\text{neutral, trust}} = 3.24$ ,  $SD = 1.61$ ) and those who were instructed not to trust their feelings ( $M_{\text{neutral, do not trust}} = 3.06$ ,  $SD = 1.73$ ;  $p = .47$ ). Finally, there was no significance difference in the likelihood of betting between those in the hope condition who were instructed not to trust their feelings and those in either neutral condition ( $M_{\text{hope, do not trust}} = 2.94$ ,  $SD = 1.62$ ;  $M_{\text{neutral, do not trust feelings}} = 3.06$ ;  $SD = 1.73$ ;  $p = .646$ ;  $M_{\text{hope, do not trust}} = 2.94$ ,  $SD = 1.62$ ;  $M_{\text{neutral, trust feelings}} = 3.25$ ;  $SD = 1.60$ ;  $p = .24$ ), as we show in figure 4.

**FIGURE 4: LIKELIHOOD OF BETTING WHEN INSTRUCTED TO TRUST OR NOT TRUST ONE’S FEELINGS (STUDY 5)**



These results are consistent with the theorized process that hope leads to betting through experiential processing. That is, when a consumer is instructed to not rely on experiential processing, betting intentions are not influenced by hope.

**STUDY 6: EFFECT OF HOPE ON ACTUAL BETTING BEHAVIOR**

Because studies 1 to 5 measured betting intentions, we designed study 6 to measure betting behavior with actual consequences. In addition, we used a different gambling setting, betting on a football game. We used a two-condition between-subjects design and manipulated hope, which should lead to both betting intentions and actual betting behavior.



## Participants and Procedure

We recruited 480 participants on the Prolific platform ( $M_{\text{age}} = 26$  years, 42% women) in exchange for small monetary amounts. We identified one participant as a careless respondent and identified 11 outliers, for a final total of 468 participants. We asked the participants to imagine gambling on a football game in which their favorite team was playing. We instructed them that as they waited for the second half to start, they either were discussing the weather with friends (neutral condition) or thinking about how much they yearned to win their bet on the football game (hope condition). Next, we asked them how hopeful they were feeling about winning, as a manipulation check, on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever.” We then informed them that in addition to the 15 cents listed as compensation for the survey, they had earned an additional 15 cents which they could use to bet, for a one in 10 chance of winning 50 cents. In an attempt to simulate more realistic betting behavior, we told them the additional 15 cents was *earned* rather than *given*, because research shows people behave differently with earned rather than given money, that is, they display the windfall effect (Arkes et al. 1994). Next, we asked them how likely they were to bet, on a scale of 1 = “not at all likely” to 7 = “extremely likely,” and followed with a question that asked them to decide whether to bet the 15 cents. Finally, we asked demographic and attention check questions.

## Results and Discussion

The manipulation of hope was successful: Participants in the hope condition reported

feeling more hopeful ( $M_{\text{hope}} = 4.85$ ,  $SD = 1.22$ ) than participants in the neutral condition ( $M_{\text{neutral}} = 3.15$ ,  $SD = 1.41$ ;  $F(1, 466) = 194.35$ ,  $p < .01$ ).

We conducted an ANOVA with the hope condition as the independent variable and likelihood of betting as the dependent variable. Participants in the hope condition were significantly more likely to bet ( $M_{\text{hope}} = 4.84$ ,  $SD = 2.00$ ) than participants in the neutral condition ( $M_{\text{neutral}} = 4.38$ ,  $SD = 2.05$ ;  $F(1, 466) = 6.12$ ,  $p = .014$ ). Similarly, more people in the hope condition actually bet (164 of 233) than did those in the neutral condition (135 of 235,  $b = .57$ ,  $SE = .20$ ; odds ratio [OR] = 1.76;  $p = .004$ ). Therefore, hope leads not just to betting intentions but to actual betting behavior. When participants had real money to bet with, those in the hope condition expressed greater intentions of betting and were more likely to bet than those in the neutral condition. Moreover, the scenario we used in this study related to betting on a football game, whereas in the previous studies, we used lottery, soccer, and Blackjack gambling scenarios. Therefore, our results provide further insight into how hope of winning induces both gambling intentions and actual gambling behavior in a variety of contexts.

## GENERAL DISCUSSION

Hope is a commonly encountered emotion; From hoping to pay off debt to hoping to be cured of a terminal illness, hope permeates our lives and affects our decision making and behavior (Fazal-E-Hasan et. al 2020; Feldman and Kubota 2015; MacInnis and De Mello 2005; Poels and Dewitte 2008). Generally, hope is conceptualized as a positive emotion. We ask: Can it also lead to suboptimal decisions? Our research shows it can. In six studies, including one consequential study, we demonstrate that hope influences risky decisions in gambling contexts. Hope of winning leads to the feeling that one is more likely to win, interestingly without

changing rational expectations of winning.

Study 1 shows that consumers with hopeful dispositions are more likely to buy lottery tickets. Study 2 shows inducing hope leads to increased intentions to bet. Study 3 provides evidence for the underlying process by showing experiential processing mediates this effect; it reveals that though hope leads to a feeling or hunch that one is more likely to win, it does not change the perceived likelihood of winning. Studies 4 and 5 reveal two boundary conditions: when people are instructed not to rely on their feelings and when people tend not to utilize experiential processing, the effect of hope is eliminated. In study 6 we also illustrate that hope affects actual gambling decisions.

### Theoretical Contributions

Our work adds to extant literature in several meaningful ways. Theoretically, we contribute to literature on hope, information processing, and risk taking. We explain and show how hope, a positive emotion, leads to gambling by triggering experiential processing. As such, our work offers a novel perspective on hope, cautioning that it can have detrimental effects on daily consumption decisions. Whereas extant literature on hope in the consumer behavior realm has focused largely on its positive consequences, such as improved problem-solving skills (Chang 1998), imagination (Cavanaugh et al. 2011), and self-control (Winterich and Haws 2011), we identify a context in which hope leads to suboptimal decisions. MacInnis and De Mello (2005) theorize that hope negatively influences information processing, and past researchers have revealed a link between experiential processing and gambling (Armstrong et al. 2020; Consenza et al. 2019; Denes-Raj and Epstein 1994; Emond and Marmurek 2010). We add

to this work by empirically demonstrating that hope is an antecedent of experiential processing that in turn motivates gambling.

A possible alternative explanation for why hope leads to gambling is that hope increases expectations, leading people to believe they actually are more likely to win. Yet as study 3 reveals, even when consumers are more hopeful about winning, no significant difference exists between them and the control group with regard to the rational expectation of the likelihood of winning. This result replicates findings from the RB game (Denas-Raj and Epstein 1994; Epstein and Pacini 2001; Kirkpatrick and Epstein 1992) and illustrates how experiential and rational processing occur simultaneously, such that the relative weight of each system determines behavior.

### Practical Contributions

Our work also adds to literature on gambling behavior. Rates of gambling addiction are on the rise, with estimates that up to 10 million Americans currently suffer from gambling addiction (North American Foundation for Gambling Addiction Help 2016). We seek to gain a better understanding of the drivers of such detrimental behavior and contribute to formulating interventions. Prior research shows that the relatively fixed factors of lower socioeconomic status (Brinner and Clotfelter 1975; Hansen et al. 2000), impulsiveness and materialism (Mowen et al. 2009) predict gambling. Our work reveals that hope, a commonly experienced positive emotion that fluctuates over time, also induces gambling behavior. This has immediate implications for policy makers, mental health practitioners, and consumer advocates who wish to attenuate the burdens of gambling addiction. Situational shifts in hope can influence how much gamblers are

willing to bet, and this effect holds in a variety of gambling contexts, from betting on Blackjack to betting on a football game. Perhaps more important, our results show that this effect disappears if people are prompted to not rely on their feelings. By creating awareness of this phenomenon, we hope our findings have positive ramifications, particularly for those who are at risk of or struggle with gambling addiction. For example, one strategy to protect consumers would be to spread awareness that simple shifts in thinking, such as being mindful not to rely on one's feelings, can improve decision making and decrease gambling activity.

### Limitations and Areas for Further Research

To evaluate experiential processing, we asked participants how strongly they felt they would win and how strong was their hunch they would win. Previous measures of situational experiential processing have included asking participants if they based their decisions on how they felt versus what they calculated (Godek and Murray 2008) and items such as “I used my gut feelings” and “I trusted my hunches” in the Situational-Specific Experiential and Rational Cognition Scale (Novak and Hoffman 2009, p. 60). Hence, although the items we used are similar to those used previously, we did not specifically ask if that was what they used or relied on for making their betting decision. Therefore, future studies would benefit from adding another item asking how much did they rely on their feelings (hunch) when making the betting decision.

Another area for researchers to examine further is how other emotions affect experiential and rational processing. Positive affect in general might lead to experiential processing (Epstein and Pacini 2001), but we predict that, because hope is unique among other positive emotions in stimulating visualization (Cavanaugh et al. 2011), other positive emotions do not lead to experiential processing as much as hope does. The other emotions even might lead to rational

processing. For example, anxiety, a future-focused negative emotion, triggers thoughts about potential negative future consequences which may lead to rational thinking. Therefore, continued research might compare hope with other emotions to assess their impacts on system 1 and system 2 processing.

Previous research shows that consumers behave differently with earned money versus given money (Arkes et al. 1994). In study 6, we attempted to simulate realistic income by telling participants they had earned an additional amount they could use to bet; however, it still represented unexpected income, which likely has distinct influences on consumer decisions (Arkes et al. 1994). Thus, an area for additional research is to determine how factors such as earned versus unearned wealth, as well as expected versus unexpected income, influence hope's effect on betting decisions. Because casinos often entice consumers with starting allowances to bet (a type of unearned income), it would be interesting to determine how using such enticements, compared with using one's own money, influences the effect of hope.

Also, we call for investigations of whether natural manipulations of hope lead to betting. For example, there are times when people may feel more hopeful, such as on Fridays when they near the end of the work week or in spring as warmer weather arrives. A field study might examine people's hope levels across these temporal variations to determine if they in turn predict rates of gambling. If so, it would be prudent for at-risk consumers to be aware of this effect and be extra vigilant in recognizing how these subtle factors may influence their decision making.

Hope may have differing impacts on cognition and information processing depending on time of day too (Cavanaugh et al. 2011); depending on a person's preference for time of day (morning versus evening), hope improves fluid processing during undesirable times. Therefore, another potential area of research is to account for how people's preferences for time of day

influence hope's impact on gambling choices. For example, for those who prefer morning hours, hope's positive influence on decision making in the evening hours could be another boundary condition for hope's impact on gambling decisions. Because most casino gambling takes place in the evening, this question raises an important area for research.

Although our article focuses on gambling, various situations beyond the domain of betting might induce hope subtly and lead to suboptimal decisions. For example, a person with a terminal illness who consents to an experimental (vs. conventional) treatment may be filled with hope that the experimental treatment will be the cure, prompting experiential processing and suboptimal decisions. If they are hoping the treatment will work, they may neglect hard decisions they would otherwise make, such as writing their wills or planning care. Or following a break-up, a person may hope for reuniting, thereby becoming "trapped" and unable to move on.

## Conclusion

The study of hope in consumer behavior is a relatively new topic; extant literature highlights the positive effects of hope, but our article aims to shed empirical light on the unexplored "dark" side of hope, namely, how hope might lead to gambling. We hope our findings offer theoretical and practical contributions and serve as a prelude for further research that examines the potentially precarious consequences of hope with regard to consumption decisions.

## **CHAPTER 3**

### **I Hope Therefore I Save: The Positive Effect of Hope on Financial Decision Making (ESSAY 2)**



# **I Hope Therefore I Save: The Positive Effect of Hope on Financial Decision Making**

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## **ABSTRACT**

Across five studies, this research shows that hope increases willingness to save. The effect of hope on savings intention is mediated by a focus on the future. If hope is no longer focused on the future but instead orients toward the past, the positive effect disappears. To rule out positive emotion in general as a driving effect, the authors also examine pride, a positive emotion generally focused on the past; it does not induce savings intentions unless the focus shifts toward the future. Another alternative explanation entails a sense of closeness with the future self, which arguably could drive the effects on savings intention, but the results do not support this notion and instead reiterate that a future time perspective represents the key mediator of the effect of hope on willingness to save. In addition to their practical applications, these findings have relevant implications for research on positive emotion, time perspectives, and financial decision making.

**Keywords:** hope, positive emotion, time perspective, financial decision making, savings.

Once you choose hope, anything's possible.

—Christopher Reeve

Positive emotion often influences consumer decisions. One positive emotion, frequently evoked in daily decision making, is hope. Research on hope as it relates to consumer behavior is rare though, beyond assertions that hope might exert significant impacts on decision making and behavior (Fazal-E-Hasan et al. 2020; Feldman and Kubota 2015; MacInnis and De Mello 2005; Poels and Dewitte 2008; Winterich and Haws 2011). To offer more differentiated insights, we take the U.S. consumer savings crisis as a relevant research context (Benartzi and Thaler 2013) and investigate if feeling hopeful might motivate people to save. Despite enhanced saving incentives and strategies by both private and public entities, most U.S. consumers have insufficient savings; according to the Economic Policy Institute, “nearly half of families have no retirement account savings at all” (Morrissey 2016), and the Federal Reserve (2019) estimates that four in ten people cannot afford an unexpected \$400 expense.

Studying saving also has been a social science priority for decades, prompting contributions from economics (Kotlikoff 1998; Thaler 1994), psychology (Adams and Rau 2011), and theology (Proverbs 21:20 Living Bible). Although extensive research considers why people do not save (Bertrand, Mullainathan, and Shafir 2006; Griskevicius et al. 2013; Mani et al 2013), many of the theoretical explanations available involve fixed factors (Garbinsky, Klesse, and Aaker 2014), such as childhood experiences and education level. More recent efforts also propose practical interventions to motivate people to save, such as inducing a sense of power (Garbinsky et al. 2014), presenting aged renderings of the person (Hershfield et al. 2011), or asking people to consider the future potential consequences of saving (Nenkov, Inman, and

Hulland 2008). But the lack of adequate savings by U.S. households indicates the need for further insights into how to motivate such behaviors; we propose hope represents a novel intervention option.

With five studies, we establish that people who feel hopeful are more willing to save. Hope increases savings by shifting consumers' attention to the future. We show that hope increases savings by shifting one's attention to the future and we rule out future self-continuity as an alternative process. We further demonstrate the importance of future focus by comparing hope to pride. We find that both hope and pride can increase the willingness to save, but only if they are future-oriented; when pride and hope refer to the past, their impact on savings intentions disappears. With these findings, we thus offer several contributions. We advance literature on financial decision making by documenting how hope influences motivations to save. More broadly, our work contributes to research into the implications of positive emotions for consumer decision making (Park and Kim 2008; Rocklage and Fazio 2020; Winterich and Haws 2011) by clarifying how the time perspective linked to positive emotions ultimately determines the outcomes of savings decisions. Furthermore, we establish a basis for more practical interventions to address the current savings crisis (Benartzi and Thaler 2013): Even small shifts in people's sense of hope can make them more willing to save.

