INFLUENCE OF CHILDHOOD ENVIRONMENTS ON CONSUMER BEHAVIOR

A DISSERTATION
SUBMITTED TO THE FACULTY OF
UNIVERSITY OF MINNESOTA
BY

CHIRAAG MITTAL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

ADVISED BY VLADAS GRISKEVICIUS

MAY 2016

ACKNOWLEDGEMENTS

I thank my dissertation committee members – Vladas Griskevicius, Debbie John, Akshay Rao, and Jeff Simpson. My sincerest thanks to Vlad for seeing a glimmer of hope in me and for guiding me all the way through. Nearly all of my work is attributable to the countless hours he spent and to the support he provided in various ways. He single-handedly made my doctoral journey an enjoyable and fluid experience, while making it intellectually stimulating and rewarding. I am thankful to Debbie for her continual support and feedback. She never failed to amaze me by her wisdom and by her extraordinary ability to pierce through complexities and to produce simple and elegant solutions. I am grateful to Akshay for his discerning guidance and for his unceasing willingness to help me. His keen insights on the relevance and extendibility of my work have been instrumental. Thanks to Jeff for making his knowledge and other vital resources available during my research. I am indebted to him for his mentorship.

Many thanks to Bruce Ellis for inspiring me and for introducing me to the lush world of behavioral ecology. Thanks to Joe Redden for his regular feedback and for his help during the job market. Thanks to Carlos Torelli and Kathleen Vohs for being wonderful collaborators. I also thank my fellow graduate students and my friends who have helped and supported me in making my research and life better.

Finally, thanks to my family. My academic career would not be possible without the love, encouragement, and confidence expressed by my parents and grandparents. My heartfelt thanks to my best friend and wife, Hina, for her endless support and backing. A special shout-out to our daughter, Myra, for bringing joy and sanity to our home.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER II: Essay 1: How Childhood Environment Affects Adult Healthcare Decisions

LIST OF FIGURES

CHAPTER II: Essay 1: How Childhood Environment Affects Adult Healthcare Decisions

CHAPTER III: Essay 2: Influence of Childhood Environment on Planning

CHAPTER I
OVERVIEW OF DISSERTATION

Early-life environment plays a strong role in an individual's growth and well-being. Because children's experiences are shaped by their surroundings, the environment they grow up in influences their development and life outcomes. Children who are well-supported and nurtured establish sound developmental trajectories that serve them throughout their life course. Unfortunately, not everyone has access to a lush and nurturing environment. Because of socioeconomic inequality, millions of young children grow up in households and communities with far fewer socioeconomic resources than their affluent peers. In the U.S. alone, for example, 25% of children live below the poverty line and 48% can be classified as being in low-income households (Addy and Wight 2012).

How does growing up poor versus wealthy affect people's lives? Research suggests that resource availability in the early-life environment is a powerful predictor of various life outcomes including health, education attainment, and well-being (Duncan et al. 2002; Miller et al. 2009). However, much less is known about how resource availability during childhood influences people's decisions and behaviors in the marketplace. For example, does growing up poor versus wealthy have negative or positive effects on consumers' judgments and decision making?

In my dissertation, I attempt to address this question. Specifically, I seek to answer how growing up poor versus wealthy influences consumer behavior in adulthood. Previous findings show that growing up in resource-deprived conditions is associated

with poor judgment and decision making. I develop a model to identify when people who grew up poor make better decisions. I show that people who grew up poor can make better health decisions and be better planners compared to those who grew up wealthy. But these positive effects of adverse childhoods emerge only under specific conditions. For example, people who grew up poor made better health decisions as adults when they were provided information about the average likelihood of getting sick during conditions of financial threat. By integrating findings from human development and evolutionary psychology, my dissertation shows how, when, and why people's upbringing affects their choices in the marketplace. In addition to showing how specific features of our childhood environment have long-lasting effects on choices in adulthood, my dissertation points to ways of improving decision making for individuals who grew up poor.

My dissertation consists of two essays. The first essay examines how childhood environment shapes people's desire for health insurance. The second essay examines how childhood environment affects psychological processes related to planning. Both essays are described in detail below.

Essay 1: How Childhood Environment Affects Adult Healthcare Decisions

The first essay contains a series of experiments that examine the effects of childhood environment on people's desire for health insurance. I propose that people's desire for medical coverage is shaped by their childhood socioeconomic status (SES). My model makes two predictions. First, low-SES in childhood should be associated with a lower desire for health coverage, with this association being particularly strong under conditions of financial threat. This means that people who grew up poor should be

especially likely to forego health coverage when they experience financial distress during adulthood. Second, my model predicts that the effect of childhood SES on desire for health coverage should be reversed under certain conditions. Specifically, I propose that a small change in how health information is presented should *increase* the motivation for people from low-SES backgrounds to seek health coverage, even in the presence of financial threat.

A series of experiments revealed that growing up poor can decrease *or* increase desire for health coverage. People who grew up poor were generally less interested in seeking medical coverage compared to people who grew up wealthy (Studies 1-4). This effect was independent of people's current ability to afford insurance and was strongest when adults felt a sense of current financial threat. In these conditions, childhood SES influenced adult desire for healthcare because people from wealthy childhoods were more risk-averse than those from poorer childhoods, which led them to seek health insurance. In fact, willingness to engage is risky behavior statistically mediated the effect of childhood environment on desire for health insurance (Study 3).

Although people who grew up poor were generally less interested in health insurance, we uncovered a condition that reverses this effect: providing people with base rate information about health risks. When information about the average likelihood of getting sick was made available, people who grew up poor had a *greater* desire for medical coverage compared to those who grew up wealthy (Studies 4 to 7). Once again, this effect was strongest in conditions of financial threat when people were stressed about their resources. The reason for the reversal effect stemmed from the fact that providing

base rates changed the psychological mechanism driving how childhood SES influences health decisions. Instead of being driven by people's risk preferences, providing base rates led the effect to be driven by risk perceptions – people's perceptions of how likely they are to get sick. People who grew up poor perceived themselves as more likely to get sick compared to those who grew up wealthy, which statistically mediated their increased desire for health coverage (Study 7).

Essay 2: Influence of Childhood Environment on Planning

Essay 2 examines the influence of childhood environments on psychological processes crucial for planning for the future. Evidence from a set of experiments suggests that the effect of childhood environment on planning is different depending on whether motivational (e.g. propensity to plan) or volitional (e.g. task completion self-efficacy) processes are activated. In addition, I once again find that the effect of childhood environment was most strongly manifest during conditions of financial threat.

Results from Study 1 show that people from different childhood environments differed in their propensity to plan under conditions of financial threat. Whereas, people from resource-rich backgrounds had a greater propensity to plan in response to financial threat, people from resource-deprived backgrounds had a lower propensity to plan in response to threat.

However, the pattern of results was very different when people were asked about their self-efficacy is regards to getting tasks done – i.e. their time estimates for carrying out future tasks. Results from Study 2 showed that people from poorer backgrounds overestimated the time it would take them to complete future tasks. In contrast, People

from wealthier backgrounds underestimated the time it would take them to complete future tasks in response to financial threat, indicating a planning fallacy.

Study 3 replicated the novel effect of childhood resources and financial threat on people's estimates of task completion times. Once again I found that people from poorer backgrounds overestimated the time it would take them to complete future tasks, whereas those from wealthier backgrounds underestimated the time. Importantly, mediation analyses confirmed that the reason for this effect is that facing financial threat changed people's perceptions of personal control as a function of their childhood environment. People from poorer backgrounds had lower perceptions of personal control, leading them to indicate longer time estimates to finish the same task. In contrast, people from wealthier backgrounds had higher perceptions of personal control in response to threat, leading them to indicate shorter time estimates to finish a task.

Finally, Study 4 tested a strategy to reduce the difference in time estimates resulting from facing financial threats among people from different SES backgrounds. Specifically, the goal was to reduce planning fallacy among people who are most susceptible to it – those from wealthier backgrounds. Consistent with predictions, I found that informing people about their tendencies to underestimate task completion times erased the differences in time estimates among people from different childhood SES backgrounds.

REFERENCES

Addy, Sophia and Vanessa R. Wight (2012), *Basic Facts about Low-income Children, 2010: Children under Age 6,* National Center for Children in Poverty, Columbia University.

Duncan, Greg J., Mary C. Daly, Peggy McDonough, and David R. Williams (2002), "Optimal Indicators of Socioeconomic Status for Health Research," *American Journal of Public Health*, 92 (7): 1151–57.

Miller, Gregory E., Edith Chen, Alexandra K. Fok, Hope Walker, Alvin Lim, Erin F. Nicholls, Steve Cole, and Michael S. Kobor (2009), "Low Early-Life Social Class Leaves a Biological Residue Manifested by Decreased Glucocorticoid and Increased Proinflammatory Signaling," *Proceedings of the National Academy of Sciences*, 106 (34), 14716–21.

CHAPTER II
ESSAY 1: HOW CHILDHOOD ENVIRONMENT AFFECTS ADULT HEALTHCARE DECISIONS

Given recent efforts to provide health insurance options to all U.S. residents, why do millions of Americans still have no health insurance and millions more remain severely underinsured? One contributing reason is that some people might not be able to afford health insurance (Baicker, Congdon, Mullainathan 2012; DeNavas-Walt, Proctor, and Smith 2013). Yet studies show that health insurance is affordable to a large proportion of the uninsured (Bundorf and Pauly 2006; Levy and DeLeire 2008). This suggests that lack of money alone does not fully explain why millions of people choose to forego health insurance.

Considerable research has examined factors that influence decisions about insurance. For example, insurance decisions can be influenced by framing effects (Johnson et al. 1993; Lichtenstein and Slovic 1971, 1973), the status-quo bias (Samuelson and Zeckhauser 1988; Viscusi et al. 1987), information search costs (Schlesinger and von-Schulenberg 1991), affect (Hsee and Kunreuther 2000), and risk-seeking (de Meza and Webb 2001; Petrolia, Landry, and Coble 2013). In this research, we propose that the decisions consumers make about health insurance are influenced by an underappreciated factor - their experiences as children.

We propose that people's desire for medical coverage is shaped by their childhood socioeconomic status (SES). Our model makes two predictions. First, low-SES in childhood should be associated with a lower desire for health coverage, with this association being particularly strong under conditions of financial threat. This means that

people who grew up poor should be especially likely to forego health coverage when they experience financial distress during adulthood. Second, our model predicts that the effect of childhood SES on desire for health coverage should be reversed under certain conditions. Specifically, we propose that a small change in how health information is presented should *increase* the motivation for people from low-SES backgrounds to seek health coverage, even in the presence of financial threat.