## **THEORETICAL BACKGROUND**

### **The Emotion of Hope**

Hope is a “positive emotion that varies as a function of the degree of yearning for an uncertain, yet possible outcome” (MacInnis and Chun 2006, p. 11). It is not focused on a goal itself but rather arises from a focus on a desired outcome. It also differs from expectations, such

that expectations can be congruent or incongruent with goals, but hope is always goal congruent (MacInnis and Chun 2006). Furthermore, hope differs from optimism: Whereas optimism implies confidence about a goal-congruent outcome, hope reflects a more realistic appraisal of the likelihood of this desired outcome (MacInnis and Chun 2006). Unlike similar positive emotions, hope is firmly oriented toward the future (Winterich and Haws 2011). For example, pride often stems from the past, and happiness is concerned with the present (Winterich and Haws 2011), but hope implies envisioning a positive future outcome (MacInnis and Chun 2006; Stotland 1969).

In turn, hope has implications for decision making and consumption. It has been suggested that hope may increase confirmation bias, due to motivated reasoning (MacInnis and De Mello 2005). In addition, Poels and Dewitte (2008) show that hope can increase advertising persuasiveness and willingness to try a product. These effects might anticipate decreased decision-making quality, but instead, research indicates that people who are more hopeful display greater problem-solving skills (Chang 1998); enhanced cognitive processing, performance, and imagination (Cavanaugh et al. 2011); and less unhealthy food consumption (Winterich and Haws 2011). In line with these other positive effects, we predict that hope can motivate savings, because feeling hopeful should increase consumers' future time perspective by shifting their focus to the future.

### **Future Time Perspective**

A future time perspective,<sup>1</sup> as defined by Jacobs-Lawson and Hershey (2005, p. 332), is

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<sup>1</sup> We use this term but also note common synonyms, such as temporal focus, future orientation, or planning horizon (Jacobs-Lawson and Hershey 2005; Winterich and Haws 2011).

“a measure of the extent to which individuals focus on the future, rather than the present or past,” which has positive effects on decision making (Bandura 2011; Shipp, Edwards, and Lambert 2009; Winterich and Haws 2011) and goal setting (Bandura, 2001; Fried and Slowik 2004). A past focus generally is associated with negativity and may decrease well-being (Sanna, Stocker, and Clarke 2003; Shipp et al. 2009); a present focus can lead to impulsiveness (Zimbardo, Keough, and Boyd 1997). Instead, a future focus increases self-regulation through awareness of future consequences and reordered priorities, which establish a sense of meaning and motivate planning for positive action for the future (Bandura 2001; Das 1987). In addition, a future time perspective can prompt trade-offs between present and future goals (Daugherty and Brase 2010). Hope, as a future-oriented emotion, thus might increase goal pursuit, enhance self-control, and motivate positive behavioral change for the future.

Because the act of saving depends on a person’s ability to create clear goals and plan for the future (Stawski, Hershey, and Jacobs-Lawson 2007), as well as exhibit self-control in trading off between present splurges and the prospect of a comfortable future (Berns, Laibson, and Loewenstein 2007), a future time perspective seems likely to enhance savings. Prior research affirms that a future time perspective predicts retirement readiness and savings (Hershey and Mowen 2000; Jacobs-Lawson and Hershey 2005), whereas people with a shorter time horizon have a lower net worth on average and expect to receive less in retirement (Lusardi 1999). As such, we aim to examine if the effect of hope, through its focus on the future, leads to an increased intention to save.

People differ in the degree to which they identify with their future selves (Ersner-Hershfield, Wimmer, and Knutson 2009), so as hope shifts their attention to the future, perhaps they connect better with their future selves. If a person views their future self as distant or as

“someone else” (Parfit 1971), they may be less likely to save, because saving for that future self is similar to giving money to a stranger (Hershfield et al. 2011). If instead the person links their current and future selves, they may be more motivated to support that future self. The degree of future self-continuity can predict temporal discounting and savings (Bartels and Rips 2010; Ersner-Hershfield et al. 2009; Ellen, Wiener, and Fitzgerald 2012; Hershfield et al. 2011). Specifically, activity in the rostral anterior cingulate portion of the brain, which is responsible for judgments focused on the current- versus future-self, predicts temporal discounting behavior (Ersner-Hershfield et al. 2009). In addition, studies have shown that viewing aged renderings of a future self increases people’s sense of connection with that future self, which in turn increases their willingness to save (Hershfield et al. 2011). Accordingly, we test if future self-continuity might explain the effect of hope on savings. We combine this theorizing to hypothesize:

**H1:** Hope increases savings intentions.

**H2:** The effect of hope on savings intentions is mediated by the induction of a future time perspective.

Because hope is usually future focused (MacInnis and Chun, 2006), hypotheses 1 and 2 anticipate that feeling hopeful induces a future time perspective that leads to savings. However, it is also possible to feel hopeful when recalling a past experience (Winterich and Haws 2011), such as remembering the excitement and hope linked to nearing college graduation. Does feeling hopeful about a past event also lead people to save more money? In line with our prediction that it is the shift in focus to the future that drives the effect of hope on savings intentions, we anticipate that past-focused hope does not evoke a similar increase in willingness to save. Given future-focused mindsets increase goal setting and self-regulation (Bandura 2001; Cottle 1976; Fried and Slowik 2004; Hall and Fong 2007; Nuttin 2014), when the focus of hope shifts to the

past, we anticipate its effect on saving will disappear.

Positive affect in general can have various benefits for decision making, in that it increases creativity (Isen, Daubman, and Nowicki 1987), attentiveness to goal pursuit (Gervey, Igou, and Trope 2005), and the ability to delay gratification (Pyone and Isen 2011). Therefore, hope could lead to savings if a general sense of positive affect, elicited by hope, actually leads to the savings intentions. To address this alternative explanation, we compare hope with pride. In line with our theorizing that the future focus of hope leads to savings, we consider pride because it represents another positive emotion but one that usually focuses on the past (Winterich and Haws 2011). Pride is generally focused on a former achievement, such as having graduated after a lot of hard work. Previous research indicates that this focus on past achievements may increase indulgent choices (Wilcox, Kramer, and Sen 2011), such as unhealthy food consumption (Winterich and Haws 2011). We hypothesize that since a future time perspective leads to an increase in willingness to save, that pride, with its past focus, will not motivate savings.

Although pride typically focuses on the past and hope on the future, the time perspective of either emotion can be manipulated (Winterich and Haws, 2011). For example, to shift the focus of pride to the future, people might be encouraged to imagine the pride they would feel upon receiving a job offer that acknowledges their hard work. In this case, future-focused pride might exert effects similar to future-focused hope and increase willingness to save. In summary, we predict that the time perspective of positive emotion ultimately drives the effect on savings.

**H3:** The experience of positive emotions (hope or pride) leads to greater savings intentions if it is future rather than past focused.

## OVERVIEW OF STUDIES

In study 1, we measure baseline hope levels, future time perspectives, and savings intentions, which enables us to establish that trait hope and tendency to save correlate positively, mediated by a future time perspective. In studies 2A and 2B, we experimentally test our first hypothesis and find that increased states of hope lead to greater intentions to save. In study 3, we show that the effect of induced hope on willingness to save is mediated by a future time perspective (H2). Study 4 offers further insights into the crucial role of a future time perspective, by showing that hope increases savings more when the time perspective is future rather than past. With study 4, we also examine the effect of pride and determine that pride does not lead to savings unless its focus shifts to the future. That is, by manipulating the time perspective of pride and hope, we demonstrate that the effect on savings depends on the time perspective, rather than the emotion itself (H3). Study 5 addresses an alternative explanation, based on a sense of connectedness with the future self, for why hope might lead to savings intentions. However, future self-connectedness does not mediate hope's effect on savings, whereas a future time perspective does.

### STUDY 1: TRAIT HOPE PREDICTS SAVINGS

With study 1, we aim to establish correlational support for the impact of hope on savings. A sense of hopefulness may fluctuate from day to day, but people also differ in how hopeful they feel in general (i.e., trait hope; Martin-Krumm et al. 2014; Snyder et al. 1996). According to our theorizing, such trait hope should correlate positively with willingness to save money, mediated by future time perspective.

#### Participants and Procedure



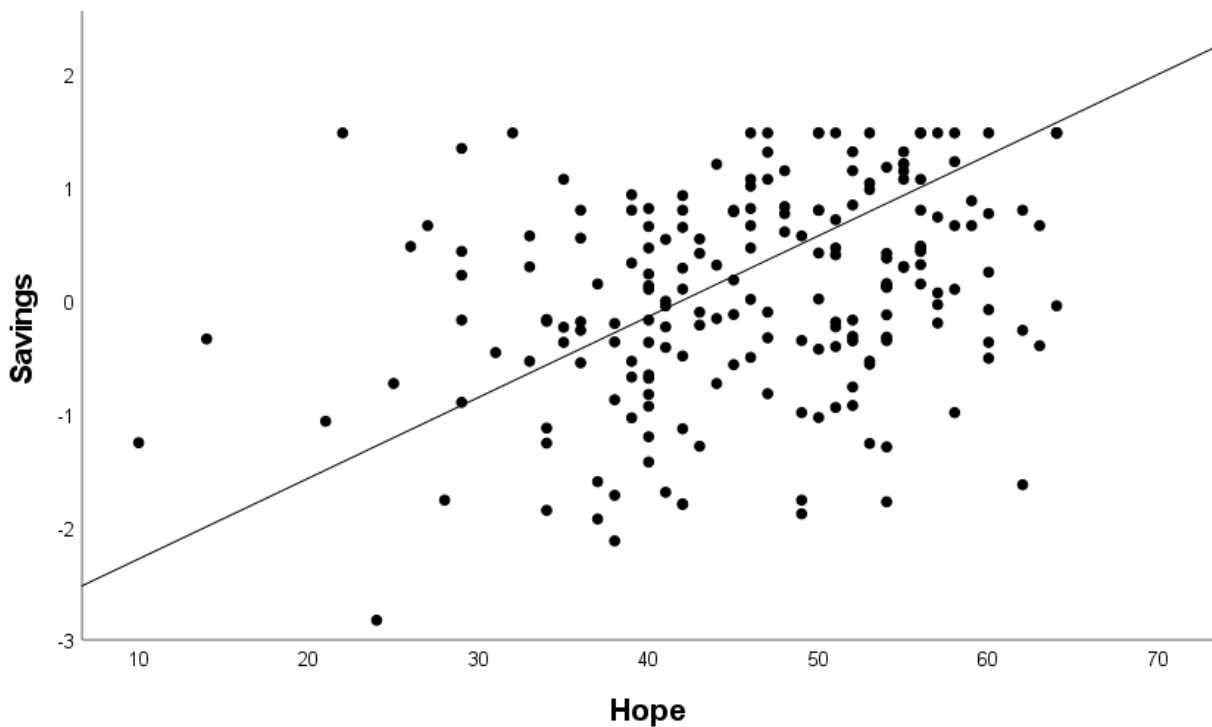
In return for small monetary compensation, 201 Amazon Mechanical Turk (MTurk) workers (58% women,  $M_{\text{age}} = 40$  years) participated in this study. (Age was classified by range, such that the mean age range was 35–44 years, and we calculate the mean age for this range, which is 40 years. In the subsequent studies, we measure actual age.) Participants completed the Hope Trait Scale (Snyder et al. 1991), which consists of 12 items, (e.g., “I can think of many ways to get out of a jam,” “I energetically pursue my goals”; scale from 1 = “definitely false” to 8 = “definitely true”; see appendix 1 for full scales). They next completed the 6-item future time perspective scale (Jacobs-Lawson and Hershey 2005), (e.g., “I enjoy thinking about how I will live years from now in the future”; scale from 1 = “strongly disagree” to 7 = “strongly agree”). Finally, they provided responses to three savings items, adapted from Garbinsky et al. (2014): “How much savings do you have?” (scale from 1 = “\$0” to 7 = “\$30,000 or greater”), “Imagine you receive an extra \$500 per month for the next year. Please indicate how likely you would be to save some of this additional income” (scale from 1 = “definitely not” to 6 = “definitely”), and “Imagine you receive an extra \$500 dollars per month for the next year. Please indicate how much of the money you would save” (scale from 0 = “\$0” to 5 = “\$500”).

## **Results and Discussion**

We examined the relations between trait hope and willingness to save. First, to ensure the three savings items measure a single construct and acknowledging the different scales for the savings items, we conducted a factor analysis of the three items and a single factor emerged. We used the factor score as our savings score and conducted the linear regression analysis with this savings score as our dependent variable. Using a criterion based on standardized residuals greater than an absolute value of 2.5, we identified five outliers for this study; we used the same method to identify outliers in the other studies as well.

The results show that trait hope significantly predicts savings intentions ( $F(1, 194) = 20.75, p < .01, b = .028, SE = .006, R^2 = .097$ ; Figure 1). It also significantly predicts a future time perspective ( $F(1, 194) = 52.07, p < .01, b = .29, SE = .04, R^2 = .21$ ), and in turn, future time perspective significantly predicts savings ( $F(1, 194) = 49.88, p < .01, b = .065, SE = .01, R^2 = .21$ ). In a mediation analysis, using Hayes's (2018) PROCESS macro 3.2, Model 4, with 5,000 bootstrap samples, we include trait hope as the predictor, future time perspective as the potential mediator, and the savings regression score as the outcome variable. Future time perspective significantly mediates the relationship between hope and savings (indirect effect:  $b = .0165, SE = .0038, 95\% \text{ confidence interval [CI] } [.0096, .025]$ ).

**FIGURE 1: Relation Between Trait Hope and Savings Score**



These findings provide initial support for our hypothesis that trait hope leads to savings,

through a future time perspective. The results are correlational though, so we cannot infer causality or directionality. They instead provide a solid foundation for our continued efforts to determine if hope leads to savings.

## **STUDY 2A: HOPE AFFECTS WILLINGNESS TO SAVE**

The aim of study 2A is to examine if hope affects savings behavior. Whereas study 1 establishes that people who are more hopeful in general tend to save more, with this study, we seek to investigate if eliciting a *state* of hope also increases savings behavior.

### **Participants and Procedure**

One hundred eighty-four MTurk workers (49% women,  $M_{\text{age}} = 39.01$  years,  $SD = 12.43$  years) participated for a small monetary reward, but 13 participants were removed after being identified as careless responders (agreeing to “I live on Mars”), as were 4 outliers (absolute standardized residual greater than 2.5 for either the manipulation check or main analysis; see the appendix). We assigned the remaining 167 participants randomly to one of two conditions: hope or neutral. They read a short scenario, designed to induce hope or be neutral. In the hope condition, the scenario described an ideal job posting (Winterich and Haws 2011); the neutral condition described washing dishes (see the appendix for the full scenarios). As a manipulation check, participants indicated how hopeful they felt on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever” (Winterich and Haws 2011).

Participants then answered three questions, which assessed their willingness to save: “Imagine you receive an extra \$500 per month for the next year,” “Imagine you receive an extra \$1000 per month for the next year,” and “Your work just offered a new retirement savings plan

where they will match your contributions up to \$50 a month.” They were asked to indicate how likely they would be to save, on a scale from 1 = “definitely not” to 6 = “definitely” ( $\alpha = .74$ ).

We averaged the responses to create a mean savings score.

## **Results and Discussion**

A between-subjects analysis of variance (ANOVA), with condition (hope vs. neutral) as the independent variable and the hope score (“How hopeful do you feel?”; 1–7 scale) as the dependent variable, revealed that participants in the hope condition reported feeling greater hope ( $M_{\text{hope}} = 5.83$ ,  $SD = .95$ ) than those in the neutral condition ( $M_{\text{neutral}} = 3.78$ ,  $SD = 1.81$ ;  $F(1, 165) = 82.87$ ,  $p < .01$ ). Therefore, the hope scenario successfully elicited hope.

To evaluate hypothesis 1, we ran an ANOVA to examine the effect of elicited hope on savings. As predicted, participants in the hope condition ( $M_{\text{hope}} = 5.05$ ,  $SD = .84$ ) displayed greater willingness to save than those in the neutral condition ( $M_{\text{neutral}} = 4.72$ ,  $SD = 1.12$ ;  $F(1, 165) = 4.78$ ,  $p = .039$ , Cohen’s  $d = .34$ ). These results support the hypothesis that feeling hopeful increases savings intentions. To check the robustness of this effect, we apply a different hope manipulation in study 2B and also measure savings intentions in relation to participants’ current income.

### **STUDY 2B: HOPE AFFECTS WILLINGNESS TO SAVE**

The previous hope scenario cited a dream job; for study 2B, we attempt to induce hope unrelated to money, to address the potential confound. In addition, we shift the neutral condition, so that both the hope and neutral conditions pertain to the same topic, namely, receiving a pacemaker. Finally, to measure savings intentions, we asked participants to indicate how much

they would prefer to save out of their current monthly income, not as a proportion of additional income, because people treat windfalls differently than regular income (Arkes et al 1994; Garbinsky et al 2014).

## **Participants and Procedure**

Three hundred sixty-three participants (56% women,  $M_{\text{age}} = 32.40$  years,  $SD = 10.86$  years) completed this study on Prolific, in exchange for a small monetary payment. They were randomly assigned to a hope or neutral condition, but in both cases, they were asked to imagine they had just received a pacemaker. In the neutral condition, the scenario indicated they had just returned home and began folding laundry while watching a weather channel; in the hope condition, the scenario described their yearning for the pacemaker to last a long time. The manipulation check item asked, “How hopeful are you feeling that the pacemaker will work in the future?” (1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever”). Next, participants indicated how much they earned per month and how much of it they would like to save. Our measure of savings intentions thus equals the percentage of their monthly income they indicated they would like to save (Garbinsky et al. 2014, 2020). Using a percentage measure enables us to control for potential differences in monthly income among the participants (Garbinsky et al. 2014, 2020). We excluded 35 participants who indicated unrealistic monthly earnings (e.g., \$1) or claimed they would save more than they earned (Garbinsky et al. 2020), as well as 21 outliers based on the previously described criterion, leaving 307 total participants.

## **Results and Discussion**

The between-subjects ANOVA with condition (hope vs. neutral) as the independent variable and hope score (“How hopeful do you feel?” 1–7 scale) as the dependent variable

confirms the successful manipulation of hope. Participants in the hope condition report feeling more hope that the pacemaker would work in the future ( $M_{\text{hope}} = 5.82$ ,  $SD = 1.03$ ;  $M_{\text{neutral}} = 5.04$ ,  $SD = 1.09$ ;  $F(1, 305) = 41.17$ ,  $p < .01$ ).

To test hypothesis 1, we ran another ANOVA of the impact of hope on savings intentions. As predicted, participants in the hope condition ( $M_{\text{hope}} = 32.13\%$ ,  $SD = 23.95\%$ ) display greater willingness to save than those in the neutral condition ( $M_{\text{neutral}} = 26.64\%$ ,  $SD = 20.61$ ;  $F(1, 305) = 4.60$ ,  $p = .033$ , Cohen's  $d = .245$ ). The results of studies 2A and 2B thus combine to show that feeling hopeful can increase savings intentions. To establish the mechanism underlying this effect, we conduct study 3.

### **STUDY 3: THE MEDIATING ROLE OF FUTURE TIME PERSPECTIVE**

The purpose of study 3 is to examine what drives people to save when they feel hopeful. As a future time perspective can predict retirement savings (Jacobs-Lawson and Hershey 2005; Hershey and Mowen 2000), we predict that people who feel hopeful are more willing to save due to their greater focus on the future. Therefore, with this study, we examine the mediating role of future time perspective in the effect of induced hope on savings (H2).

#### **Participants and Procedure**

We paid 120 MTurk workers (43% women,  $M_{\text{age}} = 36.84$  years,  $SD = 10.92$  years) a small monetary fee to complete the study. After eliminating 3 careless responders and 5 outliers, we retained 112 total responses. These participants were randomly assigned to a hope or neutral scenario, similar to study 2A. Those in the hope condition read a short story about finding an ideal job (Winterich and Haws 2011), and participants in the control condition read about

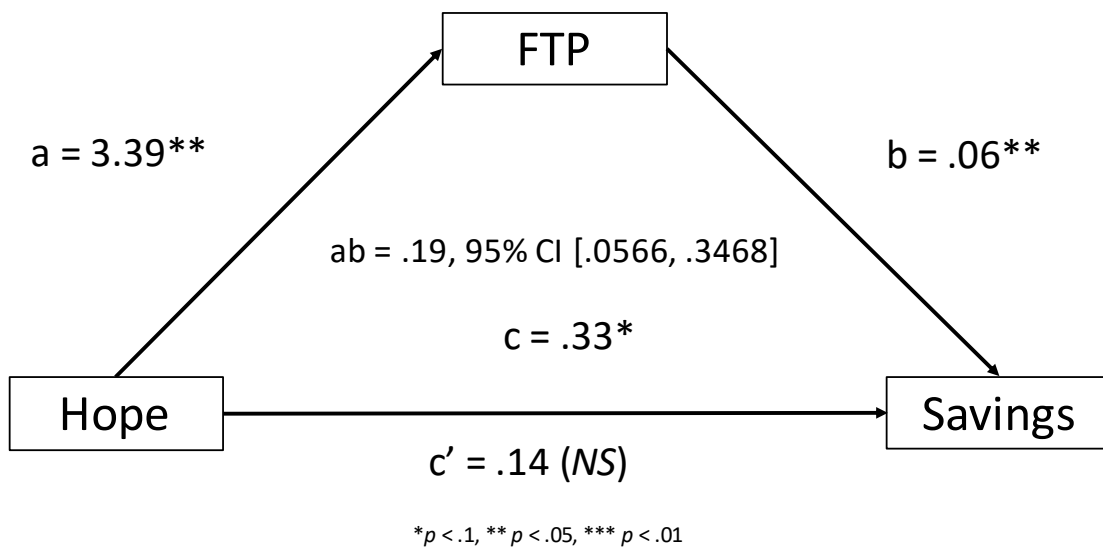
washing dishes (see the appendix). Before reading the scenarios, they completed demographic items; after reading them, participants completed a manipulation check item by indicating the extent to which they felt hopeful, on a scale from 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever” (Winterich and Haws 2011). Next, they encountered 6 savings items, each measured on 1–6 scales. Three items were those used in study 2A, assessing *how likely* they would be to save, and then three new items address *how much* they would save if they had additional income (“Imagine you receive an extra \$500 per month, please indicate how much of this money you would save,” from 1 = \$0 to 6 = \$500; “Your work just offered a new retirement savings plan where they will match your contributions up to \$50 a month. Please indicate how much money you would allocate to this plan,” from 1 = \$0 to 6 = \$50; and “Imagine you receive an extra \$1000 per month for the next year. Please indicate how much of this money you would save,” from 1 = \$0 to 6 = \$1000). The average of the six items represents the measure of savings intentions ( $\alpha = .82$ ). Finally, they completed the future time perspective scale from study 1 (Jacobs-Lawson and Hershey 2005).

## Results and Discussion

Hope levels were significantly greater in the hope condition ( $M_{\text{hope}} = 5.46$ ,  $SD = 1.14$ ) than in the neutral condition ( $M_{\text{neutral}} = 3.70$ ,  $SD = 1.79$ ;  $F(1, 110) = 38.85$ ,  $p < .01$ ), so the manipulation induced hope as intended. With regard to the effect of hope on future time perspective and savings intentions, we find that participants in the hope condition express a significantly greater focus on the future ( $M_{\text{hope}} = 28.32$ ,  $SD = 5.90$ ) than those in the neutral condition ( $M_{\text{neutral}} = 24.93$ ,  $SD = 5.93$ ;  $F(1, 110) = 9.21$ ,  $p = .003$ ), as well as a significantly greater intention to save ( $M_{\text{hope}} = 4.92$ ,  $SD = .83$ ;  $M_{\text{neutral}} = 4.59$ ,  $SD = .90$ ;  $F(1, 110) = 4.064$ ,  $p = .046$ , Cohen’s  $d = .381$ ). A linear regression shows that future time perspective significantly

predicts savings ( $F(1, 110) = 22.04, p < .01, b = .059, SE = .012, R^2 = .167$ ). With a mediation analysis, using Hayes's (2013) PROCESS macro, model 4, with 5,000 bootstrap samples, we test the mediating role of future time perspective on the effect of hope on savings (Figure 2) and find that future time perspective significantly mediates this relationship between hope and savings (indirect effect:  $b = .1878, SE = .0732, 95\% CI [.0566, .3468]$ ).

**FIGURE 2: Future Time Perspective Mediates the Effect of Hope on Savings**



Notes: FTP = future time perspective.

These results confirm our theorizing: People who feel hopeful save more due to their greater focus on the future. By eliciting *state* hope, not just relying on trait hope, it is possible to shift consumers' focus to the future, increasing their future time perspective and motivating them to save. In study 4, we investigate whether we can replicate these findings and provide further evidence that a future time perspective drives the observed effect, by comparing hope with pride as another positive emotion that has a primarily past focus.



## STUDY 4: PAST AND FUTURE PRIDE AND HOPE

To elucidate how future time perspective drives savings and rule out an alternative explanation that positive emotion in general is the critical factor, we examine pride. As noted, it is a positive emotion too, but it differs from hope by being naturally oriented toward the past (e.g., feeling proud of a previous accomplishment; Winterich and Haws 2011). If a future focus is what increases savings intentions, then pride should not be able to motivate savings. However, if we manipulate the time perspective related to both hope and pride, such as by priming *past* hope and *future* pride, we predict that savings behavior follows the time perspective of each emotion, rather than the emotion itself. Specifically, we anticipate increased savings only in the future-focused conditions (H3). With these findings, we can establish a boundary condition for hope, such that its effect on savings intentions disappears if hope is focused on the past.

### Participants and Procedure

Eight hundred six MTurk workers (61% men,  $M_{\text{age}} = 34.34$  years,  $SD = 11.57$  years) received a small monetary fee to participate. Twelve participants were identified as outliers, and 101 were careless respondents, so we retained 693 participants. Study 4 took place over four days and included five conditions: four conditions derived from a 2 (emotion: hope vs. pride)  $\times$  2 (time perspective: past vs. future) between-subject design and a fifth, control condition in which we did not induce any emotion or time perspective. After being randomly assigned to one of the five conditions, participants read the corresponding scenario, presented as a memory task. They then completed the manipulation checks, which we presented as tests of their ability to recall the scenarios (Winterich and Haws 2011). The savings questionnaire and demographic questions followed.

To induce emotions and time perspectives, we included scenarios used by Winterich and Haws (2011) that feature emotional stories. The topic (finding an ideal job) and approximate length of each scenario remained constant, but the emotion (pride vs. hope) and time perspective (past vs. present) varied. The future hope story described finding a perfect job posting and feeling hopeful about obtaining an ideal job in the future (similar to previous studies); the past hope story recalled feeling hopeful while looking for a job. Then the past pride story mentioned feeling proud about obtaining a perfect job after a lot of hard work, and the future pride story prompted participants to imagine feeling proud about getting the perfect job. The control condition story, about washing dishes, was approximately the same length as the other scenarios (see the appendix). For the manipulation check, participants had to recall the story they had just read and indicate how they were feeling in terms of pride and hope, on a scale of 1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever,” followed by a time perspective manipulation check item, on a scale from 1 = “past” to 7 = “future” (Winterich and Haws 2011). In addition, they completed the six savings items (1–6 scale) from study 3.

## **Results and Discussion**

We first compare the neutral condition, the combined hope conditions, and the combined pride conditions. Hope differs significantly between the emotion conditions ( $F(2, 690) = 51.35, p < .01$ ), such that we find higher scores in the hope conditions ( $M_{\text{hope}} = 5.64, SD = 1.18$ ) than the neutral condition ( $M_{\text{neutral}} = 4.27, SD = 1.95, p < .01$ ) but not in the pride conditions ( $M_{\text{pride}} = 5.59, SD = 1.28, p = .69$ ). Although hope is not significantly greater in the hope versus the pride conditions, participants assigned to the pride conditions express significantly more pride ( $M_{\text{pride}} = 5.47, SD = 1.61$ ) than those in the hope conditions ( $M_{\text{hope}} = 4.97, SD = 1.61, p < .01$ ) or neutral condition ( $M_{\text{neutral}} = 4.40, SD = 1.13, p < .01, F(2, 690) = 23.03, p < .01$ ). That is, the groups can

be clearly distinguished. A one-way ANOVA, with five levels, provides a direct comparison of the individual conditions and reveals no significant difference in hope between hope conditions ( $p = .29$ ), nor in pride between the two pride conditions ( $p = .48$ ).