Seven experiments tested how childhood SES influences desire for health coverage. The studies yielded two sets of findings consistent with predictions from the model. First, people who grew up poor were less interested in obtaining medical insurance compared with people who grew up wealthy. This effect was independent of people's current level of SES and emerged most strongly when they were experiencing financial threat. The reason why growing up poor led people to forgo health insurance was because low-SES in early life is associated with increased willingness to take risks in adulthood.

Second, the effect of childhood SES on desire for health coverage reversed when people were provided with base rate information about health risks. When information about the average likelihood of getting sick was made available, people who grew up in low-SES environments became *more likely* to seek medical coverage. This effect was, again, observed primarily when people felt financially threatened. Furthermore, providing base rate information changed the psychological process driving people's decisions about healthcare. Rather than being driven by willingness to take risks, providing base rates led the effect of childhood SES on desire for health coverage to be driven by differences in

health risk perception – the extent to which childhood SES influenced people's perceptions of their chances of getting sick.

This research makes several contributions. First, whereas prior work has primarily examined how childhood environment influences consumer behavior in children and adolescents (Chaplin and John 2007; Chaplin, Hill, and John 2014; Rindfleisch, Burroughs, Denton 1997), we examine how childhood environment influences consumer behavior in adulthood, a topic of growing interest among consumer researchers (e.g. Connell, Brucks, and Nielsen 2014; Richins and Chaplin 2015). We demonstrate that socioeconomic status in childhood can have long-lasting effects on adult consumer behavior, whereby the effects of childhood SES manifest most strongly under conditions of financial threat.

Second, this research contributes to understanding consumer health judgment and decision-making (Johnson et al. 1993; Block and Keller 1995; Raghubir and Menon 1998). We show that desire for medical coverage is impacted in specific ways by a person's childhood SES independent of their adult SES. Furthermore, we provide mediational evidence showing that childhood SES influences healthcare decisions via two different psychological mechanisms depending on the specific nature of the situation.

Finally, we identify a condition when people who grew up poor are more motivated to seek medical coverage – when a message provides base rate information about the average likelihood of being affected by a given disease. This finding makes a theoretical contribution by being one of the first to show how childhood SES shapes risk perceptions and subsequent healthcare decisions (Menon, Block, and Ramanathan 2002;

Menon, Raghubir, and Agrawal 2007; Yan and Sengupta 2013). This finding also has important implications for the communication of health messages to low-SES audiences, whereby making small changes in health communication can substantially increase desire for healthcare.

CONCEPTUAL OVERVIEW

We first discuss research on childhood socioeconomic status and its consequences on adult decision-making. Next, we examine factors that drive health insurance decisions, focusing on two important aspects of risk. We then tie these threads together, proposing that growing up poor can decrease *or* increase desire for health insurance, depending on the specific aspect of risk driving health insurance decisions.

The Importance of Childhood Socioeconomic Status

Childhood SES reflects resource availability in one's early-life environment (Belsky, Schlomer and Ellis 2011; Miller et al. 2009; Simpson et al. 2012). Childhood SES is a powerful predictor of health, education attainment, and well-being throughout people's lives (Duncan et al. 2002; Miller et al. 2009). Given the vital role of childhood SES, there has been an increased interest in understanding why and how childhood SES influences adult behavior (Chen 2004; Pampel, Kruger, and Denney 2010; Griskevicius et al. 2011a, 2011b, 2013; Mittal and Griskevicius 2014; Roux and Goldsmith 2014; Thompson, Banerji, and Hamilton 2015; White et al. 2013).

We draw on a developmental perspective of SES, which considers childhood SES as a marker of exposure to a stressful and unpredictable environment in early life (Belsky, Schlomer, and Ellis 2011; Chen and Miller 2012; Ellis et al. 2009). Growing up

in a low-SES environment is associated with having fewer resources. But a developmental perspective highlights that childhood SES indicates not only differential access to financial resources, but is also centrally linked to differential exposure to stress and instability in early-life. Lower-SES environments, for example, have a greater prevalence of fluctuating employment and inconsistent resource availability (Belsky, Steinberg, and Draper 1991; Brady and Matthews, 2002; Evans 2004; Jensen et al. 1983; Matheny et al. 1995; Troxel and Matthews 2004).

Longitudinal studies that have tracked people's lives from birth to adulthood show that resource-deprived environments are more stressful and unpredictable (Belsky et al. 2011; Mittal et al. 2015; Simpson et al. 2012). They find that exposure to stress and unpredictability shapes behavior later in life regardless of resource conditions in adulthood (Belsky et al. 2011; Mittal et al. 2015; Simpson et al. 2012). Childhood SES, therefore, shapes adult behavior not simply because children have fewer financial resources, but because of the nature of the differences in stress and unpredictability in high- versus low-SES childhood environments.

Childhood SES is known to influence decisions related to risk and impulsivity in adulthood (Belsky et al. 2011; Brumbach, Figueredo, and Ellis 2009; Galobardes, Lynch, and Davey Smith 2004; Hill, Jenkins, and Farmer 2008; Pollitt, Rose, and Kaufman 2005; Simpson et al. 2012). For instance, growing up in low-SES environments increases the likelihood that people adopt an opportunistic orientation in decision-making, leading them to take more risk for immediate rewards and to discount future consequences (Ellis et al. 2012). Although this orientation is often associated with poor judgement and

decision-making, increased risk-taking and discounting of the future tends to be adaptive in unpredictable environments, in which opportunities are often fleeting and the future is much more uncertain (Ellis et al. 2009; Frankenhuis and Del Guidice 2012; Rogers 1994). Thus, growing up in low-SES conditions is associated with increased proclivity toward risk and impulsivity.

Role of Current Financial Threat

Although there is an association between early-life adversity and adult behavior, experiments with adults show that differences in behaviors between people who grew up poor versus wealthy are not always readily observable. Instead, childhood-related differences in behaviors such as risk-taking and impulsivity tend to be most strongly evoked in stressful contexts (Griskevicius et al. 2011a, 2011b, 2013; Hill et al. 2013; Mittal and Griskevicius 2014; Mittal et al. 2015; Moss and Maner 2014; White et al. 2013).

An important stressful context is financial threat. Financial threat reflects the sense that resources are scarce and uncertain (Horton 2009; Marjanovic et al. 2013). Financial threat is the leading source of modern distress, with nearly three-quarters of adults in the United States reporting feeling stressed about money, such as by being concerned about economic and job stability (American Psychological Association 2015; Diener and Diener 2002; Minsky 1986).

Whereas many studies using experimental methods find few differences in behavior between people who grew up poor versus wealthy *in the absence of current financial threat*, exposing people to financial threat evokes different behaviors from

people who grew up wealthy versus poor (Griskevicius et al. 2013; Mittal and Griskevicius 2014; Mittal et al. 2015). For example, when people read a news story about economic instability that elicits a sense of financial threat, people who grew up poor take more risks and are more impulsive than those who grew up wealthy (Griskevicius et al. 2013; Mittal and Griskevicius 2014).

Why are tendencies associated with early-life environments more likely to be expressed in threatening contexts? Although the precise reasons remain unknown, a leading possibility is that such effects stem from the nature of the human stress response system. The childhood environment plays a fundamental role in the development of physiological systems that govern how individuals respond to stress throughout life (Del Giudice, Ellis, and Shirtcliff 2011; McEwen 2012; Taylor 2010). Adverse childhood environments produce elevated levels of stress, thereby altering the stress response systems of children who develop in adverse versus non-adverse environments. For example, a stressful early-life environment alters how the body copes with the release of stress hormones such as cortisol when confronted with threats later in life (McEwen and Stellar 1993; Taylor et al. 2004). As a consequence, people from poor versus wealthy childhood backgrounds may behave differently when confronted with stressful situations in adulthood because their stress response systems have been calibrated differently in childhood.

In fact, similar effects have been observed in other animals. For instance, research with rats shows that the behavioral effects of deprived versus non-deprived early-life environments emerge primarily in stressful adult contexts (Bagot et al. 2009; Champagne

et al. 2008). Just like in experiments with people, when tested in benign contexts, adult rats reared in deprived versus non-deprived conditions behaved similarly. It was only when they were tested in stressful contexts that the effects of early-life environments emerged.

Risk and Health Insurance Decisions

Should growing up in low-SES environments decrease or increase desire for health insurance? To understand how childhood influences health decisions, it is useful to consider the psychology of risk, which is an important factor in insurance decisions (Kunreuther and Pauly 2006; Slovic 1987). Risk psychology includes two aspects: risk propensity and risk perception.

Risk propensity reflects an individual's tendency to pursue or avoid risks in a given situation (Sitkin and Pablo 1992). People with higher risk propensity are more likely to engage in risky behaviors compared to those with lower risk propensity. Risk propensity captures the tendency of a person to engage in a risky behavior, such as willingness to engage in dangerous behavior, which can be higher or lower depending on the situation (Sitkin and Pablo 1992).

Risk propensity is associated with both increased willful risk-taking and decreased precautionary behaviors, including buying insurance (Arrow 1971; de Meza and Webb 2001; Mossin 1968; Petrolia, Landry, and Coble 2013; Smith 1968). For example, higher risk propensity is related to risky behaviors such as unsafe sex, reckless driving, substance abuse, and smoking (Anderson and Mellor 2008; Hanoch, Johnson, and Wilke 2006; Lejuez et al. 2002). Individuals with a higher risk propensity are also

less likely to take preventative actions such as getting regular physical checkups or mammogram screenings (Mechanic and Cleary 1980).

Risk perception reflects people's subjective judgment about the severity of a risk (Slovic 1987). Whereas risk propensity represents a person's willingness to take risk, risk perception represents an individual's perception of the likelihood of the occurrence of a negative event (Menon, Raghubir, and Agrawal 2007).

Risk perception is important because people's perception of their own risk of getting a given disease often differs from the base rate of that disease in the general population (Lin, Lin, and Raghubir 2003; Perloff and Fetzer 1986; Raghubir and Menon 1998; Yan and Sengupta 2013). People who underestimate the likelihood of being affected by a disease are less likely to take preventive action (Raghubir and Menon 1998; Taylor and Brown 1988; Weinstein 1980). For example, individuals who perceive that they are less likely to get sick are less likely to insure against this risk (Camerer and Kunreuther 1989; Kunreuther 1996; Kunreuther and Pauly 2006; Rees and Wambach 2008; Spinnewijn 2013).

Predictions

Both risk propensity and risk perception are important factors in decisions about health insurance. We propose that childhood SES can serve to increase *or* decrease desire for health insurance depending on whether healthcare decisions are being driven by a person's risk propensity or risk perception.