We also confirm the success of the time perspective manipulation ( $F(2, 690) = 18.05, p < .01$ ), because the combined future focus conditions display a greater focus on the future ( $M_{\text{future}} = 4.61, SD = 1.63$ ) compared with the combined past conditions ( $M_{\text{past}} = 3.77, SD = 1.74, p < .01$ ) and neutral condition ( $M_{\text{neutral}} = 4.17, SD = 1.69, p = .003$ ). In a five-level ANOVA with the condition as the independent variable and time perspective as the dependent variable ( $F(4, 688) = 13.12, p < .01$ ), we find no significant difference in time perspectives across future-focused conditions ( $M_{\text{future hope}} = 4.55, SD = 1.71; M_{\text{future pride}} = 4.66, SD = 1.55, p = .58$ ). However, a significant difference in time perspective arises between the past-focused conditions ( $M_{\text{past hope}} = 3.35, SD = .178; M_{\text{past pride}} = 4.13, SD = 1.63, p < .01$ ).

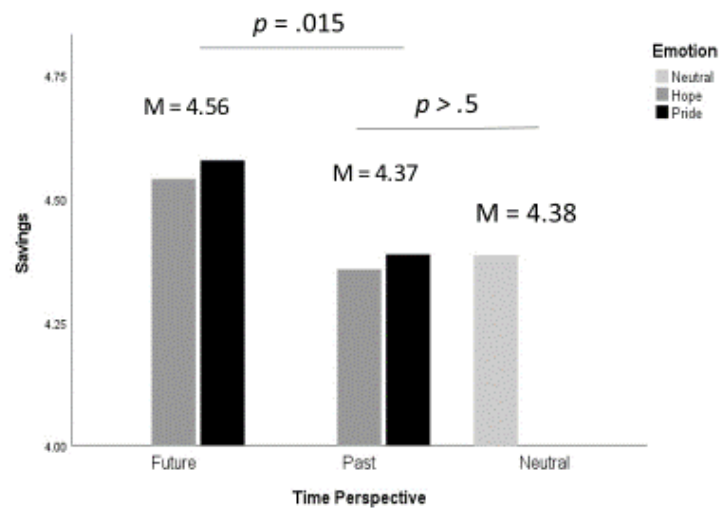
To analyze the effect of emotion and time perspective on savings behavior, we initially excluded the neutral condition. So, we include emotion (hope and pride), time perspective (future and past), and their interaction as independent variables and intended savings as the dependent variable. Because this study ran over the course of four days, we initially included day as a factor, but it did not significantly affect savings intentions nor significantly interact with emotion, time perspective, or their interaction, so we removed it.

As predicted (H3), we find a significant main effect of time perspective on savings ( $F(1, 547) = 4.79, p = .015$ , Cohen's  $d = 0.21$ ), such that the future-focused conditions produce significantly higher savings scores ( $M_{\text{future}} = 4.56, SD = .89$ ) than the past-focused conditions ( $M_{\text{past}} = 4.37, SD = .90$ ). The main effect of emotion is not significant ( $F(1, 547) = .195, p =$

.659, Cohen's  $d = 0.03$ ), nor is the interaction of emotion and time perspective ( $F(1, 547) = .003$ ,  $p = .959$ ,  $\eta_p^2 < .01$ ).

In the initial analysis, past pride and past hope do not differ, and neither do the future pride and future hope conditions. Therefore, we combine the two past conditions and the two future conditions, then compare each of them with the neutral condition to test if the effect of time orientation is driven by past or future conditions. We do not observe a significant difference between neutral and past conditions ( $M_{\text{neutral}} = 4.38$ ,  $SD = .95$ ;  $M_{\text{past}} = 4.37$ ,  $SD = .90$ ,  $p = .899$ , Cohen's  $d = -.013$ ) but find that participants in the future-focused conditions save marginally more ( $M_{\text{future}} = 4.56$ ,  $SD = .89$ ;  $p = .063$ , Cohen's  $d = .191$ ), as depicted in figure 3.

**FIGURE 3: Impact of Past and Future Hope and Pride on Saving**



These results support our hypothesis that hope, as an innately positive, future-focused emotion, increases willingness to save. They also provide confirmatory evidence that it is the future focus driving this effect. When the focus of hope shifts to the past, its effect on savings

disappears. We also can rule out the alternative explanation that positive emotion in general leads to savings. Rather, it must be a *future*-focused, positive emotion to motivate savings. Pride, as an innately past-focused emotion, does not lead to savings unless its focus gets shifted to the future, in which case its effect on willingness to save is similar to that of future-oriented hope. In summary, when the time perspective of a positive emotion is manipulated, savings behavior is predicted by the time perspective, not the specific positive emotion.

### **STUDY 5: FUTURE SELF-CONTINUITY**

Another alternative explanation for our findings might involve a sense of connectedness with a future self. The degree of connection with a future self can predict savings and decrease temporal discounting (Bartels and Rips 2010; Ellen et al. 2012; Ersner-Hershfield et al. 2009; Hershfield et al. 2011), so with study 5, we consider if the focus on the future linked to hope also increases future self-continuity, which may explain the effect on savings. That is, this study tests if connectedness with a future self mediates the effect of hope on savings.

#### **Participants and Procedure**

Eight hundred eighty-four MTurk workers (47% women,  $M_{\text{age}} = 37.03$  years,  $SD = 12.11$  years) earned a small monetary fee to complete the study, but 120 were careless respondents (e.g., agreeing “I live on Mars”), and 34 participants were identified as outliers, so this study relies on 727 total responses. The participants were randomly assigned to a hope (prospect of finding an ideal job) or neutral (washing dishes) scenario, similar to study 2A (Winterich and Haws 2011; see the appendix). The manipulation checks asked them to indicate the extent to which they felt hopeful (1 = “I do not feel this in the slightest bit” to 7 = “I feel this more strongly than ever”; Winterich and Haws 2011); their time perspective, using an item similar to

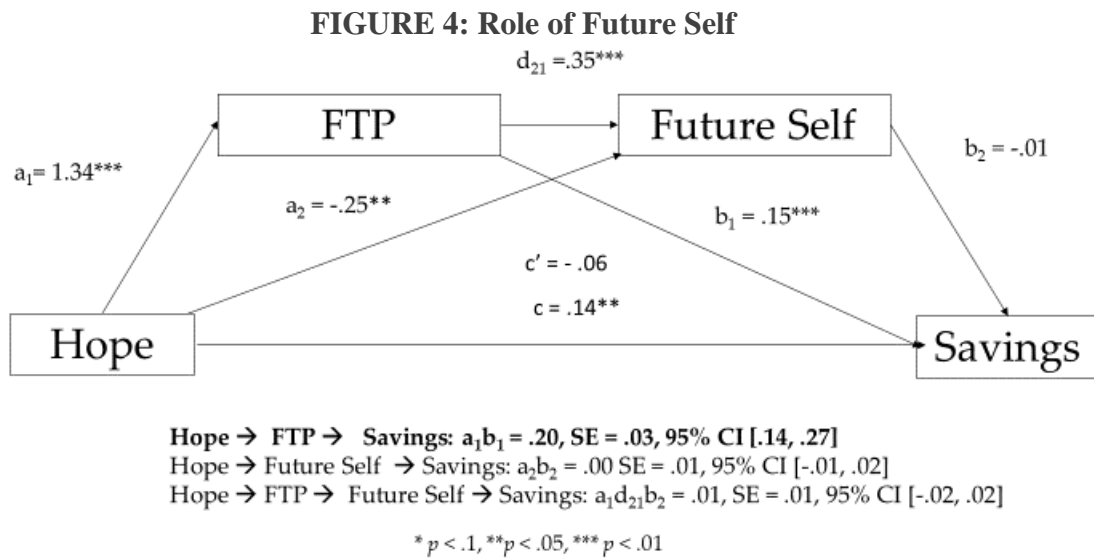
that used in study 4 (1 = “past” to 7 = “future”; Winterich and Haws 2011); and their future self-connectedness, with the new item, “Imagine yourself in 10 years. Please select how close you feel to your future self” (1–7 scale). To measure savings, we used the six savings items (1–6 scale) from studies 3 and 4.

## Results and Discussion

Hope levels were significantly greater in the hope condition ( $M_{\text{hope}} = 5.19$ ,  $SD = 1.22$ ) than the neutral condition ( $M_{\text{neutral}} = 4.35$ ,  $SD = 1.56$ ;  $F(1, 725) = 65.90$ ,  $p < .01$ ), so hope was induced as intended. Again, we confirm that participants in the hope condition exhibit a significantly greater focus on the future ( $M_{\text{future}} = 5.73$ ,  $SD = 1.28$ ;  $M_{\text{neutral}} = 4.38$ ,  $SD = 1.65$ ;  $F(1, 725) = 151.22$ ,  $p < .01$ ). In addition, the emotion condition marginally significantly affects a sense of connectedness with a future self ( $M_{\text{neutral}} = 4.58$ ,  $SD = 1.63$ ;  $M_{\text{hope}} = 4.81$ ,  $SD = 1.61$ ,  $F(1, 725) = 3.60$ ,  $p = .058$ ). Participants in the hope group indicate a higher mean savings score ( $M_{\text{hope}} = 4.61$ ,  $SD = .917$ ) than those in the neutral condition ( $M_{\text{neutral}} = 4.47$ ,  $SD = .913$ ;  $F(1, 725) = 4.231$ ,  $p = .04$ , Cohen’s  $d = .15$ ), replicating the effect of hope on savings.

Linear regressions show that a future time perspective significantly predicts both a sense of connectedness with the future self ( $F(1, 725) = 83.96$ ,  $p < .01$ ,  $b = .323$ ,  $SE = .035$ ,  $R^2 = .104$ ), and savings ( $F(1, 725) = 46.67$ ,  $p < .01$ ,  $b = .139$ ,  $SE = .02$ ,  $R^2 = .06$ ). Then sense of closeness with a future self marginally predicts savings ( $F(1, 725) = 3.311$ ,  $p = .069$ ,  $b = .04$ ,  $SE = .021$ ,  $R^2 = .005$ ). In a mediation analysis, using Hayes’s (2013) PROCESS macro, model 6 with 5,000 bootstrap samples, we test for a serial mediation in which hope leads to a focus on the future, which increases a sense of connectedness with the future self, which in turn increases savings. But as we show in figure 4, the indirect effect of hope on future time perspective on closeness

with a future self on savings is not significant ( $b = .01$ ,  $SE = .01$ , 95% CI  $[-.02, .02]$ ), nor is the indirect effect of hope on sense of closeness with a future self on savings ( $b = .00$ ,  $SE = .01$ , 95% CI  $[-.01, .02]$ ). In line with our theoretical predictions and previous findings, a future time perspective significantly mediates the effect of hope on savings ( $b = .20$ ,  $SE = .03$ , 95% CI  $[.14, .27]$ )



Thus, participants who feel hopeful save more due to a greater focus on the future, not a greater sense of connectedness with their future self. With our large sample, we ensure adequate power to detect the potential serial mediation, but the findings rule out the alternative theory that a sense of connectedness with a future self drives the effect of hope on savings.

## GENERAL DISCUSSION

Hope focuses on a potential, goal-congruent, future outcome (MacInnis and Chun 2006), and we have theorized that it thus increases people’s future time perspective, which in turn motivates them to act in ways that seem likely to manifest a positive future, such as saving money. In five studies, we test these predictions about the effect of hope on savings intentions.

Study 1 demonstrates that consumers who tend to be more hopeful also display an increased tendency to save. This putative effect is mediated by a future time perspective. Studies 2A and 2B show that eliciting hope increases willingness to save. Study 3 replicates this finding and also reveals that a future time perspective mediates the effect of hope on savings. In study 4, we rule out the alternative explanation that positive emotion in general explains the effect of hope on savings by comparing hope with another positive emotion, pride. But pride does not motivate savings intentions unless its time perspective is manipulated to focus on the future; in parallel, we show that the effect of hope disappears if hope is manipulated to focus on the past. These findings highlight the key role of time perspective in determining the effects of positive emotions on savings. Finally, in study 5 we examine future self-continuity as a potential alternative mediator but do not find support for this explanation.

### **Contributions and Implications**

Theoretically, we contribute to research on positive emotions, time perspectives, and financial decision making by identifying how hope, as a specific, positive emotion exerts downstream consequences on savings by increasing people's focus on the future. Pride does not lead to savings, unless its conventional temporal focus is shifted to the future. Similarly, when the focus of hope is shifted to the past, it no longer affects savings. Prior research identifies positive correlations between a future time perspective and savings behavior (Hershey and Mowen 2000; Jacobs-Lawson and Hershey 2005; Lusardi 1999); we establish a new intervention, through the induction of hope, that can increase future time perspectives and thus motivate savings.

In addition, our work contributes to literature on hope, both in the consumer behavior



realm specifically and more generally. That is, beyond its effect in diminishing negative behavior, such as unhealthy food intake (Winterich and Haws 2011), we show that hope instigates positive behavior. The evidence we provide pertains to savings behaviors, which differ notably from food consumption in terms of discounting behavior (Cairns 1992; Chapman and Elstein 1995). More broadly, we inform research on hope that predicts a risk of motivational reasoning biases (MacInnis and De Mello 2005) or enhanced advertising persuasiveness (Poels and Dewitte 2008). These findings suggests that hope increases naive optimism, and hopeful people discount their future needs and realities. But these previous studies also manipulate hope by presenting, for example, an advertisement for a vitamin that may help students concentrate for upcoming exams (Poels and Dewitte 2008). Such manipulations focus on a near-future outcome, so they might not elicit a stronger future time perspective to the same degree that our hope scenarios have. If an advertisement were to elicit a focus of hope on old age, participants might be able to process the advertisement with future goals in mind, rather than risk being falsely persuaded. Accordingly, further research is needed to examine if there is a threshold for the future time perspective of hope that is needed to increase savings (e.g., hoping for a positive outcome 5–10 years away versus next week).

In turn, our work has practical implications for savings interventions and policy. Given the current savings crisis (Benartzi and Thaler 2013), in which 40% of the populace are unable to afford a \$400 unexpected expense (Federal Reserve 2019), we need a clearer understanding of what motivates consumers to save. The most common method for saving among working individuals is an employer-sponsored retirement plan (e.g., 401k, 403b), yet only 38% take advantage of such plans (Helman, Copeland, and VanDerhei 2012). Because these programs benefit employees in multiple ways, we hope our findings might inspire managers and marketers

to develop new interventions to encourage workers to take part, spurring a new and sustained wave of saving. Hope can be elicited relatively easily, such as by asking customers to imagine a great retirement, so it can support practical, simple tactics to inspire people to take action to save. Financial advisors whose clients seek to eliminate debt and plan for retirement could utilize hope as a motivation for positive financial decisions. In addition, nonprofit organizations that serve low income populations could use our findings to empower their clients and nudge them to save by augmenting their current interventions with hope tactics.