We hypothesize that health insurance decisions are usually driven by risk propensity. Insurance is used primarily to hedge against the possibility of an undesirable

future event. Forgoing insurance is, therefore, risky because it exposes people to the possibility of negative consequences. Insurance should, thus, be more appealing to people who have a lower likelihood of taking risks - that is, to people with lower risk propensity.

People who grew up in high-SES environment are less likely to take risks compared to those who grew up in low-SES environments when facing financial threat (Griskevicius et al. 2013). We therefore predict that people who grew up in high-SES childhood conditions should be more interested in health insurance than people who grew up in low-SES conditions in response to financial threat. Furthermore, we propose that this effect will be driven by risk propensity. That is, we predict that the effect of childhood SES on health insurance will be driven by differences in people's willingness to take health risks. Formally:

H1: Childhood SES should have a *positive* effect on desire for medical coverage and this effect should manifest most strongly under conditions of financial threat.

H2: The effect of childhood SES on desire for medical coverage should be statistically mediated by willingness to take risks.

Our model contends that health insurance decisions are often driven by *risk propensity*, which leads people from low-SES backgrounds to forgo health coverage. But we hypothesize that people who grew up in low-SES backgrounds might behave very differently when their health insurance decisions are instead driven by *risk perception*, rather than by risk propensity.

Risk perception refers to a person's estimate of the likelihood that he or she will get sick. People who grew up in low-SES conditions may perceive a higher likelihood that they will get sick compared to people who grew up in high-SES conditions. If so, people who grew up in low-SES environments may be *more* likely to seek health insurance compared to people who grew up in high-SES environments.

These predictions are derived from findings showing that childhood SES is related to people's sense of control, which refers to people's perception about their level of control over their life. People from poorer backgrounds have a lower sense of control compared to those from wealthier backgrounds, with experimental work showing that the relation between childhood SES and sense of control emerges most strongly under stressful situations such as when facing financial threat (Mittal and Griskevicius 2014). The lower a person's sense of control, the more pessimistic they are about the future (McKenna 1993; Weinstein 1980; Klein and Helweg-Larsen 2002). This suggests that people from poorer backgrounds might be particularly pessimistic about their health by believing they are more likely to get sick. That is, people who grew up poor may have higher risk perceptions, which could drive an increased desire for health insurance.

When should health insurance decisions be driven by risk perceptions rather than risk propensity? We propose that health decisions may be driven by risk perceptions when people are provided with base rate information about disease – the prevalence of a disease in the population (Keller, Lipkus, and Rimer 2003; Lin et al. 2003; Raghubir and Menon 1998). Exposure to base rate information is more likely to lead people to consider their own likelihood of getting a disease, leading people to form subjective likelihood

judgments about the possibility of getting sick. For example, if 5% of the population is affected by a given disease, people who grew up in low-SES conditions might believe that this disease is *more* likely to affect them. This increased risk perception might then motivate them to seek health coverage. After all, the more a person's believes that they will be affected by a disease, the more motivated they should be to buy insurance against it.

We therefore predict that if base rates are made available, people who grew up in low-SES environments will be *more likely* to seek health coverage compared to people who grew up in high-SES environments. In such situations, the effect of childhood SES on desire for health coverage should be statistically mediated by differences in risk perception – the extent to which childhood SES leads people to have a higher or lower perception of their likelihood of getting sick. As earlier, these effects of childhood SES should be observed primarily when people feel financially threatened. Formally:

H3: When base rates for sickness are made salient, childhood SES should have a *negative* effect on desire for medical coverage and this effect should be amplified by conditions of financial threat.

H4: When base rates for sickness are made salient, the effect of childhood SES on desire for medical coverage should be statistically mediated by perceptions of likelihood of getting sick.

Taken together, we propose that childhood SES should have an opposing effect on desire for health insurance depending on whether the decision is driven by a person's risk propensity versus risk perception. In general, we predict that health insurance

decisions are driven by risk propensity. Thus, we propose that people who grew up poor should have a *lower* desire for health insurance compared to people who grew up wealthy, and that this effect will be strongest in conditions of financial threat. However, when base rates are made salient, we predict that the effect of childhood SES will be reversed because health insurance decisions should be driven by people's risk perceptions. Thus, when base rates are made salient, people who grew up poor should have *greater* desire for health insurance compared to those who grew up wealthy. This effect of childhood SES on desire for health coverage should be strongest in conditions of financial threat and should be mediated by differences in health risk perception. Seven experiments were conducted to test these hypotheses.

STUDY 1

Study 1 tested how growing up wealthy versus poor affects people's desire for medical coverage in adulthood. We predicted that childhood SES should have a positive effect on desire for medical coverage, whereby higher resources in childhood should predict a greater desire for medical coverage. Consistent with H1, we predicted that the effect of childhood environment should be amplified by conditions of financial threat.

Method

Participants and Study Design. One-hundred and forty U.S. respondents (53.6% female; M_{age} = 33.9, SD = 12.6) from an online subject pool participated in exchange for a small monetary payment. The study had two between-subjects experimental conditions: financial threat and control. In addition, childhood SES was measured via self-report.

Financial Threat. Participants were informed that the study was examining multiple things, including getting people's feedback about the current state of the economy and their opinion on consumer services. As part of the financial threat manipulation, participants completed a writing task adapted from previous work (Fischhoff et al. 2003; Roux and Goldsmith 2014). Participants in the financial threat condition were asked to write about three indicators that suggest the economy is "becoming increasingly unpredictable and that resources such as jobs are becoming scarcer." Typical responses included noting that the national debt is increasing, mentioning the last recession, and noting fluctuations in the stock market. Those in the control condition were asked to list three indicators that suggest the economy is "neither getting better nor becoming worse." Typical participant responses included noting that inflation is low, the currency is stable, and lack of need for additional government spending.

Medical Coverage. The measure of desire for health insurance was adapted from previous work (Johnson et al. 1993; Slovic et al. 1977). Participants first imagined that they currently did not have health insurance. Next, they indicated their likelihood of buying health coverage. Answers were recorded on a 101-point likelihood scale (0 = Not at all likely, 100 = Extremely likely).

Childhood Resources. To assess monetary resources during childhood, we relied on a validated measure of childhood environment (Ross and Hill 2000; Ross and McDuff 2008). Specifically, we used the 3-item "money" sub-scale that captures resource availability in childhood. Participants reported the extent to which the following three

items described their family when they were growing up: “We were never sure how we would pay my bills from month to month” (reverse coded), “My family always had enough money for food and the rent or mortgage payment”, and “Some months we had plenty of money to spend, other months we were quite poor” (reverse coded). Each item was assessed on a 7-point scale (1 = Not at all; 7 = Extremely). The items were averaged into a *childhood resources* index ($\alpha = .76$).

Additional Variables. In addition to measuring resources in childhood, we also assessed people’s current level of resources. Participants indicated their agreement with three statements that were based on items used to measure childhood resources: “I have enough money to buy things I want”, “I don't need to worry too much about paying my bills”, and “I feel relatively wealthy these days”. Responses were recorded on a 7-point scale (1 = Strongly Disagree; 7 = Strongly Agree). The three items were averaged into a *current resources* index ($\alpha = .90$).

Results and Discussion

Manipulation Check. To assess whether the financial threat manipulation was successful, all participants indicated the extent to which they agreed with two statements at the end of the study: “financial uncertainty is increasing” and “resources are becoming scarce.” Responses were provided on a 7-point scale (1 = Strongly Disagree; 7 = Strongly Agree). The two items were highly correlated ($r = .63$, $p < .001$) and were averaged into a financial threat index.

Findings showed that participants in the financial threat condition reported significantly greater financial threat ($M = 5.42$, SD = 1.18) compared to the control

condition (M = 4.48, SD = 1.54; $t(138) = 4.01$, $p < .001$). Thus, the financial threat manipulation elicited a significantly stronger sense of financial threat compared to the control condition.

Medical Coverage. Using a general linear model (GLM) approach, experimental condition was entered as a categorical variable and childhood resources (or current resources) were entered as a centered, continuous variable. Desire for insurance served as the dependent variable.

We first examined the influence of current resources on desire for insurance. Results revealed no main effect of financial threat ($p = .74$). As expected, however, there was a main effects of current resources. Having more resources in adulthood was associated with a greater likelihood of buying insurance ($F(1, 138) = 5.46$, $p = .021$). There was no interaction with current resources and financial threat ($p = .78$).

We next examined the effect of childhood resources. Once again, higher childhood resources were associated with greater likelihood of insurance purchase ($F(1, 138) = 7.32$, $p = .008$). Importantly and consistent with H1, the main effect of childhood resources was qualified by a significant financial threat by childhood resources interaction ($F(1, 136) = 4.45$, $p = .037$). This interaction effect remained even when controlling for current resources, as well as controlling for participants' age and gender ($F(1, 133) = 5.57$, $p = .020$).

To test H1, we examined the relation between childhood resources and desire for medical coverage in each of the two experimental conditions. As seen in Figure 1, in the control condition, there was no relation between childhood resources and desire for

medical coverage (β = .04, p = .71). However, in the financial threat condition, people from wealthier backgrounds indicated a significantly greater desire for medical coverage (β = .39, p < .001). Thus, supporting H1, childhood resources had a positive effect on desire for medical coverage, whereby this effect was amplified by conditions of financial threat.

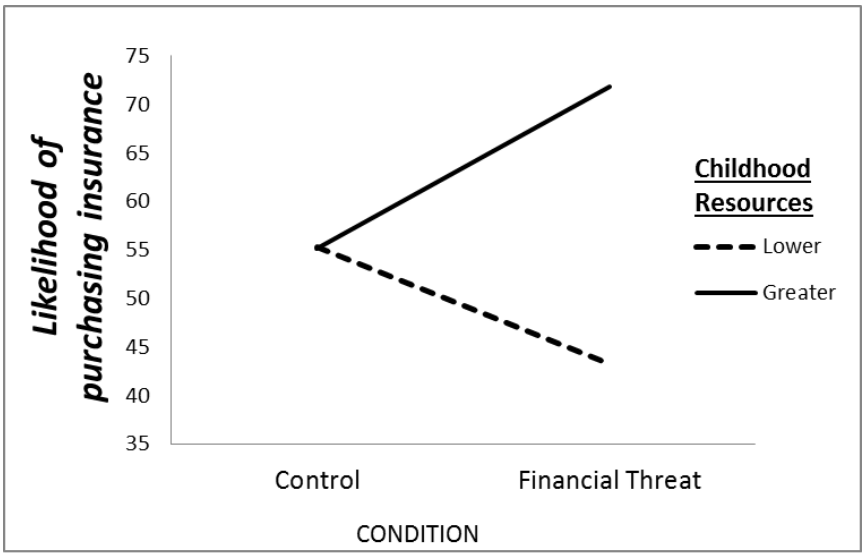


Figure 1. Effect of childhood resources on desire for health insurance in control and financial threat conditions (Study 1). Graphed means represent 1 SD above and below the mean of childhood resources.

Additional Analyses. We also conducted two types of additional analyses by probing the interaction using spotlight analyses (Aiken and West 1991; Irwin and McClelland 2001) and floodlight analyses (Spiller et al. 2013). Spotlight analyses tested the effect of financial threat for participants at 1 SD above and at 1 SD below the mean of childhood resources. Results showed that financial threat led people from poor childhoods (1SD below the mean of childhood resources) to indicate lower desire for

medical coverage in the threat condition compared to the control condition ($t(133) = -1.40$, $p = .16$). In contrast, financial threat led individuals from wealthy childhoods (1 SD above the mean of childhood resources) to indicate a greater desire for medical coverage ($t(133) = 1.94$, $p = .055$).

We next conducted floodlight analyses, which probe interactions for simple effects at a continuous range of the moderator, rather than relying on an arbitrary fixed level of the moderator (typically +/- 1 SD; Spiller et al. 2013). Thus, we sought to identify the levels of childhood resources at which the effect of financial threat on desire for medical coverage is statistically significant based on a two-tailed p-value of 0.05. Results revealed that people who reported childhood resources at or above 6.81 (approximately 1.06 SDs above the mean) had a significant increase in desire for medical coverage in the financial threat compared to control condition ($B_{JN} = 17.62$, $SE = 8.91$, $p = .05$). In contrast, people who reported childhood resources at or below 2.36 (approximately 2.12 SDs below the mean), had a significant decrease in desire for medical coverage in the financial threat compared to the control condition ($B_{JN} = -28.08$, $SE = 14.19$, $p = .05$).

In summary, Study 1 showed that childhood SES had a positive effect on desire for health coverage, whereby higher resources in childhood predicted a greater desire for health coverage. Consistent with our model, the effect of childhood environment on desire for health coverage was amplified by conditions of financial threat. It was precisely when adults experienced a financial threat that their childhood environment strongly predicted their desire for medical coverage in adulthood.

STUDY 2

Study 2 sought to conceptually replicate the findings from Study 1. Study 1 showed that individuals from poorer backgrounds desired less health coverage in the face of financial threat compared to those from wealthier backgrounds. According to our model, financial threat leads people from poorer backgrounds to decrease their desire for health insurance because they are more willing to take risk. However, an alternate possibility is that financial threat might make the financial costs associated with buying health insurance more salient, leading individuals with lower childhood resources to forego insurance.

To test for this alternate possibility, Study 2 examined what happens when the cost of purchasing health insurance is not financial. Rather than buying health insurance by using money, people were asked about their willingness to buy health insurance using time. For example, how many hours per month would a person be willing to volunteer to receive health insurance? Asking people about their willingness to volunteer time for health insurance is akin to asking them about their desire for health insurance. The more someone desires health insurance, the more hours they should be willing to volunteer to receive it. If the findings from Study 1 are driven by financial threat making financial costs more salient, we should not observe the same pattern of results with time as we did with money in Study 1. According to our model, however, we expect that time should show a similar pattern of results as money.

Method

Participants and Study Design. One-hundred and eighty four respondents (60% female, M_{age} = 34.6, SD = 11.3) from an online subject pool participated in exchange for a small monetary payment. The respondents were randomly assigned to one of two between-subjects conditions: financial threat and control.

Procedure. Experimental manipulations for financial threat and control conditions were identical to those used in Study 1. As in Study 1, participants in the financial threat condition listed three indicators of increasing threat in the economy. Those in the control condition listed three indicators of economic stability. Childhood and current resources were measured using the same items as in Study 1.

Medical Coverage. The study sought to measure people's desire for health insurance when the cost of purchasing was not financial. Participants, therefore, considered a scenario in which they could buy health coverage in exchange for volunteering time for community service. Specifically, after the experimental manipulation, each participant saw:

> Imagine that you currently do not have health coverage. The only way you can get health coverage is in exchange for volunteering time for community service. That is, you cannot pay money for health insurance but can volunteer a specific number of hours each month. Given this situation, what is the maximum number of hours per month you are willing to volunteer in order to get health coverage?

The responses were recorded on a slider scale that ranged from 0 to 75 hours. The end points were chosen so that the midpoint of the scale roughly corresponded to the national average monthly premium of $328 offered by the Affordable Care Act health

exchanges based on a conversion rate of $10 per hour of service (U.S. Department of Health and Human Services 2013). This conversion rate is commonly used across counties in the U.S. where community service is accepted in lieu of monetary amounts (e.g., Miami County Municipal Court 2016).

Results

Manipulation Check. The level of financial threat elicited by the manipulations was assessed using the same items as Study 1. Findings showed that participants in the financial threat condition felt a significantly greater financial threat (M = 5.57, SD = 1.24) compared to the control condition (M = 4.53, SD = 1.45; $t(182) = 5.23$, $p < .001$).

Medical Coverage. We first examined the influence of current resources on the number of hours people are willing to volunteer to receive health insurance. Results revealed no main effect of current resources ($p = .13$) or financial threat ($p = .90$). Furthermore, there was no significant interaction of current resources with financial threat ($p = .13$).

We next examined the effect of childhood SES. The pattern of results was consistent with that in Study 1. Analyses revealed no main effect of childhood resources ($p = .34$). However, consistent with H1, there was a significant financial threat by childhood resources interaction ($F(1, 180) = 6.33$, $p = .013$). This interaction effect remained even when controlling for participants' current resources, age, and gender ($F(1, 177) = 5.09$, $p = .025$).

To test H1, we next examined the pattern of effects for desire for health coverage in each of the two experimental conditions (see Figure 2). In the control condition, there

was no significant relation between childhood resources and desire for health insurance (β = -.12, p = .24). However, in the financial threat condition, people from wealthier childhoods were willing to volunteer significantly more number of hours per week in exchange for health coverage (β = .25, p = .016). Thus, the pattern of effects mirrored that in Study 1.

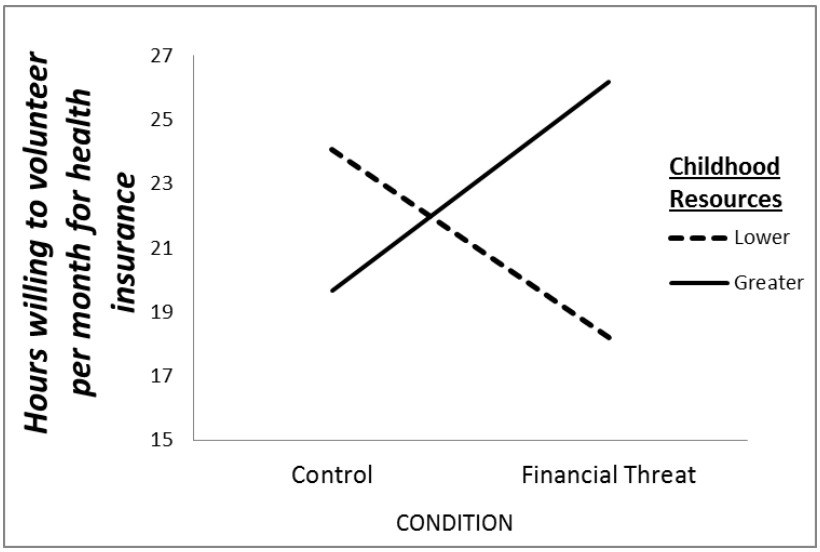


Figure 2. Effect of childhood resources on willingness to volunteer time in exchange for medical coverage (Study 2). Graphed means represent 1 SD above and below the mean of childhood resources.

Spotlight analyses revealed that financial threat led people from wealthier childhoods (1 SD above the mean of childhood resources) to indicate that they are willing to volunteer more hours to get health insurance (t(180) = 1.88, p = .06). In contrast, financial threat led individuals from poorer childhoods (1SD below the mean of childhood resources) to indicate that they are willing to volunteer fewer hours to get health insurance (t(180) = -1.69, p = .09).

Floodlight analysis revealed that people who reported childhood resources at or above 6.66 (approximately 1.12 SDs above the mean), had a significant increase in desire for medical coverage in the presence of financial threat (B_{JN} = 7.28, *SE* = 3.69, *p* = .05). In contrast, people who reported childhood resources at or below 3.53 (approximately 1.39 SDs below the mean), had a significant decrease in desire for medical coverage in conditions of financial threat (B_{JN} = -8.27, *SE* = 4.19, *p* = .05).

Discussion

In summary, Study 2 conceptually replicated the findings from Study 1. Experiencing financial threat once again led adults who had relatively more resources during childhood to have a greater desire for health coverage. The same pattern of findings was obtained despite using a non-financial cost for getting health coverage, as reflected by the number of hours people were willing to volunteer to receive health coverage.

STUDY 3

Study 3 sought to conceptually replicate and extend the findings from Studies 1 and 2. First, Study 3 sought to rule out negative affect as a possible alternative explanation by comparing the effect of the financial threat condition to a control condition that elicited similar levels of negative affect. We predicted that the effect of childhood environment should be amplified by financial threat and not by negative affect in general. Consistent with H1 and the findings in Studies 1 and 2, we also predicted that childhood resources should have a positive effect on desire for medical coverage,

whereby higher resources in childhood should predict a greater desire for medical coverage.

Second, Study 3 included measures of people's current health. Because individuals from disadvantaged backgrounds tend to have poorer health (Adler and Newman 2002; Cohen et al. 2010), we controlled for the influence of current health status on desire for health coverage.

Finally, Study 3 examined the psychological mechanism for how childhood resources influence desire for medical coverage. Consistent with H2, we predicted that the effect of childhood resources on desire for medical coverage should be statistically mediated by health risk propensity. This means that financial threat should lead people from poor and wealthy childhoods to differ in their willingness to seek health coverage because the threat alters their willingness to engage in risky behavior.

Method

Participants and Study Design. One-hundred and twenty U.S. respondents (60% female, M_{age} = 34.3, SD = 11.9) from an online subject pool participated in exchange for a small monetary payment. The study had two between-subjects experimental conditions: financial threat and control. In addition, childhood and current resources were measured using the same items as in Study 1.