### **Areas for Further Research**

Further research is needed to confirm if an increased willingness to save, as elicited by state hope, translates into actual, sustained saving behaviors. Considering evidence that hope improves problem-solving skills (Chang 1998) and cognitive processing (Cavanaugh et al. 2011), which underlie better decision making, we anticipate that consumers with a greater sense of hope are better equipped to save and successfully plan for their future. But continued research is needed to examine actual savings behavior and measure it over time, to determine if repeated hope messages might be necessary to ensure sustained savings.

Another area that would benefit from additional empirical research pertains to the role of hope in conditions of scarcity. People experiencing scarcity may experience less hope than those in an environment of abundance; they also develop a shorter time horizon, because their attention is taken up with present struggles, often at the expense of future plans (Shah, Mullainathan, and Shafir 2012). Therefore, the impact of generating hope could be even more resonant for people in scarce situations, by increasing their future time perspectives to an even greater degree than would be the case among consumers who have plenty of resources and already are actively

planning for their future needs. We leave it to future research to probe how, when, and why hope leads to savings in different contexts. Such important questions can guide our further understanding of the implications of hope as a motivator to save.

## CHAPTER 4: CONCLUSION

In summary, these two papers offer two differing views of hope, one positive and one negative. The first paper demonstrates that in a gambling context, hope can lead to suboptimal decisions. Results from six studies, including one with consequential decisions, confirm that hope triggers experiential processing, which in turn increases gambling, interestingly without impacting rational expectations of winning. We document two boundary conditions: For those who tend not to utilize experiential processing and when individuals are prompted to not rely on their feelings, the impact of hope on gambling is attenuated.

The second paper shows that hope motivates savings. Across five studies, findings show that hope increases willingness to save, mediated by a future time perspective. We examine the alternative explanations that it is a sense of closeness with one's future self that is mediating the impact of hope on savings or that there may be serial mediation – that is if hope might lead to a future time perspective, in turn increasing sense of closeness with one's future self, leading to savings, but we do not find either of these to be the case. We outline a boundary condition: If the focus of hope is no longer focused on the future but instead orients toward the past, the positive effect on savings disappears. We also examine pride, a positive emotion generally focused on the past and find that it does not induce savings unless the focus is shifted to the future. We hence rule out positive emotion in general as a driving effect; rather it must be a future focused positive emotion.

In reconciling these two papers together, it may seem contradictory that hope can lead to both savings and gambling. However, we speculate it is the focus of hope that's critical. Research notes that a short time horizon is associated with experiential processing, as it operates

in a manner that is immediate and concrete, whereas a future time perspective is associated with the rational system, as it operates through abstraction and is good for understanding long term consequences (Epstein and Pacini 2001). In the first paper, the focus of hope on winning is a much shorter time perspective as compared to the foci of hope in the second paper, and so likely leads to a more concrete construal and therefore experiential processing. However, in the second paper, the foci of hope of getting a dream job or hoping that a pacemaker will work for a long time, entail a much greater time perspective and likely are triggering an abstract construal and rational processing, leading to savings. Hence, future research examining the impact of the focus of hope on experiential versus rational processing and level of construal, as well as how this translates into downstream effects on consumer decisions, will be an interesting and important area to explore.

Theoretically, hope and optimism have been differentiated in the literature: Whereas optimism is an expectation that a good outcome will occur, hope is a yearning for a goal congruent outcome, at the same time maintaining a realistic expectation of how likely it is for that outcome to occur (MacInnis and Chun 2006). Accordingly, in the second paper, we found that hope did not impact expectations of winning. However, to the best of our knowledge, there has not been empirical research to specifically differentiate state hope versus optimism. As such we ran a study to compare the impact of state hope versus optimism on gambling decisions (see appendix). We found it difficult to cleanly manipulate hope versus optimism, as there was not a significant difference in levels of hope between the hope and optimism groups, although participants did feel more optimistic in the optimism group compared to neutral or hope conditions. Both hope and optimism groups displayed greater betting intentions compared to the neutral group and there was not a significant difference in betting between the hope and

optimism groups. We speculate that this could be due to the fact that it was hard to cleanly manipulate hope versus optimism, so it could be that hope in the optimism group is driving the motivation to gamble rather than optimism, or that these two constructs are more overlapping than previously theorized. We predict that if we were able to cleanly manipulate hope versus optimism, that optimism may still lead to gambling but for a different reason: that optimism motivates gambling through expectations of winning, while hope motivates gambling through experiential processing. Hence, future research is needed to delineate these two constructs empirically and provide guidance on their downstream consequences.

Overall, this dissertation offers two contrasting findings of hope which have relevant implications for research on positive emotion, information processing and financial decision making. In addition, they have important practical applications. As hope is still a relatively new topic in the consumer behavior realm, this work aims to offer insight into the powerful effects of hope on decision making, and we hope that this work will inspire future research into the relatively unexplored realm of hope.

## REFERENCES

- Adams, Gary A. and Barbara L. Rau (2011), "Putting off Tomorrow to Do What You Want Today: Planning for Retirement," *American Psychologist*, 66 (3), 180–92.
- Arkes, Hal R., Cynthia A. Joyner, Mark V. Pezzo Mark, Jane Nash Gradwohl, Karen Siegel-Jacobs Karen, and Eric Stone (1994), "The Psychology of Windfall Gains," *Organizational Behavior and Human Decision Processes*, 59 (3), 331–47.
- Armstrong, Tess, Matthew Rockloff, and Matthew Browne (2020), "Gamble with Your Head and Not Your Heart: A Conceptual Model for How Thinking-Style Promotes Irrational Gambling Beliefs," *Journal of Gambling Studies*, 36 (1), 183–206.
- Bandura, Albert (2001), "Social Cognitive Theory: An Agentic Perspective," *Annual Review of Psychology*, 52 (1), 1-26.
- Bartels, Daniel M. and Lance J. Rips (2010), "Psychological Connectedness and Intertemporal Choice," *Journal of Experimental Psychology: General*, 139 (1), 49-69.
- Benartzi, Shlomo and Richard H. Thaler, (2013), "Behavioral Economics and the Retirement Savings Crisis," *Science*, 339 (6124), 1152-1153.
- Berns, Gregory S., David Laibson, and George Loewenstein (2007), "Intertemporal Choice—Toward an Integrative Framework," *TRENDS in Cognitive Sciences*, 11 (11), 482-8.
- Bertrand, Marianne, Sendhil Mullainathan, and Eldar Shafir (2006), "Behavioral Economics and

- Marketing in Aid of Decision Making Among the Poor," *Journal of Public Policy & Marketing*, 25 (1), 8-23.
- Brinner, Roger E. and Charles T. Clotfelter (1975), "An Economic Appraisal of State Lotteries," *National Tax Journal*, 28 (4), 395–404.
- Cairns, John A. (1992), "Health, Wealth and Time Preference," *Project Appraisal*, 7 (1), 31-40.
- Cavanaugh, Lisa A., Keisha M. Cutright, Mary F. Luce, and James R. Bettman (2011), "Hope, Pride, and Processing during Optimal and Nonoptimal Times of Day," *Emotion*, 11 (1), 38–46.
- Chang, Edward C. (1998), "Hope, Problem-Solving Ability, and Coping in a College Student Population: Some Implications for Theory and Practice," *Journal of Clinical Psychology*, 54 (7), 953–962.
- Chapman, Gretchen B. and Arthur S. Elstein (1995), "Valuing the Future: Temporal Discounting of Health and Money," *Medical Decision Making*, 15 (4), 373-386.
- Cosenza, M., M. Ciccarelli, and G. Nigro (2019), "Decision-Making Styles, Negative Affectivity, and Cognitive Distortions in Adolescent Gambling," *Journal of Gambling Studies*, 35 (2), 517–531.
- Cottle, Thomas J. (1976), *Perceiving Time: A Psychological Investigation With Men and Women*. New York: John Wiley & Sons.
- Das, Tushar K. (1987), "Strategic Planning and Individual Temporal Orientation," *Strategic Management Journal*, 8 (2), 203-209.



Daugherty, James R. and Gary L. Brase (2010), "Taking Time to Be Healthy: Predicting Health Behaviors with Delay Discounting and Time Perspective," *Personality and Individual Differences*, 48 (2), 202-207.

DeCaria, Concetta M., Eric Hollander, Robert Grossman, and Cheryl M. Wong. "Diagnosis, neurobiology, and treatment of pathological gambling." *The Journal of clinical psychiatry* (1996).

Denes-Raj, Veronika and Seymour Epstein. (1994), "Conflict Between Intuitive and Rational Processing: When People Behave Against their Better Judgment," *Journal of Personality and Social Psychology*, 66, (5), 819–29.

Denes-Raj, Veronika, Seymour Epstein, and Jonathan Cole (1995), "The Generality of the Ratio-Bias Phenomenon," *Personality and Social Psychology Bulletin*, 21 (10), 1083–92.

Ellen, Pam S., Joshua L. Wiener, and M Paula Fitzgerald (2012), "Encouraging People to Save for Their Future: Augmenting Current Efforts with Positive Visions of the Future," *Journal of Public Policy & Marketing*, 31 (1), 58-72.

Emond, Melissa S. and Harvey HC Marmurek (2010), "Gambling Related Cognitions Mediate the Association between Thinking Style and Problem Gambling Severity," *Journal of Gambling Studies*, 26 (2), 257–67.

Epstein, Seymour., R. Pacini, V. Denes-Raj, and H. Heier (1996), "Individual Differences in Intuitive–Experiential and Analytical–Rational Thinking Styles," *Journal of Personality and Social Psychology*, 71 (2), 390–405.

Epstein, Seymour and Rosemary Pacini (2001), "The Influence of Visualization on Intuitive and Analytical Information Processing," *Imagination, Cognition and Personality*, 20 (3),

195–216.

Ersner-Hershfield, Hal, G. Elliott Wimmer, and Brian Knutson (2009), "Saving for the Future Self: Neural Measures of Future Self-Continuity Predict Temporal Discounting," *Social Cognitive and Affective Neuroscience*, 4 (1), 85-92.

Fazal-E-Hasan, S. M., H. Ahmadi, G. Mortimer, I. Lings, L. Kelly, and H. Kim (2020), "Online Repurchasing: The Role of Information Disclosure, Hope, and Goal Attainment," *Journal of Consumer Affairs*, 54 (1), 198–226.

Federal Reserve (2019), *Report on the Economic Well-Being of US Households in 2018, May 2019*. Washington, DC: Board of Governors of the Federal Reserve System.

Feldman, D.B. and M. Kubota (2015), "Hope, Self-Efficacy, Optimism, and Academic Achievement: Distinguishing Constructs and Levels of Specificity in Predicting College Grade-Point Average," *Learning and Individual Differences*, 37, 210–216.

Fried, Yitzhak, and Linda H. Slowik (2004), "Enriching Goal-Setting Theory with Time: An Integrated Approach," *Academy of Management Review*, 29 (3), 404-422.

Garbinsky, Emily N., Anne-Kathrin Klesse, and Jennifer Aaker (2014), "Money in the Bank: Feeling Powerful Increases Saving," *Journal of Consumer Research*, 41 (3), 610-623.

Garbinsky, Emily N., Nicole L. Mead, and Daniel Gregg (2021), "Popping the Positive Illusion of Financial Responsibility Can Increase Personal Savings: Applications in Emerging and Western Markets." *Journal of Marketing* 85 (3), 97-112.

- Gervy, Ben, Eric R. Igou, and Yaacov Trope (2005), "Positive Mood and Future-Oriented Self-Evaluation," *Motivation and Emotion*, 29 (4), 267-94.
- Godek, John, and Kyle B. Murray (2008), "Willingness to pay for advice: The Role of Rational and Experiential Processing," *Organizational Behavior and Human Decision Processes*, 106 (1), 77-87.
- Griskevicius, Vladas, Joshua M. Ackerman, Stephanie M. Cantú, Andrew W. Delton, Theresa E. Robertson, Jeffry A. Simpson, Melissa E. Thompson, and Joshua M. Tybur (2013), "When the Economy Falters, Do People Spend or Save? Responses to Resource Scarcity Depend on Childhood Environments," *Psychological Science*, 24 (2), 197-205.
- Hall, Peter A., and Geoffrey T. Fong (2007), "Temporal Self-Regulation Theory: A Model for Individual Health Behavior," *Health Psychology Review*, 1 (1), 6-52.
- Hansen, A., A. D. Miyazaki, and D. E. Sprott (2000), "The Tax Incidence of Lotteries: Evidence from Five States," *The Journal of Consumer Affairs*, 34, 182–203.
- Hayes, Andrew F. (2018), *Introduction to Mediation, Moderation, and Conditional Process Analysis Second Edition: A Regression-Based Approach*. New York: The Guilford Press.
- Helman, Ruth, Craig Copeland, and Jack VanDerhei (2012), "The 2012 Retirement Confidence Survey: Job Insecurity, Debt Weigh on Retirement Confidence, Savings," EBRI Issue Brief, No. 369 (March).
- Hershey, Douglas A. and John C. Mowen (2000), "Psychological Determinants of Financial Preparedness for Retirement," *The Gerontologist*, 40 (6), 687-697.

- Hershfield, Hal E., Daniel G. Goldstein, William F. Sharpe, Jesse Fox, Leo Yeykelis, Laura L. Carstensen, and Jeremy N. Bailenson (2011), "Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self," *Journal of Marketing Research*, 48 (SPL), S23-S37.
- Hershfield, Hal E., Taya R. Cohen, and Leigh Thompson (2012), "Short Horizons and Tempting Situations: Lack of Continuity to Our Future Selves Leads to Unethical Decision Making and Behavior," *Organizational Behavior and Human Decision Processes*, 117 (2), 298-310.
- Isen, Alice M., Kimberly A. Daubman, and Gary P. Nowicki (1987), "Positive Affect Facilitates Creative Problem Solving," *Journal of Personality and Social Psychology*, 52 (6), 1122.
- Jacobs-Lawson, Joy M., and Douglas A. Hershey (2005), "Influence of Future Time Perspective, Financial Knowledge, and Financial Risk Tolerance on Retirement Saving Behaviors," *Financial Services Review-Greenwich*, 14 (4), 331.
- Jones, Colleen. "September is Suicide Prevention Month: Problem gambling has highest suicide rates among all addictions." September 16, 2020. Western Problem Resources Center. <https://www.thebatavian.com/press-release/september-is-suicide-prevention-month-problem-gambling-has-highest-suicide-rates-among>, last accessed 5/1/2021.
- Kirkpatrick, Lee A. and Seymour Epstein. "Cognitive-Experiential Self-Theory and Subjective Probability: Further Evidence for Two Conceptual Systems," *Journal Of Personality And Social Psychology*, 63, (4), 534-44.
- Kotlikoff, Laurence J. (1998), "Simulating the Privatization of Social Security in General

- Equilibrium," in *Privatizing Social Security*. Chicago: University of Chicago Press, 265-311.
- Lieberman, J. D., D. A. Krauss, M. Kyger, and M. Lehoux (2007), "Determining Dangerousness in Sexually Violent Predator Evaluations: Cognitive–Experiential Self-Theory and Juror Judgments of Expert Testimony," *Behavioral Sciences and the Law*, 25 (4), 507–526.
- Lusardi, Annamaria (1999), "Information, Expectations, and Savings for Retirement," in *Behavioral Dimensions of Retirement Economics*. Washington, DC: Brookings Institute, 81-115.
- MacInnis, Deborah J. and Gustavo E. De Mello (2005), "The Concept of Hope and its Relevance to Product Evaluation and Choice," *Journal of Marketing*, 69 (1), 1–14.
- MacInnis, Deborah J. and Hae Eun Chun (2007), "Understanding Hope and its Implications for Consumer Behavior: I Hope, Therefore I Consume," *Foundations and Trends in Marketing*, 1 (2), 97-189.
- Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao (2013), "Poverty Impedes Cognitive Function," *Science*, 341 (6149), 976-80.
- Martin-Krumm, Charles, Yann Delas, Marc-André L., Fabien Fenouillet, and Shane J. Lopez (2014), "The Structure of the State Hope Scale," *Journal of Positive Psychology*, 10 (3), 272-81.
- Morrissey, Monique (2016), "The State of American Retirement," (March 3), <https://www.epi.org/publication/retirement-in-america/>.