Financial Threat. In the financial threat condition, participants once again listed three indicators of increasing threat in the economy. In the control condition, participants listed three unpleasant events that they had experienced in the past year. To ensure that both manipulations produced similar levels of negative affect, the manipulations were

pre-tested with a separate sample of one-hundred participants (59% female, M_{age} = 35.2, SD = 12.6) drawn from the same population. Participants were randomly assigned to one of the two conditions. Then, to assess the level of affect elicited by the manipulations, participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegen 1988). Participants also indicated the level of financial threat elicited by the manipulations by responding to the same two manipulation check items as in Studies 1 and 2.

Results on the pre-test showed no difference in either negative affect ($M_{Control}$ = 14.01 vs. M_{Threat} = 14.25, p = .65) or positive affect ($M_{Control}$ = 24.02 vs. M_{Threat} = 26.00, p = .28) between the two experimental conditions. Participants in the financial threat condition also indicated feeling greater financial threat (M = 5.59, SD = 1.20) compared to participants in the control condition (M = 4.89, SD = 1.08; $t(98)$ = 3.06, p = .003). Thus, the financial threat condition elicited a significantly higher degree of financial threat compared to the control condition, but the two conditions did not differ in the level of affect they elicited.

Medical Coverage. To assess desire for medical coverage, participants indicated their willingness to pay (WTP) for a health insurance plan adapted from previous work (Johnson et al. 1993; Hsee and Kunreuther 2000). Specifically, participants responded to the following question: "Imagine that you do not currently have health insurance and are looking to buy a new policy. What is the maximum you are willing to pay per month for a health insurance plan (in dollars)?" The responses were recorded on slider scale that

ranged from $0 to $750, making the end points equivalent to the end points used in Study 1 (0 to 75 hours) based on a conversion rate of $10 per hour of service.

Health Risk Propensity. To test for the hypothesized mediating mechanism, participants indicated their willingness to take risks related to health. To assess this construct, we relied on a validated 6-item scale for assessing "health and safety risk" (Blais and Weber 2006). Participants indicated their likelihood of engaging in six behaviors if they were to find themselves in that situation: "Drinking heavily at a social function", "Engaging in unprotected sex", "Driving a car without wearing a seat belt", "Riding a motorcycle without a helmet", "Sunbathing without sunscreen", and "Walking home alone at night in an unsafe area of town." All responses were provided on a 7-point scale anchored at 1 (Extremely unlikely) to 7 (Extremely likely). Scores on the six items were summed to create a *health risk propensity* index ($\alpha = .63$).

Current Health. To control for the effects of people's current health, we measured participants' current health using the two-item health status scale (Moorman and Matulich 1993). Specifically, participants responded to the items: "please rate your overall health," and "how serious have your health problems been (reverse coded)." Responses were recorded on a 7-point scale (1 = poor; 7 = excellent). The two items were relatively highly correlated ($r = .49$, $p < .001$) and were averaged for the analyses.

Results

Medical Coverage. Results once again revealed no significant main effect of financial threat ($p = .09$). We first examined the influence of current resources on desire for insurance. As expected, having more resources in adulthood was associated with a

greater likelihood of buying insurance ($F(1, 118) = 13.2$, $p < .001$). However, there was no interaction with current resources and financial threat ($p = .78$).

We next examined the effect of childhood resources. Consistent with the findings in Study 1, higher childhood resources were associated with higher willingness to pay for health insurance ($F(1, 118) = 6.97$, $p = .010$). And again consistent with H1, the main effect of childhood resources was qualified by a significant financial threat by childhood resources interaction ($F(1, 116) = 14.44$, $p < .001$). This interaction effect remained significant even when controlling for current resources, as well as controlling for participants' age, current health, and gender ($F(1, 112) = 14.48$, $p < .001$).

To test H1, we examined the relation between childhood resources and desire for medical coverage in each of the two experimental conditions. As seen in Figure 3, in the control condition, there was no relation between childhood resources and desire for medical coverage ($\beta = -.14$, $p = .30$). However, in the financial threat condition, people from wealthier backgrounds indicated a significantly greater desire for medical coverage ($\beta = .48$, $p < .001$). Thus, supporting H1, childhood resources had a positive effect on desire for medical coverage, whereby this effect was amplified by conditions of financial threat.

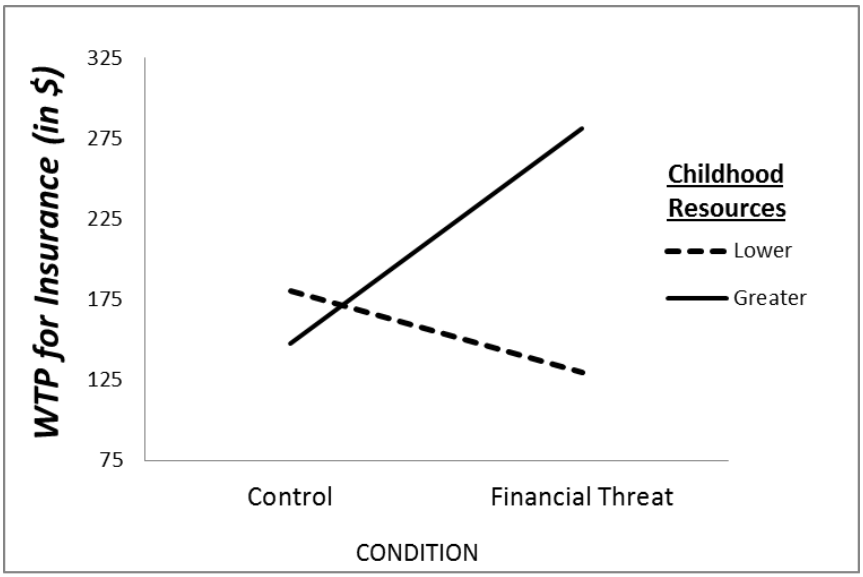


Figure 3. Effect of childhood resources on willingness to pay for a health insurance plan in control and financial threat conditions (Study 3). Graphed means represent 1 SD above and below the mean of childhood resources.

Additional Analyses. We also conducted spotlight and floodlight analyses. Spotlight analyses revealed that financial threat led people from poorer childhoods (1SD below the mean of childhood resources) to indicate a lower WTP for a health insurance plan in the threat condition compared to the control condition ($t(112) = -1.44$, $p = .15$). In contrast, financial threat led individuals from wealthier childhoods (1 SD above the mean of childhood resources) to indicate a higher WTP for a health insurance plan ($t(112) = 4.05$, $p < .001$).

Floodlight analysis revealed that people who reported childhood resources at or above 5.49 (approximately .04 SDs above the mean) indicated a significantly higher WTP for medical coverage in conditions of financial threat ($B_{JN} = 46.73$, $SE = 23.59$, $p = .05$). In contrast, people who reported childhood resources at or below 3.63

(approximately 1.33 SDs below the mean) indicated a significantly lower WTP for medical coverage in conditions of financial threat (B_{JN} = -80.45, *SE* = 40.60, p = .05).

Health Risk Propensity. We next tested how childhood resources and financial threat influenced health risk propensity. A GLM analysis revealed no main effect of childhood resources (p = .33) or financial threat (p = .60). However, there was a significant financial threat by childhood resources interaction ($F(1, 116) = 8.47$, p = .004). This interaction remained significant even when controlling for age, gender, health status, and current resources ($F(1, 112) = 5.66$, p = .019). Additionally, current resources had neither a main effect (p = .28), nor an interaction effect with financial threat (p = .75) on risk propensity.

We next examined the specific pattern of effects for health risk propensity. In the control condition, there was no relation between childhood resources and health risk propensity (β = .17, p = .21). However, in the financial threat condition, people from wealthier childhoods had a significantly lower health risk propensity (β = -.39, p = .002). Thus, the pattern of effects for health risk propensity mirrored the effects for willingness to pay for health insurance (see appendix for spotlight and floodlight analyses for risk propensity).

Mediation Analysis. We next tested whether the effect of childhood resources and financial threat on willingness to pay for health insurance is statistically mediated by changes in health risk propensity. Because this mediational effect should depend on childhood resources, the proper analysis is mediated moderation (Muller, Judd, and Yzerbyt 2005).

Using Hayes' (2013) macro and following the guidelines outlined in Zhao et al. (2010), we conducted a bootstrap test of the indirect effect of childhood resources and financial threat on WTP for health insurance, via risk-taking propensity. A 5000 resample bootstrap showed support for this indirect effect, $b = 10.25$, 95% CI [1.33, 26.22]. Because the confidence interval does not include 0, this indicates that the effect of childhood resources and financial threat on WTP for health insurance was statistically mediated by health risk propensity.

Discussion

In summary, Study 3 again showed that childhood resources had a positive effect on desire for health coverage, whereby higher resources in childhood predicted a greater willingness to pay for a health insurance plan. Consistent with our model and H1, the effect of childhood environment on desire for medical coverage was again amplified by conditions of financial threat. Furthermore, because the financial threat and the control conditions were designed to elicit similar levels of affect, Study 3 indicates that the effects are unlikely to be driven by affect alone.

Study 3 also tested a hypothesized psychological mechanism for how childhood SES influences desire for medical coverage. Consistent with H2, Study 2 found that the effect of childhood resources on desire for medical coverage was statistically mediated by health risk propensity. This suggests that people from poor versus wealthy childhoods differ their desire for health coverage in conditions of financial threat *because* they differ in their willingness to take risks related to health.

STUDY 4

Thus far we have shown that growing up poor is associated with reduced desire for medical coverage, especially in conditions of financial threat. Study 4 examined a condition when growing up poor might be associated with an *increased* desire for medical coverage. Based on our model, we hypothesized that childhood resources should have a very different effect on desire for health insurance when people are presented with base rates associated with getting sick. In fact, we predicted that when base rate is made salient, childhood resources should have an opposite effect on desire for medical coverage, whereby growing up poor should *increase* desire for medical coverage, especially in the face of financial threat. To test this possibility, Study 4 included conditions when a base rate was absent and when a base rate was present.

We predict that the pattern of effects in the base rate absent condition should be similar to the pattern observed in Studies 1-3. That is, we expect poorer childhood to be associated with a decreased desire for health insurance, especially under conditions of financial threat, when a base rate is absent. However, we expect this effect to be reversed in the base rate present condition. We predict that when the base rate is made salient, poorer childhood to be associated with an *increased* desire for health insurance, especially in response to financial threat.

Method

Participants and Study Design. Two-hundred and ninety eight participants (55% female, M_{age} = 35.7, SD = 12.3) were recruited from an online subject pool in exchange for a small monetary amount. The study had a 2 (Condition: Financial Threat vs. Control)

X 2 (Base Rate: Absent vs. Present) between-subjects design. Childhood and current resources were also measured as continuous variables.