- Mowen, J. C., X. Fang, and K. Scott (2009), "A Hierarchical Model Approach for Identifying the Trait Antecedents of General Gambling Propensity and of Four Gambling-Related Genres," *Journal of Business Research*, 62 (12), 1262–68.
- Nenkov, Gergana Y., J. Jeffrey Inman, and John Hulland (2008), "Considering the Future: The Conceptualization and Measurement of Elaboration on Potential Outcomes," *Journal of Consumer Research*, 35 (1), 126-41.
- Novak Thomas P., Donna L. Hoffman (2009), "The Fit of Thinking Style and Situation: New Measures of Situation-Specific Experiential and Rational Cognition," *Journal of Consumer Research*, Volume 36 (1), 56–72.
- Nuttin, Joseph (2014), *Future Time Perspective and Motivation: Theory and Research Method*. New York: Psychology Press.
- Pacini, R. and S. Epstein (1999), "The Relation of Rational and Experiential Information Processing Styles to Personality, Basic Beliefs, and The Ratio-Bias Phenomenon," *Journal of Personality and Social Psychology*, 76 (6), 972–87.
- Pacini, R., F. Muir, and S. Epstein (1998), "Depressive Realism from the Perspective of Cognitive-Experiential Self-Theory," *Journal of Personality and Social Psychology*, 74, 1056–68.
- Parfit, Derek (1971) "Personal Identity," *The Philosophical Review*, 80 (1), 3-27.
- Park, Eun-Joo and Eun-Young Kim (2008), "Effects of Consumer Tendencies and Positive

- Emotion on Impulse Buying Behavior for Apparel,” *Journal of the Korean Society of Clothing and Textiles*, 32(6), 980-90.
- Poels, Karolien and Siegfried Dewitte (2008), “Hope and Self-Regulatory Goals Applied to an Advertising Context,” *Journal of Business Research*, 61 (10), 1030–40.
- Potenza, Marc N., David A. Fiellin, George R. Heninger, Bruce J. Rounsaville, and Carolyn M. Mazure. "Gambling." *Journal of General Internal Medicine* 17, no. 9 (2002): 721-732.
- Pyone, Jin Seok, and Alice M. Isen (2011), "Positive Affect, Intertemporal Choice, and Levels of Thinking: Increasing Consumers' Willingness to Wait," *Journal of Marketing Research*, 48 (3), 532-543.
- Rocklage, Matthew D. and Russell H. Fazio (2020), “The Enhancing Versus Backfiring Effects of Positive Emotion in Consumer Reviews,” *Journal of Marketing Research*, 57(2), 332-52.
- Sanna, Lawrence J., Shevaun L. Stocker, and Jennifer A. Clarke (2003), "Rumination, Imagination, and Personality: Specters of the Past and Future in the Present," in *Virtue, Vice, and Personality: The Complexity of Behavior*, Edward C. Chang and Lawrence J. Sanna, eds. New York: American Psychological Association, 105-24.  
<https://doi.org/10.1037/10614-007>
- Scheier, Michael F., Charles S. Carver, and Michael W. Bridges. "Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): a reevaluation of the Life Orientation Test." *Journal of personality and social psychology* 67, no. 6 (1994): 1063.
- Scott, Susanne G. and Reginald A. Bruce (1995), “Decision-Making Style: The Development

- and Assessment of a New Measure,” *Educational and Psychological Measurement*, 55, (5), 818–31.
- Shah, Anuj K., Sendhil Mullainathan, and Eldar Shafir (2012), "Some Consequences of Having Too Little," *Science* 338 (6107), 682-85.
- Shiloh, S., Salton, E. and D. Sharabi (2002), “Individual Differences in Rational and Intuitive Thinking Styles as Predictors of Heuristic Responses and Framing Effects,” *Personality and Individual Differences*, 32 (3), 415–429.
- Shipp, Abbie J., Jeffrey R. Edwards, and Lisa Schurer Lambert (2009), "Conceptualization and Measurement of Temporal Focus: The Subjective Experience of the Past, Present, and Future," *Organizational Behavior and Human Decision Processes*, 110 (1), 1-22.
- Snyder, C. Rick, Cheri Harris, John R. Anderson, Sharon A. Holleran, Lori M. Irving, Sandra T. Sigmon, Lauren Yoshinobu, June Gibb, Charyle Langelles, and Pat Harney (1991), “The Will and the Ways: Development and Validation of an Individual-Differences Measure of Hope,” *Journal of Personality and Social Psychology*, 60, 570–85.
- Snyder, C. Rick, Susie C. Symptom, Florence C. Ybasco, Tyrone F. Borders, Michael A. Babyak, and Raymond L. Higgins (1996), "Development and Validation of the State Hope Scale," *Journal of Personality and Social Psychology*, 70 (2), 321-35.
- Snyder, Charles Richard. *The psychology of hope: You can get there from here*. Simon and Schuster, 1994.
- Spencer, S. J., M. P. Zanna, and G. T. Fong (2005), “Establishing a causal Chain: Why



- Experiments are often More Effective than Mediational Analyses in Examining Psychological Processes," *Journal of Personality and Social Psychology*, 89 (6), 845–51.
- Stawski, Robert S., Douglas A. Hershey, and Joy M. Jacobs-Lawson (2007), "Goal Clarity and Financial Planning Activities as Determinants of Retirement Savings Contributions," *International Journal of Aging and Human Development*, 64 (1), 13-32.
- “Statistics of Gambling Addiction 2016,” North American Foundation for Gambling Addiction Help, last accessed 5/1/2021, <https://nafgah.org/statistics-gambling-addiction-2016>.
- Stotland, Ezra (1969), *The Psychology of Hope*. New York: Jossey-Bass.
- Thaler, Richard H (1994), "Psychology and Savings Policies," *American Economic Review*, 84 (2), 186-92.
- Tversky, Amos and Daniel Kahneman (1974), "Judgment Under Uncertainty: Heuristics and Biases," *Science* 185, (4157), 1124-31.
- Wilcox, Keith, Thomas Kramer, and Sankar Sen (2011), "Indulgence or Self-Control: A Dual Process Model of the Effect of Incidental Pride on Indulgent Choice," *Journal of Consumer Research*, 38 (1), 151-63.
- Winterich, Karen Page and Kelly L. Haws (2011), “Helpful Hopefulness: The Effect of Future Positive Emotions on Consumption,” *Journal of Consumer Research*, 38 (3), 505-24.
- Zimbardo, Philip G., Kelli A. Keough, and John N. Boyd (1997), "Present Time Perspective as a Predictor of Risky Driving," *Personality and Individual Differences*, 23 (6), 1007-23.
- Zosh, Melinda, “Gambling problems: ‘highest rate of suicide’ compared to other addictions,”

March 5, 2020, <https://wvva.com/2020/03/05/gambling-problems-highest-rate-of-suicide-compared-to-other-addictions/>, last accessed 5/1/2021.

## APPENDIX A: STUMULI USED AND ADDITIONAL STUDY IN CHAPTER 2

### Study 1: The Trait Hope Scale

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

- 1. = Definitely False
- 2. = Mostly False
- 3. = Somewhat False
- 4. = Slightly False
- 5. = Slightly True
- 6. = Somewhat True
- 7. = Mostly True
- 8. = Definitely True

- \_\_\_ 1. I can think of many ways to get out of a jam.
- \_\_\_ 2. I energetically pursue my goals.
- \_\_\_ 3. I feel tired most of the time.
- \_\_\_ 4. There are lots of ways around any problem.
- \_\_\_ 5. I am easily downed in an argument.
- \_\_\_ 6. I can think of many ways to get the things in life that are important to me.
- \_\_\_ 7. I worry about my health.
- \_\_\_ 8. Even when others get discouraged, I know I can find a way to solve the problem.
- \_\_\_ 9. My past experiences have prepared me well for my future.
- \_\_\_ 10. I've been pretty successful in life.
- \_\_\_ 11. I usually find myself worrying about something.
- \_\_\_ 12. I meet the goals that I set for myself.

Note. The agency subscale score is derived by summing items 2, 9, 10, and 12; the pathway subscale score is derived by adding items 1, 4, 6, and 8. The total Hope Scale score is derived by summing the four agency and the four pathway items.

Snyder, Charles R., Cheri Harris, John R. Anderson, Sharon A. Holleran, Lori M. Irving, Sandra T. Sigmon, Lauren Yoshinobu, June Gibb, Charyle Langelles, and Pat Harney (1991), "The Will and the Ways: Development and Validation of an Individual-Differences Measure of Hope," *Journal of Personality and Social Psychology*, 60, (4), 570–85.

### LOT-R Optimism Scale

Directions: Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

- A = I agree a lot
  - B = I agree a little
  - C = I neither agree nor disagree
  - D = I disagree a little
  - E = I disagree a lot
- 1. In uncertain times, I usually expect the best.
  - 2. It's easy for me to relax.
  - 3. If something can go wrong for me, it will. (R)
  - 4. I'm always optimistic about my future.

5. I enjoy my friends a lot.
6. It's important for me to keep busy.
7. I hardly ever expect things to go my way. (R)
8. I don't get upset too easily.
9. I rarely count on good things happening to me. (R)
10. Overall, I expect more good things to happen to me than bad.

Scoring:

Items 3, 7, and 9 are reverse scored (or scored separately as a pessimism measure). Items 2, 5, 6, and 8 are fillers and should not be scored.

Scheier, M. F., C. S. Carver, and M. W. Bridges (1994), "Distinguishing Optimism from Neuroticism (and Trait Anxiety, Self-Mastery, and Self-Esteem): A Re-Evaluation of the Life Orientation Test," *Journal of Personality and Social Psychology*, 67, 1063–1078.

Lottery Items

How many lottery tickets do you typically buy per month? (fill in)

Imagine you are getting gas and see an advertisement for Powerball Lottery, with flashing lights with a current estimated jackpot of 91 million dollars. How likely are you to buy a ticket? (Scale 1 = Extremely unlikely to 7 = Extremely Likely).

## Study 2

Hope Scenario: Imagine you are watching your favorite soccer teams play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. You really hope the next half of the game will go your way and you will win. You can just imagine the feeling of excitement as you are handed the money. You have been yearning to win and hope this game will be the one. Either way, you have hope that the game will turn around for you and that you will walk away with some money. You spend the time remaining until the second half of the game starts relishing in imagining yourself winning. You can see yourself beaming with excitement as you walk away with your prize.

Neutral Scenario: Imagine you are watching your favorite soccer teams play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. As you wait for the next half to start, you talk to your friend sitting next to you about the weather. It is supposed to be 70 degrees tomorrow with a chance of rain. It has been raining on and off all week. They tell you that they heard the rain might continue for the next week. You tell them you usually get the weather news from your phone. They tell you they usually watch the weather channel in the mornings on their TV and sometimes listen to the weather forecast on the radio. You recommend a weather podcast to them.

How likely are you to put the rest of your money on the second half of the game?  
(Scale 1 = extremely unlikely to 7 = extremely likely)

Please indicate how hopeful you are feeling that you will win money.

(Scale 1 = extremely unlikely to 7 = extremely likely)

## Study 3

Hope Scenario: Imagine you are playing the card game Blackjack. You are sitting around a table with others playing the game. You are gambling and have lost money so far. You really hope

your next hand is going to be a 21 (the highest possible earnings) and you will win. You can just imagine the feeling of excitement as you are handed the money prize. You have been yearning to get a 21 and hope this round will be the ONE. Either way, you have hope that the game will turn around for you and that you will walk away with some money. You are filled with hope, imagining the future opportunities that this money might lead for you. You spend the time remaining until the next hand of cards are dealt relishing in imagining yourself winning. You can see yourself beaming with excitement as you walk away with your prize.

Neutral Scenario: Imagine you are playing the card game Blackjack. You are sitting around a table with others playing the game. You are gambling and have lost money so far. The last round has just finished. As you wait for the next hand to be dealt, you talk to the person sitting next to you about the weather. It is supposed to be 70 degrees tomorrow with a chance of rain. It has been raining on and off all week. They tell you that they heard the rain might continue on and off for the next week. You tell them you usually get the weather news from your phone. They tell you they usually watch the weather channel in the mornings on their TV and sometimes listen to the weather forecast on the radio. You recommend a weather podcast to them.

How likely are you to put the rest of your money on this next round?

(Scale 1 = extremely unlikely to 7 = extremely likely)

Please indicate how hopeful you are feeling that you will win money.

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How strongly do you feel you will win?

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How strong is your hunch that you will win?

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How likely is it that you will win money?

(Scale 1 = extremely unlikely to 7 = extremely likely)

#### **Study 4**

REI-40 scale

Instructions: Using the following scale, please rate the extent that these items refer to you.

(Scale 1 = definitely not true of myself to 5 = definitely true of myself)

I have a logical mind.

I have no problem thinking things through carefully.

I usually have clear, explainable reasons for my decisions.

I enjoy intellectual challenges.

I enjoy solving problems that require hard thinking.

I prefer complex problems to simple problems.

I believe in trusting my hunches.

I trust my initial feelings about people.

I hardly ever go wrong when I listen to my deepest gut feelings.

I like to rely on my intuitive impressions.

I often go by my instincts when deciding on a course of action.