Procedure. Participants were first randomly assigned to one of two between-subjects conditions: financial threat and control. We used the same experimental manipulations for financial threat and the control condition as in Studies 1 and 2. Participants in the financial threat condition listed three indicators of increasing threat in the economy, whereas those in the control condition listed three indicators of economic stability.

Following the manipulation, participants were told that the researchers were interested in people's views on health insurance. They were then randomly assigned to either the base rate absent or the base rate present condition. In the base rate absent condition, participants were asked to indicate their likelihood of buying health insurance using the same item as in Study 1. In the base rate present condition, prior to assessing participants' likelihood of buying health insurance using the same item, participants were first shown the prevalence of a disease (the base rate) based on established methods (Slovic 1977; Shoemaker and Kunreuther 1979). Specifically, participants saw:

> Below, you will see the chances of getting a disease for the general population. Based on this, please indicate your willingness to buy insurance against it. Assume that your current health care policy, if any, doesn't cover these expenses.
>
> <u>Disease ###:</u>
>
> Chances of getting this disease: 5%

The specific risk probability of 5% was chosen because it corresponds to the mid-point of the range of probabilities examined in previous health insurance research (Slovic 1977). The disease was unnamed to minimize effects of prior experiences or knowledge (Slovic 1977; Yan and Sengupta 2013). After seeing the risk associated with the disease, participants indicated their likelihood of buying health insurance. As in Study 1, responses were recorded on a slider scale ranging from "0 = not at all likely" to "100 = extremely likely." Childhood and current resources were measured using the same measure as in Studies 1-3. Participants' current health status was also assessed using the same measure as in Study 3.

Results

Medical Coverage. We first tested for a three-way interaction with condition (financial threat vs. control, between-subjects), base rate (absent vs. present, between-subjects), and childhood resources (continuous variable) as the predictors. Findings showed no main effects of childhood resources ($p = .11$), current resources ($p = .08$), or experimental condition ($p = .49$). However, analysis did reveal the expected three-way interaction between condition, base rate absent vs. present condition, and childhood resources, $F(1, 290) = 13.29$, $p < .001$. This means that financial threat and childhood resources had a significantly different effect when the base rate was present vs. when the base rate was absent. The three-way interaction remained significant even after controlling for respondents' age, gender, current resources, and health status, $F(1, 286) = 13.33$, $p < .001$.

To unpack the three-way interaction, we next analyzed the base rate absent and base rate present conditions separately. For the base rate absent condition, findings mirrored those from Studies 1-3, revealing the predicted financial threat by childhood resources interaction, $F(1, 146) = 8.45$, $p = .004$ (see Figure 4). To test H1, we examined the relation between childhood resources and desire for medical coverage in each of the two experimental conditions. Within the control condition, there was again no association between desire for health coverage and childhood resources ($\beta = -.02$, $p = .89$). However, there was a significant relation between desire for health coverage and childhood resources in the financial threat condition ($\beta = .44$, $p < .001$). The pattern suggests that individuals from wealthier backgrounds showed a greater desire for health coverage than those from poorer backgrounds in the financial threat condition.

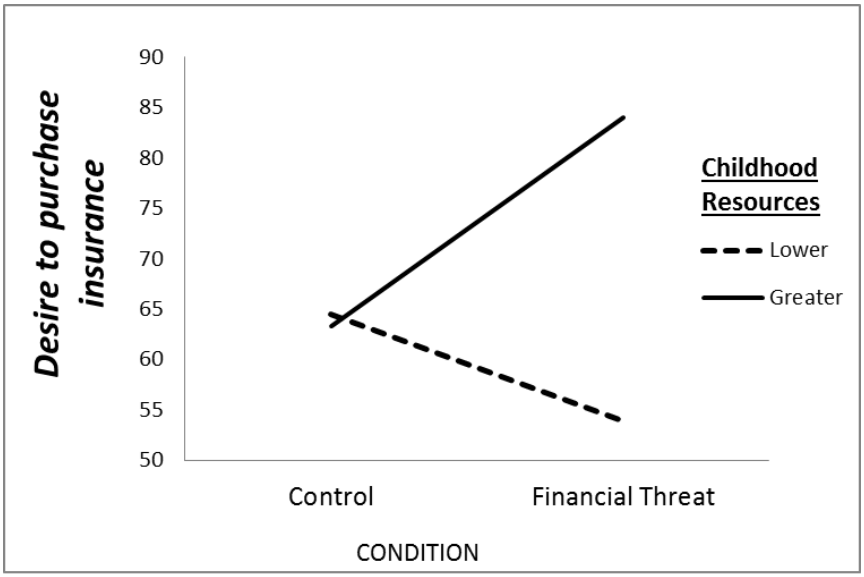


Figure 4. Effect of childhood resources on likelihood of purchasing health insurance when the base rate was absent (Study 4). Graphed means represent 1 SD above and below the mean of childhood resources.

For the base rate present condition, findings revealed a very different pattern of results. As predicted, there was a significant condition by childhood resources interaction, $F(1, 144) = 4.85$, $p = .029$ (see Figure 5). To test H3, we examined the relation between childhood resources and desire for medical coverage in each of the two experimental conditions. There was again no association between desire for health coverage and childhood resources in the control condition ($\beta = .08$, $p = .48$). However, there was a significant relation between desire for health coverage and childhood resources in the financial threat condition ($\beta = -.25$, $p = .030$), but this pattern was reversed from the base rate absent condition. When the base rate was made salient, individuals from *poorer* backgrounds indicated a *greater* desire for health coverage than those from wealthier backgrounds in the financial threat condition.

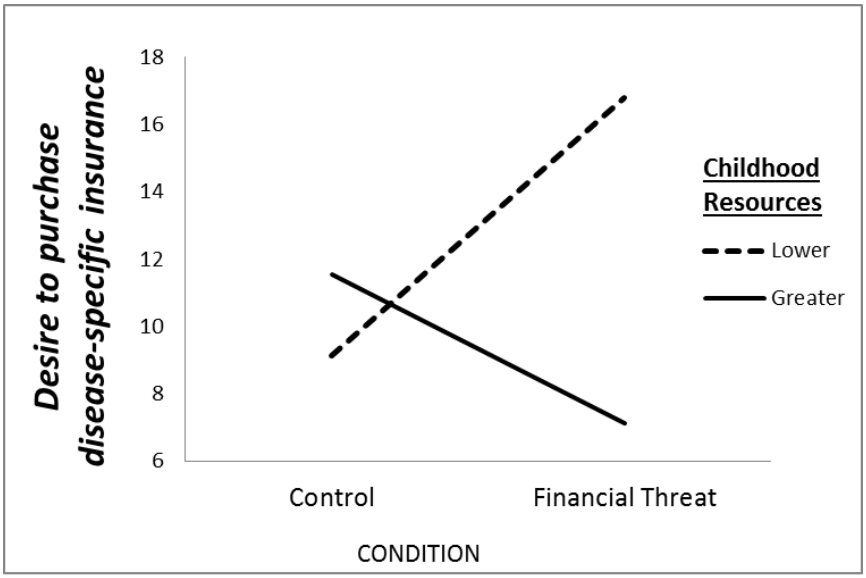


Figure 5. Effect of childhood resources on likelihood of purchasing health insurance when the base rate was present (Study 4). Graphed means represent 1 SD above and below the mean of childhood resources.

Additional Analyses. For the case when base rates were absent, spotlight analyses showed that financial threat led people from relatively poorer childhoods (1SD below the mean of childhood resources) to indicate *lower* desire for health coverage in the threat condition compared to the control condition, although this effect was not significant by conventional standards ($t(146) = -1.39$, $p = .16$). In contrast, financial threat led individuals from relatively wealthier childhoods (1 SD above the mean of childhood resources) to indicate a significantly *greater* desire for health coverage ($t(146) = 2.72$, $p = .007$).

Floodlight analyses revealed that people who reported childhood resources at or below 3.08 (approximately 1.53 SDs below the mean), had a significantly lower desire for health coverage in conditions of financial threat ($B_{JN} = -20.03$, $SE = 10.13$, $p = .05$). In contrast, people who reported childhood resources at or above 5.84 (approximately .37 SDs above the mean), had a significantly greater desire for health coverage in conditions of financial threat ($B_{JN} = 11.46$, $SE = 5.79$, $p = .05$).

For the case when base rates were present, spotlight analyses showed that financial threat led people from relatively poorer childhoods (1SD below the mean of childhood resources) to indicate *greater* desire for health coverage in the threat condition compared to the control condition ($t(144) = 1.97$, $p = .05$). In contrast, financial threat led individuals from relatively wealthier childhoods (1 SD above the mean of childhood resources) to indicate a somewhat lower desire for health coverage, although this effect was not significant by conventional standards ($t(144) = -1.15$, $p = .25$).

Floodlight analyses revealed that people who reported childhood resources at or below 3.78 (approximately 1.05 SDs below the mean), indicated a significantly greater desire for health coverage in conditions of financial threat (B_{JN} = 7.72, *SE* = 3.90, *p* = .05). However, the analyses could not find a region above the mean of childhood resources in which financial threat led to significant decrease in greater desire for health coverage (At childhood resources of 7, B_{JN} = -5.04, *SE* = 4.02, *p* = .21).

Discussion

In summary, Study 4 showed that childhood environment has a different effect on people's desire for health insurance depending on whether base rates are absent or present. Consistent with findings from Studies 1-3, in absence of base rates, individuals from wealthier environments indicated a greater desire for health insurance when facing financial threat. However, when the base rate was made salient, those from poorer backgrounds indicated a greater desire for health insurance.

STUDY 5

Study 5 sought to replicate the novel reversal effect found in Study 4.

Method

Participants and Study Design. One-hundred U.S. respondents (50% female, M_{age} = 35.2, SD = 12.3) from an online subject pool participated in exchange for a small monetary payment. The study had two between-subjects experimental conditions: financial threat and a control condition. Participants in the financial threat condition listed three indicators of increasing threat in the economy. Those in the control condition indicated three indicators that the economy is improving. Childhood SES and current

SES were measured using the same items as in Studies 1-4. In addition, current health status was also assessed using the same measure as in Studies 3 and 4.