I tend to use my heart as a guide for my actions.

Pacini, R. and S. Epstein (1999), "The Relation of Rational and Experiential Information Processing Styles to Personality, Basic Beliefs, and the Ratio-Bias Phenomenon," *Journal of*

*Personality and Social Psychology*, 76 (6), 972–987

**Hope Scenario:** Imagine you are watching your favorite soccer teams play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. You really hope the next half of the game will go your way and you will win. You can just imagine the feeling of excitement as you are handed the money. You have been yearning to win and hope this game will be the ONE. Either way, you have hope that the game will turn around for you and that you will walk away with some money. You spend the time remaining until the second half of the game starts relishing in imagining yourself winning. You can see yourself beaming with excitement as you walk away with your prize.

**Neutral Scenario:** Imagine you are watching your favorite soccer teams play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. As you wait for the next half to start, you talk to your friend sitting next to you about the weather. It is supposed to be 70 degrees tomorrow with a chance of rain. It has been raining on and off all week. They tell you that they heard the rain might continue for the next week. You tell them you usually get the weather news from your phone. They tell you they usually watch the weather channel in the mornings on their TV and sometimes listen to the weather forecast on the radio. You recommend a weather podcast to them.

How likely are you to put the rest of your money on this next round?

(Scale 1 = extremely unlikely to 7 = extremely likely)

Please indicate how hopeful you are feeling that you will win money.

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How strongly do you feel you will win?

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How strong is your hunch that you will win?

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

### **Study 5:**

**Hope Scenario:** Imagine you are watching your favorite soccer teams play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. You really hope the next half of the game will go your way and you will win. You can just imagine the feeling of excitement as you are handed the money. You have been yearning to win and hope this game will be the ONE. Either way, you have hope that the game will turn around for you and that you will walk away with some money. You spend the time remaining until the second half of the game starts relishing in imagining yourself winning. You can see yourself beaming with excitement as you walk away with your prize.

**Neutral Scenario:** Imagine you are watching your favorite soccer teams play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. As you wait for the next half to start, you talk to your friend sitting next to you about the weather. It is supposed to be 70 degrees tomorrow with a chance of rain. It has been raining on and off all week. They tell you that they heard the rain might continue for the next week. You tell them you usually get the weather news from your

phone. They tell you they usually watch the weather channel in the mornings on their TV and sometimes listen to the weather forecast on the radio. You recommend a weather podcast to them.

Please indicate how hopeful you are feeling that you will win money.

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How strongly do you feel you will win?

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

How strong is your hunch that you will win?

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

Trust condition:

How likely are you to put the rest of your money on this next round? Please TRUST your feelings in making this decision.

(Scale 1 = extremely unlikely to 7 = extremely likely)

Do not trust condition:

How likely are you to put the rest of your money on this next round? Please DO NOT TRUST your feelings in making this decision.

(Scale 1 = extremely unlikely to 7 = extremely likely)

How much did you rely on your feelings to make your decision in the last question?

(Scale 1 = not at all to 6 = completely)

## Study 6

Hope Scenario: Imagine you are watching your favorite football team play. You are sitting around with your friends betting on the game. You are gambling and the first half just finished and it is half time. You really hope the next half of the game will go your way and you will win. You can just imagine the feeling of excitement as you are handed the money. You have been yearning to win and hope this game will be the ONE. Either way, you have hope that the game will turn around for you and that you will walk away with some money. You spend the time remaining until the second half of the game starts relishing in imagining yourself winning. You can see yourself beaming with excitement as you walk away with your prize.

Neutral Scenario: Imagine you are watching your favorite football team play. You are sitting around with your friends betting on the game. You are gambling and have lost money so far. The first half just finished and it is half time. As you wait for the next half to start, you talk to your friend sitting next to you about the weather. It is supposed to be 70 degrees tomorrow with a chance of rain. It has been raining on and off all week. They tell you that they heard the rain might continue for the next week. You tell them you usually get the weather news from your phone. They tell you they usually watch the weather channel in the mornings on their TV and sometimes listen to the weather forecast on the radio. You recommend a weather podcast to them.

Please indicate how hopeful you are feeling that you will win money.

(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

In addition to the \$0.15 (15 cents) compensation listed for this survey, you have earned an additional \$0.15 (15 cents) that you can bet for a 1 in 10 chance of winning \$0.50. How likely

are you to bet?  
(Scale 1 = extremely unlikely to 7 = extremely likely)

Would you like to bet the additional \$0.15 (15 cents) for a 1 in 10 chance of winning \$0.50?  
No/Yes

### **Additional Study Comparing Hope to Optimism**

This study was run on Prolific with 300 participants in exchange for a small monetary amount. Participants were randomized to a hope condition, similar to the hope condition used in study 3, describing betting on the game Blackjack and yearning to win, an optimism condition similar to the hope scenario except that they were expecting to win, or a neutral condition similar to that used in study 2 about discussing the weather while waiting for the next round to start (see scenarios below). Participants were then asked how likely they were to bet followed by a hope and optimism manipulation check item (see items below).

#### **Manipulation Checks**

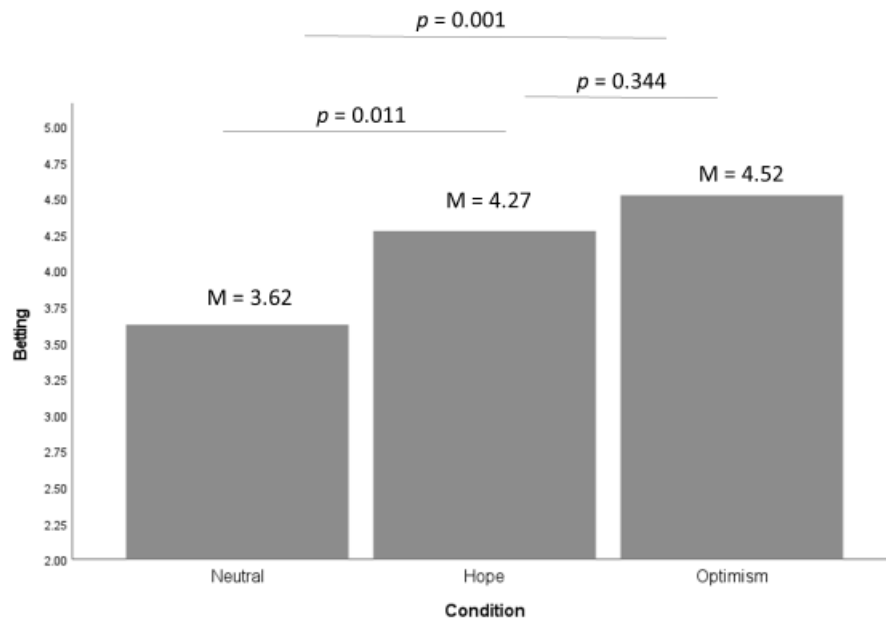
There was one careless respondent identified and no outliers, based on the criteria used throughout this paper. Overall, there was a difference in levels of hope between the groups,  $F(2, 296) = 22.58$   $p < 0.01$ . Those in the hope condition felt more hopeful ( $M_{\text{hope}} = 4.51$   $SD = 1.57$ ) compared to those in the neutral condition ( $M_{\text{neutral}} = 3.33$   $SD = 1.69$ ),  $p < 0.01$ . However, those in the optimism condition also felt more hopeful than those in the neutral condition ( $M_{\text{optimism}} = 4.74$   $SD = 1.52$  vs  $M_{\text{neutral}} = 3.33$   $SD = 1.69$ ,  $p < 0.01$ ) and there was not a significant difference in terms of hope between the hope and optimism conditions ( $M_{\text{hope}} = 4.51$   $SD = 1.57$  vs  $M_{\text{optimism}} = 4.74$   $SD = 1.52$   $p = 0.306$ ).

Overall there was a significant difference in optimism between the three groups  $F(2, 296) = 3.46$ ,  $p = 0.033$ . Those in the optimism group felt more optimistic compared to those in the neutral condition ( $M_{\text{optimism}} = 4.48$   $SD = 1.722$  vs  $M_{\text{neutral}} = 3.80$   $SD = 2.15$   $p = 0.012$ ) and those in the optimistic group felt marginally more optimistic than those in the hope condition ( $M_{\text{optimism}} = 4.48$   $SD = 1.722$  vs  $M_{\text{hope}} = 3.97$   $SD = 1.82$ ,  $p = 0.058$ ). There was not a significant difference in terms of optimism between the hope and neutral groups ( $M_{\text{hope}} = 3.97$   $SD = 1.82$  vs  $M_{\text{neutral}} = 3.80$   $SD = 2.15$ ,  $p = 0.535$ ). Hence, optimism was successfully manipulated, however, hope was not, as there was not a significant difference in levels of hope between hope and optimism groups).

#### **Main Results**

Those in the hope condition bet more compared to those in the neutral condition ( $M_{\text{hope}} = 4.27$   $SD = 1.87$  vs  $M_{\text{neutral}} = 3.62$   $SD = 1.73$ ,  $p = 0.011$ ;  $F(2, 296) = 6.56$ ,  $p = 0.002$ ) and those in the optimism condition bet more than those in the neutral condition ( $M_{\text{optimism}} = 4.52$   $SD = 1.80$  vs  $M_{\text{neutral}} = 3.62$   $SD = 1.73$ ,  $p = 0.001$ ) but there was not a significant difference in betting between those in the hope and optimism groups ( $M_{\text{hope}} = 4.27$   $SD = 1.87$  vs  $M_{\text{optimism}} = 4.52$   $SD = 1.80$ ,  $p = 0.344$ ).





## Stimuli

### Hope Scenario:

Imagine you are playing the card game Blackjack. You are sitting around a table with others playing the game. You are gambling and have lost money so far. You really hope your next hand is going to be a 21 (the highest possible earnings) and you will win. You can just imagine the feeling of excitement as you are handed the money prize. You have been yearning to get a 21 and hope this round will be the ONE. Either way, you have hope that the game will turn around for you and that you will walk away with some money. You are hopeful, imagining the future opportunities that this money might lead for you. You spend the time remaining until the next hand of cards are dealt relishing in imagining yourself winning. You can see yourself beaming with excitement as you walk away with your prize.

### Optimism Scenario:

Imagine you are playing the card game Blackjack. You are sitting around a table with others playing the game. You are gambling and have lost money so far. You are very optimistic your next hand is going to be a 21 (the highest possible earnings) and you will win. You have high

expectations that you will win and just know you'll be handed some money. You have been optimistic to get a 21 and expect this round will be the ONE. Either way, you think that the game will turn around for you and that you will walk away with some money. You are optimistic, imagining the future opportunities that this money might lead for you. You spend the time remaining until the next hand of cards are dealt thinking about how sure you are that you will win. You can see yourself beaming with excitement as you walk away with your prize.

#### Neutral Scenario:

Imagine you are playing the card game Blackjack. You are sitting around a table with others playing the game. You are gambling and have lost money so far. The last round has just finished. As you wait for the next hand to be dealt, you talk to the person sitting next to you about the weather. It is supposed to be 70 degrees tomorrow with a chance of rain. It has been raining on and off all week. They tell you that they heard the rain might continue on and off for the next week. You tell them you usually get the weather news from your phone. They tell you they usually watch the weather channel in the mornings on their TV and sometimes listen to the weather forecast on the radio. You recommend a weather podcast to them.

How likely are you to put the rest of your money on this next round?  
(Scale 1 = extremely unlikely to 7 = extremely likely)

Please indicate how hopeful you are feeling that you will win money.  
(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

Please indicate how optimistic you are feeling that you will win money.  
(Scale 1 = I do not feel this in the slightest bit to 7 = I feel this more strongly than ever)

## APPENDIX B: STUMULI USED IN CHAPTER 3

### Scale Items

Trait Hope Scale (study 1; Snyder et al. 1991)

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

- 1. = Definitely False
- 2. = Mostly False
- 3. = Somewhat False
- 4. = Slightly False
- 5. = Slightly True
- 6. = Somewhat True
- 7. = Mostly True
- 8. = Definitely True

- \_\_\_ 1. I can think of many ways to get out of a jam.
- \_\_\_ 2. I energetically pursue my goals.
- \_\_\_ 3. I feel tired most of the time.
- \_\_\_ 4. There are lots of ways around any problem.
- \_\_\_ 5. I am easily downed in an argument.
- \_\_\_ 6. I can think of many ways to get the things in life that are important to me.
- \_\_\_ 7. I worry about my health.
- \_\_\_ 8. Even when others get discouraged, I know I can find a way to solve the problem.
- \_\_\_ 9. My past experiences have prepared me well for my future.
- \_\_\_ 10. I've been pretty successful in life.
- \_\_\_ 11. I usually find myself worrying about something.
- \_\_\_ 12. I meet the goals that I set for myself.

Notes: The agency subscale score is derived by summing items 2, 9, 10, and 12; the pathway subscale score is derived by adding items 1, 4, 6, and 8. The total Hope Scale score is derived by summing the four agency and the four pathway items.

Future Time Perspective Scale (studies 1 and 3; Jacobs-Lawson and Hershey 2005)

- 1. I follow the advice to save for a rainy day.
- 2. I enjoy thinking about how I will live years from now in the future.
- 3. The distant future is too uncertain to plan for. (R)
- 4. The future seems very vague and uncertain to me. (R)
- 5. I pretty much live on a day-to-day basis. (R)
- 6. I enjoy living for the moment and not knowing what tomorrow will bring. (R)

Notes: The scale is from 1 = "strongly disagree" to 7 = "strongly agree," and the final score is the sum of all six items.

### Savings

- 1. How much savings do you have? (1 = none, 2 = \$1–\$499, 3 = \$500–\$999, 4 = \$1,000–\$4,999, 5 = \$5,000–\$14,000, 6 = \$15,000–\$29,999, 7 = \$30,000 or above).
- 2. Imagine you receive an extra \$500 per month for the next year. Please indicate how likely you are to save some of this additional income. (1 = definitely not to 6 = definitely).
- 3. Imagine you receive an extra \$500 per month for the next year. Please indicate how much of

the money you would save. (0 = \$0 to 5 = \$500).

## **Scenarios**

### ***Study 2A***

Hope (modified from scenario used in Winterich and Haws 2011)

Imagine that you are looking for a job. You have been hoping to find something that offers a good salary and schedule. So far you haven't found any potential matches. After lunch you log onto your computer and hope to see some new listings. You scroll down to the bottom of the postings as one catches your eye. You open the job posting. Here is a description of a job for which you are a perfect match. Wow. This would be a great opportunity. You work on the application and push SEND.