Medical Coverage. After the manipulation, participants were told that the researchers were interested in people's views on health insurance. Participants were then shown the prevalence of a disease in the general population (the base rate) and were asked to indicate their likelihood of buying health insurance. Specifically, participants saw:

> Below, you will see the chances of getting a disease for the general population. Based on this, please indicate your willingness to buy insurance against it. That is, if you buy insurance, you wouldn't have to pay the medical expenses associated with the disease yourself. Assume that your current health care policy, if any, doesn't cover these expenses.
>
> Disease ###:
>
> Chances of getting this disease: 5%

After seeing the risk associated with the disease, participants indicated their likelihood of buying health insurance ("0 = not at all likely" to "100 = extremely likely.")

Results and Discussion

Results revealed no main effect of financial threat ($p = .96$), but a significant main effect of childhood resources ($F(1, 98) = 6.18$, $p = .015$). As predicted, more childhood resources were associated with a *lower* likelihood of buying insurance. Furthermore and consistent with H3, this main effect was qualified by a significant financial threat by childhood resources interaction ($F(1, 96) = 8.16$, $p = .005$). This interaction remained

significant even when controlling for participants' age, gender, health status, and level of current resources ($F(1, 92) = 7.33$, $p = .008$). Furthermore, there was neither a main effect, nor an interaction effect with financial threat for current resources (all ps > .44).

To test H3, we examined the relation between childhood resources and desire for medical coverage in each of the two experimental conditions. As seen in Figure 6, in the control condition, there was no relation between childhood resources and desire for medical coverage ($\beta = .01$, $p = .94$). However, in the financial threat condition, people from poorer backgrounds indicated a significantly *greater* desire for medical coverage ($\beta = -.48$, $p < .001$). Thus, supporting H3, childhood resources had a negative effect on desire for medical coverage, whereby this effect was amplified by conditions of financial threat.

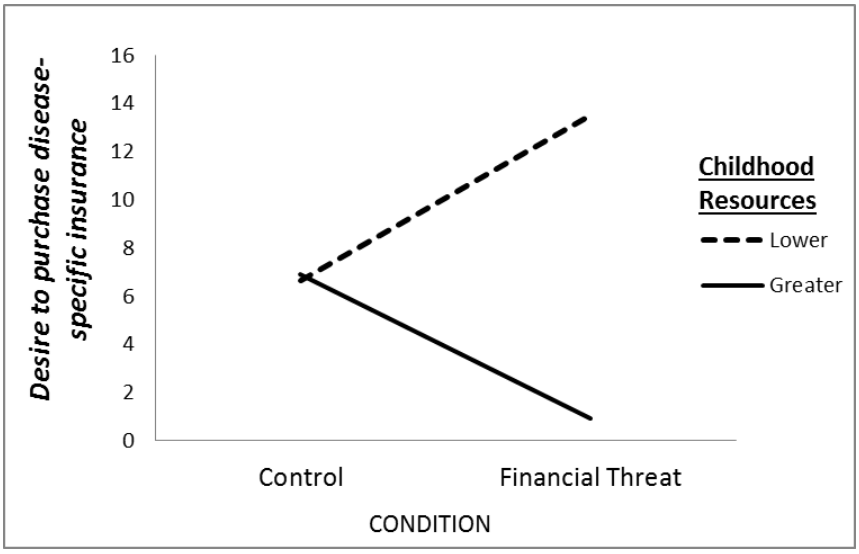


Figure 6. Effect of childhood resources on the likelihood of purchasing insurance against a specific disease in control and financial threat conditions when base rates about getting the disease are provided (Study 5). Graphed means represent 1 SD above and below the mean of childhood resources.

Additional Analyses. Findings from spotlight analyses showed that financial threat led people from relatively poor childhoods (1SD below the mean of childhood resources) to indicate *greater* desire for medical coverage in the threat condition compared to the control condition ($t(96) = 2.17$, $p = .033$). In contrast, financial threat led individuals from relatively wealthy childhoods (1 SD above the mean of childhood resources) to indicate a *lower* desire for medical coverage ($t(96) = -1.88$, $p = .06$).

Floodlight analyses revealed that people who reported childhood resources at or above 6.94 (approximately 1.09 SDs above the mean), had a significantly lower desire for health coverage in conditions of financial threat ($B_{JN} = -6.63$, $SE = 3.33$, $p = .05$). In contrast, people who reported childhood resources at or below 4.37 (approximately .83 SDs below the mean), had a significantly greater desire for health coverage in conditions of financial threat ($B_{JN} = 5.78$, $SE = 2.91$, $p = .05$).

STUDY 6

In Studies 4 and 5 we identified a condition when growing up poor is associated with *increased* desire for medical coverage. Specifically, when people saw base rates associated with a given disease, individuals from poorer childhoods indicated a greater desire for health insurance compared to those who grew up wealthier. Consistent with H3, this effect emerged most strongly in the financial threat condition. In Study 4 and 5, the reversal effect was tested using only one base rate (5%). Study 6 tested for possible boundary conditions of the effect by examining five different base rates ranging from low to high: 0.2%, 1%, 5%, 10%, and 25%.

Method

Participants and Study Design. One-hundred and thirty one participants (57% male, M_{age} = 32.6, SD = 11.7) were recruited from an online subject pool in exchange for a small monetary amount. The study had a 2 (Condition: Financial Threat vs. Control, between-subjects) X 5 (Base rates: 0.2%, 1%, 5%, 10%, 25%, within-subjects) mixed design. Childhood and current resources were continuous measures and assessed using the same items as in Studies 1-5.

Procedure. Participants were randomly assigned to one of two between-subjects conditions: financial threat and control. Experimental manipulations for financial threat and control conditions were identical to those used in Studies 1, 2, and 4. Participants in the financial threat condition listed three indicators of increasing threat in the economy, whereas those in the control condition listed three indicators of economic stability.

Medical Coverage. The goal of this study was to test people's desire for health insurance in response to a wider range of base rates. Participants therefore indicated the likelihood of buying health insurance for each of five diseases with base rates of 0.2%, 1%, 5%, 10%, and 25%, presented in a random order. The five base rates used are identical to those used in prior research that also intended to capture people's responses over a wide range of base rates (Slovic 1977). Participants indicated their likelihood of buying insurance against each of the five diseases on a slider scale ranging from "0 = not at all likely" to "100 = extremely likely." We also assessed participants' current health status as in previous studies.

Results

Medical Coverage. We first tested for a three-way interaction with condition (financial threat vs. control), base rate (0.2%, 1%, 5%, 10%, 25%), and childhood resources. Results did not reveal a significant three-way interaction, $F(1, 127) = 0.22$, $p = .64$. As seen in Figure 7, the pattern of findings were relatively similar across the different base rate conditions.

The key statistical analyses for each of the five base rates are reported in Table 1. As seen in Table 1, the predicted interaction with financial threat and childhood resources was obtained for all but one of the base rates, with 25% being the only base rate that did not yield an interaction. Similarly, in the financial threat condition, growing up poor significantly increased desire for health insurance for all but one of the base rates, with 25% being the only base rate that did not yield an effect.

Base rate	**Financial threat by Childhood Resources interaction**	**Relation between Childhood Resources and Likelihood of Buying Insurance in each Condition**	
		Control	**Financial Threat**
0.2%	$F(1, 127) = 6.20$, $p = .014$	$\beta = -.09$, $p = .448$	$\beta = -.38$, $p = .001$
1%	$F(1, 127) = 8.37$, $p = .004$	$\beta = .04$, $p = .731$	$\beta = -.37$, $p = .002$
5%	$F(1, 127) = 7.48$, $p = .007$	$\beta = .12$, $p = .342$	$\beta = -.32$, $p = .008$
10%	$F(1, 127) = 4.47$, $p = .037$	$\beta = .09$, $p = .703$	$\beta = -.26$, $p = .031$
25%	$F(1, 127) = 0.43$, $p = .511$	$\beta = .06$, $p = .606$	$\beta = -.05$, $p = .674$

Table 1. Key statistics for each of the five base rates used in Study 6.

Because the base rate condition did not yield a significant interaction, for further analyses we averaged people's responses for the five different base rates to form a single

desire for insurance index. Results using the composite index revealed no main effect of condition (p = .15) or childhood resources (p = .21). However, as predicted, we found a significant condition by childhood resources interaction, $F(1, 127) = 5.28$, p = .023. This effect remained significant even after controlling for age, gender, current resources, and current health, $F(1, 123) = 5.17$, p = .025. We also observed a significant main effect of current resources (p = .005), showing that people with more resources now were more likely to seek health coverage. However, the current resources by financial threat interaction was not significant (p = .37).

To test H3, we next examined the pattern of effects within each experimental condition. In the control condition, there was no relation between childhood SES and likelihood of buying health insurance, β = .079, p = .58. However, in the financial threat condition, people from poorer backgrounds were significantly *more* likely to get health coverage, β = -.29, p = .016. This is consistent with our prediction and the pattern of effects found in Studies 4 and 5.