From the moment you saw the listing you have been hopeful that this job will be The One. Either way, you have hope that your job search is going to provide you with great opportunities and options. You hope they will call for an interview. Until then, you remain optimistic, imagining the future opportunities that this job might lead for you. You relish in imagining yourself settling into a good life. You can see yourself loving your work, having a good work life balance and even able to retire early. You beam with optimism and excitement the rest of the day.

### Neutral

Imagine just finishing dinner. You get up to go to the sink to wash dishes. First you carry all the plates and silverware to the kitchen. You fill up one part of the sink with warm water and add some dish soap. You place each plate in the soapy water to soak. You leave them there for a few minutes as you tidy up the kitchen and put away clean dishes left from earlier in the day.

Once finished with this and after there has been adequate time for the dishes to soak, you wash each plate one by one and hang them up to dry. You then wash each pot and piece of silverware. You then get out a towel and dry the dishes, pots and silverware one by one. After this, you put them back in the cabinets. You then take the sponge and clean up the table and counters.

### ***Study 2B***

#### Neutral

Imagine you have just had a pacemaker placed. You get home and turn on the television. You sit down on the couch to watch TV. You flip the channel until you get to the weather channel. The weather this week is supposed to be typical for this time of year. The weather person talks about the predicted highs and lows as well as the time of sunrise and sunset. Last week the temperatures were also typical for this time of year. As you watch TV you also fold the laundry. You first start with the socks by pairing up the matching socks. Next you fold each pair one by one. Then you fold the shirts by putting each arm piece towards the middle and then folding the shirt in half. You place the shirts on a pile. Next you fold the pants. You fold the pants by folding them in thirds. You then fold the towels. First you take each towel from the basket, fold it in half and then again in thirds. You place all the towels in a pile. Next you fold the dish towels. Similar to the regular towels you first fold each dish towel in half followed by folding it in thirds. You then put the folded clothes in the laundry basket.

#### Hope

Imagine you have just had a pacemaker placed. You really hope that it is going to last a long time and will help your heart be in great condition. You have a friend who recently had one

placed and now is feeling the best they ever have. You yearn to be able to feel as good. You imagine the pacemaker lasting a long time, perhaps the rest of your life, so you don't have to worry about it again. You can just imagine living the rest of your life energetically and feeling your best, able to do all the activities that you want because your heart is in top condition. You have read that sometimes these new technological pacemakers will help you feel even better than a healthy regular heart could because it stimulates your heart to pump with such precision that it improves your circulation and in turn gives you a lot of energy. You have grandchildren that you yearn to be able to play with in the future as they grow up and hope this pacemaker will give you the opportunity to do so. You also hope to be able to start enjoying your hobbies again and you yearn that this pacemaker to give you that chance.

### ***Studies 3 and 5***

Neutral

Imagine just finishing dinner. You get up to go to the sink to wash dishes. First you carry all the plates and silverware to the kitchen. You fill up one part of the sink with warm water and add some dish soap. You place each plate in the soapy water to soak. You leave them there for a few minutes as you tidy up the kitchen and put away clean dishes left from earlier in the day. Once finished with this and after there has been adequate time for the dishes to soak, you wash each plate one by one and hang them up to dry. You then wash each pot and piece of silverware. You then get out a towel and dry the dishes, pots and silverware one by one. After this, you put them back in the cabinets. You then take the sponge and clean up the table and counters. You then take out the broom and start to sweep the floor. You get the pan to sweep the dust and crumbs into the trash can. You then take the trash bag out of the can and tie it closed. Finally, you take the trash outside to be picked up the next day by the garbage man.

Hope (modified from scenario used in Winterich and Haws 2011)

Imagine that you are looking for a job. You have been hoping to find something that offers a good salary and schedule. So far you haven't found any potential matches. After lunch you log onto your computer and hope to see some new listings. You scroll down to the bottom of the postings as one catches your eye. You open the job posting. Here is a description of a job for which you are a perfect match. Wow. This would be a great opportunity. You work on the application and push SEND. From the moment you saw the listing you have been hopeful that this job will be The One. Either way, you have hope that your job search is going to provide you with great opportunities and options. You hope they will call for an interview. Until then, you remain optimistic, imagining the future opportunities that this job might lead for you. You spend the rest of the afternoon relishing in imagining yourself settling into a good life. You can see yourself loving your work, having a good work life balance and even able to retire early. You daydream about turning 95 years old. You can picture yourself having been retired for 40 years. You have been able to travel the world. You sit on the porch with your great grandchildren playing on the grass with your youngest great grand baby in your lap. You are filled with wonder, realizing that their college will be paid for from the money you were able to put away from your dream job. The perfect job not only led to a wonderful, fulfilling life but allowed you to help others beyond what you could have imagined. You beam with optimism and excitement the rest of the day.

### ***Study 4***

## Neutral

You just finished dinner. Now it is time to do the dishes. You start by clearing the table, stacking the plates one by one and collecting all the silverware. Then, you carry all the plates and silverware to the kitchen. You then collect all the cups and put them in the kitchen. Then you collect the napkins and put them in the garbage. You turn on the kitchen lights. You get a sponge, wet it and put some soap on it. Then you wipe off the dinner table with the soapy sponge. Afterwards, you rinse off the soap from the sponge and then wipe the table again with the clean sponge, making sure to remove all the soap from the table. You then get a towel to dry it off. You decide to wash dishes by hand today. You put on the apron and tie it in the back. You put on the dish gloves. You fill up one part of the sink with warm water and add some dish soap. You start by placing the dishes in the water to soak first. You separate the dishes from the pots, utensils and cups. You place each dish in the soapy water to soak. You leave them there for a few minutes as you tidy up the kitchen and put away clean dishes left from earlier in the day. Some the dishes in the dish rack are still wet, so you take out a dish towel and dry them off. You then put the clean plates up in the cabinet carefully one by one. You put them in stacks based on their size and the ones you use most often you try to stack towards the front. Then you put away the cups. Next, you separate the metal forks, knives and spoons from the plastic ones. Then, you put away the knives, forks and spoons in their usual place, the metal utensils in one area and the plastic in the other. Then you put away all the pots and pans. You put the pots you use least often towards the back and the ones you use most often in the front so they are easier to get to. Then you put away the cups. You arrange them by type with water cups in one area and mugs in another area. Once finished with this and after there has been adequate time for the dishes to soak, you wash each plate one by one by first scrubbing with the sponge and making sure all the food and residue has been removed from each item. You then rinse with warm water. Then you hang each plate up to dry. You then wash each pot and piece of silverware. You scrub them with the sponge and then rinse with the warm water. You then get out a towel and dry the dishes, pots and silverware one by one. After this, you put them back in the cabinets. You then take the sponge and clean up the table and counters. You then take out the broom and start to sweep the floor. You get the pan to sweep the dust and crumbs into the trash can. You then take the trash bag out of the can and tie it closed. Finally, you take the trash outside to be picked up the next day by the garbage man.

## Hope (scenario used in Winterich and Haws 2011)

“Imagine that you are looking for a job. You have been hoping to find something that offers a nice salary with a good schedule. But the job market has been tough. Every day you search online for job opportunities, but each listing you see requires skills or experience you don’t have or doesn’t pay enough to cover your expenses and school loans. You know that the right job will be there for you soon, you just have to remain optimistic and hope for the best. After all, if you give up looking, you’ll never find a great new job!

After lunch you log onto your computer and hope to see some new listings. Maybe today you will find a job listing that will provide you with the opportunities you dreamed of! You put in your search criteria, press “Search” and you wait. The wait always seems endless, but you spend the time thinking about how your life could change if the right job opportunity came along. When the search is finished you see that there are six pages of listings. Wow, six pages. That is more than you have seen in weeks. Surely, this must be a good sign.

You grab a glass of ice water and start your daily search process. Already, you see that today's listings are full of opportunity. There are several jobs for which you have the necessary experience and are qualified. You review the listings and feel very hopeful. You work on the applications for over an hour and just as you are about to finish for the day, you see that a new listing has just been posted. You are tired, but feel that since the day has been full of promise, you should check out this last listing.

You open the job posting. Here is a description of a job that you are not only qualified for, but a job for which you are a perfect match. The job is with a highly-regarded company that is known for treating their employees well. Wow. This would be a great opportunity for you. You work on this last application for the day and then press SEND. It is now out of your hands. You wonder about the people who will read your applications you've submitted. Will they understand how well you match the position? Will you get an interview, and if so, which suit will you wear? From the moment you saw the listing you have been optimistic that this job will be The One. Even if this job is not The One, you feel optimistic that your job search is going to start getting much better and provide you with great opportunities and options.

Every day you apply for more jobs, but you always start by checking your computer to see if you've received an e-mail from the company. You know this process takes time. You feel that there is a good chance for you to get this job, but you are uncertain if the company feels the same. You hope they will call for an interview. Until then, you remain optimistic imagining the future opportunities that this job might lead to for you."

Past Hope (scenario used in Winterich and Haws 2011)

"Imagine that you have just finished your first month at a new job. Things have been going very well, but you take a few moments to think back and reflect that it was just a few months ago when you were looking for this job. You had been hoping to find something that offered a nice salary with a good schedule. But the job market had been tough. The economy was not doing well and unemployment rates had been high for some time. Every day you searched online for job opportunities, but you could rarely find a posting you were qualified for or that would pay enough to cover your expenses and school loans. You remember thinking that the right job would be there for you soon, you just had to remain optimistic and hope for the best. After all, if you had given up looking, you would have never found your great new job!

You remember one day you logged on to your computer and hoped to see some new listings. You had put in your search criteria, pressed "Search" and waited. The wait always seemed endless, but you would spend the time thinking about how your life could change if the right job opportunity came along. When that search was finished you saw there were six pages of listings. That was more than you had seen in weeks. You had thought surely this must be a good sign. You had opened one job posting and saw a description of a job that you were not only qualified for, but a job for which you were a perfect match. The job was with a highly-regarded company that is known for treating their employees well. Wow. You had thought this would be a great opportunity for you. You remember completing this application and feeling very hopeful that this job might be The One. Over the next several days, you had wondered about the people who would read your application. Would they understand how well you match the position? Would you get an interview, and if so, which suit would you wear? You were so optimistic about this position. Sure enough, you got a call from this company, and were offered an interview. You remember how hopeful you were that things would go well and you would get the job. You think about how although you were nervous during the interview process, the people there put you at

ease and made you feel hopeful that this was in fact the job and the company for you. Just days after the smooth interview process, your hopes were realized, and you were offered the job. Sitting in your office now, you think back on how hopeful you had been during your job search. Even when you thought you'd never find the right job, you had tried to remain optimistic. When you finally found this job posting, you felt so positive that the future would work out while you were waiting for the call for the interview and then the call for the job offer. Right now, all you can think about is how hopeful you were during your job search."

Past Pride (scenario used in Winterich and Haws 2011)

"Imagine that you are looking for a job. You have been hoping to find something that offers a nice salary with a good schedule. But the job market has been tough. The current economy has not been doing well and unemployment rates have been high for some time, but you have good qualifications. Every day you search online for job opportunities, but each listing you see requires skills or experience you don't have or doesn't pay enough to cover your expenses and school loans. You know you have a lot to offer, you just have to remain optimistic knowing that you will be able to demonstrate your skill set in the future. After all, if you give up looking, you'll never find a great new job! After lunch you log onto your computer and hope to see some new listings. Maybe today you will find a job listing that will provide you with the opportunities you dreamed of! You put in your search criteria, press "Search" and you wait. The wait always seems endless, but you spend the time thinking about how your life could change if the right job opportunity came along. When the search is finished you see that there are six pages of listings. Wow, six pages. That is more than you have seen in weeks. Surely, this must be a good sign. You grab a glass of ice water and start your daily search process. Already, you see that today's listings are full of opportunity. There are several jobs for which you have the necessary experience and are qualified. You review the listings and imagine how proud you will be when you find the job you have been looking for because of all the hard work you have put in. You work for over an hour and feel very confident that one of the applications will lead to a great paying and fulfilling career path. Only a day goes by and you get a call back from one of the applications you submitted. The job is with a highly-regarded company that is known for treating their employees well. The representative tells you they were impressed with your resume. Wow. You would be so proud to work for this company. The day of the interview comes. You have diligently prepared yourself for the interview and you are confident that your hard work will finally pay off. All you can think about is how this is what you have worked for. From the moment you saw the listing you have been optimistic that this job will be The One. You go to the interview and really feel like you nailed it because you were so well-prepared. Everyone seems very interested to meet with you. You are able to tell them about all of your experiences that would be beneficial for this position. The best part of all is that you have earned this opportunity all on your own. You are so proud of yourself. Just a couple days after the interview, the phone rings. They tell you how well you did on the interview and they offer you the job. You are filled with pride. You have gotten your dream job! And all because of the hard work you've put in. You sit back and think about how well-deserved this is and give yourself a huge pat on the back."

Future Pride (scenario used in Winterich and Haws 2011)

"Imagine that you are looking for a job. You have been hoping to find something that offers a nice salary with a good schedule. But the job market has been tough. The current economy has



not been doing well and unemployment rates have been high for some time, but you have good qualifications. Every day you search online for job opportunities, but each listing you see requires skills or experience you don't have or doesn't pay enough to cover your expenses and school loans. You know you have a lot to offer, you just have to remain optimistic knowing that you will be able to demonstrate your skill set in the future. After all, if you give up looking, you'll never find a great new job! After lunch you log onto your computer and hope to see some new listings. Maybe today you will find a job listing that will provide you with the opportunities you dreamed of! You put in your search criteria, press "Search" and you wait. The wait always seems endless, but you spend the time thinking about how your life could change if the right job opportunity came along. When the search is finished you see that there are six pages of listings. Wow, six pages. That is more than you have seen in weeks. Surely, this must be a good sign. You grab a glass of ice water and start your daily search process. Already, you see that today's listings are full of opportunity. There are several jobs for which you have the necessary experience and are qualified. You review the listings and imagine how proud you will be when you find the job you have been looking for because of all the hard work you have put in. You work for over an hour and feel very confident that one of the applications will lead to a great paying and fulfilling career path.

Only a day goes by and you get a call back from one of the applications you submitted. The job is with a highly-regarded company that is known for treating their employees well. The representative tells you they were impressed with your resume. Wow. You imagine how proud you would be to work for this company each day! The day of the interview comes. You have diligently prepared yourself for the interview and you are confident that your hard work will finally pay off. All you can think about is how this is what you have worked for. From the moment you saw the listing you have been optimistic that this job will be The One. You go to the interview and really feel like you nailed it, and you are proud of yourself for your efforts. Everyone seems very interested to meet with you. You are able to tell them about all of your experiences that would be beneficial for this position. The best part of all is that you have earned this opportunity all on your own. Every day you stay by your phone waiting for the call to tell you that you got the job. You imagine how proud you will feel if you are able to tell everyone about the job you got because of all of your hard work."