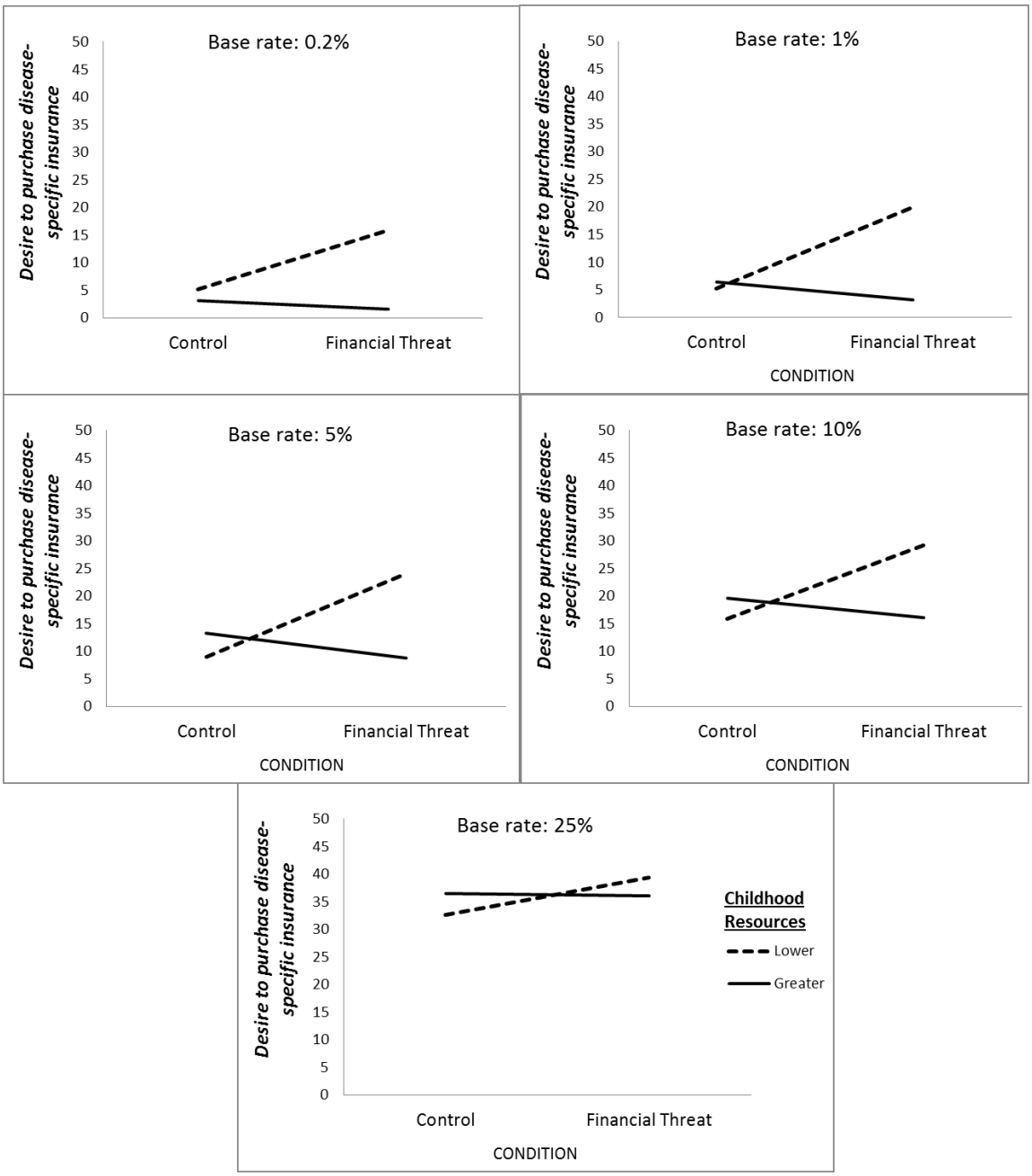


Figure 7. Effect of childhood resources on the likelihood of purchasing insurance at different levels of base rates across control and financial threat conditions (Study 6). Graphed means represent 1 SD above and below the mean of childhood resources.

Additional Analyses. We conducted additional analyses to further explore the effect of condition by childhood resources interaction on the likelihood index. Spotlight analyses showed that financial threat led people from relatively poor childhoods (1SD below the mean of childhood resources) to indicate *greater* likelihood of getting medical coverage in the financial threat condition compared to the control condition, $t(127) = 2.66$, $p = .009$. For individuals from relatively wealthy childhoods (1 SD above the mean of childhood resources) however, we did not observe a significant effect of financial threat on their likelihood of getting medical coverage $t(127) = -.59$, $p = .55$.

Floodlight analyses showed that people who reported childhood resources at or below 5.20 (approximately 0.11 SDs below the mean), indicated a significantly higher likelihood of getting health coverage during conditions of financial threat ($B_{JN} = 6.13$, $SE = 3.09$, $p = .05$). In contrast, people who reported childhood resources at or above 6.53 (approximately .90 SDs above the mean), indicated a lower likelihood of getting health coverage, although this effect did not reach significance at the conventional level for the range of childhood resources observed in this study (at childhood resources of 7, $B_{JN} = -3.53$, $SE = 4.97$, $p = .48$).

Discussion

In summary, Study 6 tested for possible boundary conditions of the reversal effect by examining five different base rates ranging from low to high: 0.2%, 1%, 5%, 10%, and 25%. Results showed that the reversal effect occurred when based rates were 0.2%, 1%, 5%, and 10%. However, the reversal effect was not obtained at 25%. This suggests that an upper boundary condition for the effects lies between a 10-25% base rate.

STUDY 7

Study 7 investigated the psychological mechanism for how childhood SES influences desire for health coverage when base rates are made salient. When people consider medical coverage in general, our model proposes that childhood SES influences desire for medical coverage through risk preferences, as document via mediational evidence in Study 3. However, when people consider medical coverage after seeing base rate information about disease, our model proposes that childhood SES should influence desire for medical coverage through perceptions of how likely a person is to get sick. The more likely people perceive that they are to get sick, the more willing they should be to seek medical coverage. Study 7 tested for this hypothesis (H4). We predicted that when base rates for disease are made salient, the effect of childhood SES on desire for medical coverage should be statistically mediated by perceptions of the likelihood of getting sick.

In addition, Study 7 also asked participants to indicate their level of resources by reporting their childhood and current household incomes, in addition to using the same measures as in Studies 1-6. We expected that measures of childhood income would be closely related to the validated measures of childhood resources used in Studies 1-6.

Method

Participants and Study Design. One-hundred and twenty-five U.S. respondents (52.8% female, M_{age} = 35.7, SD = 12.9) from an online subject pool participated in exchange for a small monetary payment. The study had two between-subjects conditions: financial threat and control.

Procedure. The procedure and materials were identical to those used in Study 5. This includes using the same experimental manipulation for financial threat and control conditions, and the same item to assess the likelihood of buying insurance. The only two differences in Study 7 were the addition of items to measure the hypothesized mediating mechanism and the addition of items measuring current and childhood household income.

Childhood Resources. In addition to assessing childhood and current resources via the same three items as in Studies 1-6, participants also indicated their childhood family household income and their current household income (e.g., Griskevicius et al. 2011a, 2013; Mittal and Griskevicius 2014). For childhood household income, participants responded to: "What was your household income when you were growing up?" Eight response options were provided: $15,000 or less, $15,001–$25,000, $25,001–$35,000, $35,001–$50,000, $50,001–$75,000, $75,001–$100,000, $100,001–$150,000, and $150,000 or more.

Median childhood household income was $35,001–$50,000. 20.8% of participants indicated a childhood household income of less than $25,000 and 14.4% indicated a childhood household income of more than $100,000. There was a sizable correlation between the 3-item measure of childhood SES used in Studies 1-6 and the childhood income measure ($r = .51$, $p < .001$). The two measures were standardized and averaged for subsequent analyses. (The pattern of results remained the same when each measure is used independently.)

Current household income was assessed by asking: "What is your current household income?" Participants were provided with the same response options as for

childhood income. Median current household income was $35,001–$50,000. 29.6% of participants indicated having a current household income of less than $25,000 and 9.6% indicated having a current household income of more than $100,000. Childhood family income and current household income were only modestly correlated (r = .21).

Health Risk Perceptions. In addition to indicating their likelihood of buying insurance against a disease (the dependent measure), participants also provided estimates of how likely they are to be affected by the disease. As in Study 5, all participants were provided with a base rate indicating that 5% of people in the population are affected by a disease. Following past work in health-risk perception (Raghubir and Menon 1998; Yan and Sengupta 2013), participants then indicated their own individual perceived likelihood of being affected by this disease. Participants answered this question before they indicated their desire for insurance. Responses were recorded on a 101-point scale ranging from "0 = not at all likely" to "100 = extremely likely."

Results

Medical Coverage. Results revealed no main effect of financial threat (p = .51) or of childhood resources (p = .21). However, consistent with H3, findings revealed the expected financial threat by childhood resources interaction ($F(1, 121) = 11.16$, p = .001). This interaction remained significant even when controlling for participants' age, gender, health status, and level of current resources ($F(1, 117) = 14.91$, $p < .001$). Furthermore, there was a marginally significant main effect of current resources (p = .07), showing that those who had more resources now were more likely to seek health coverage. However,

once again, there was no significant financial threat by current resources interaction (p = .69).

To test H3, we examined the relation between childhood resources and desire for medical coverage in each of the two experimental conditions. As seen in Figure 8, in the control condition, there was no relation between childhood resources and desire for medical coverage (β = .19, p = .13). However, in the financial threat condition, people from poorer backgrounds indicated a significantly *greater* desire for medical coverage (β = -.39, p < .001). Thus, replicating the findings in Studies 4-6 and supporting H3, childhood resources had a negative effect on desire for medical coverage, whereby this effect emerged in conditions of financial threat.

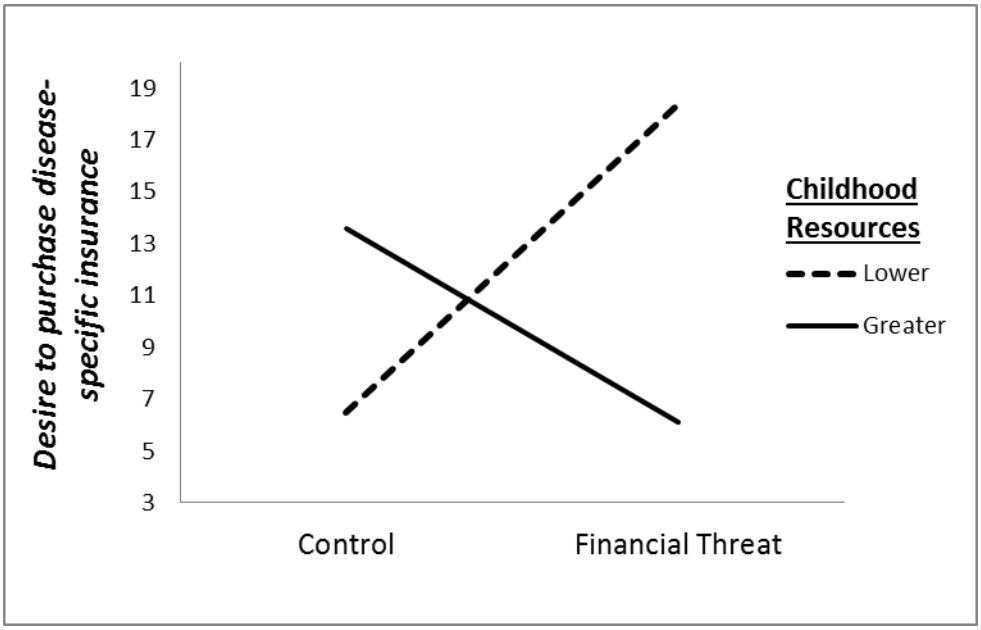


Figure 8. Effect of childhood resources on the likelihood of purchasing insurance against a specific disease in control and financial threat conditions when base rates about getting the disease are provided (Study 7). Graphed means represent 1 SD above and below the mean of childhood resources.

Additional Analyses for Medical Coverage. Findings from spotlight analyses showed that financial threat led people from relatively poor childhoods (1SD below the mean of childhood resources) to indicate *greater* desire for medical coverage in the financial threat condition compared to the control condition ($t(121) = 2.96$, $p = .004$). In contrast, financial threat led individuals from relatively wealthy childhoods (1 SD above the mean of childhood resources) to indicate a *lower* desire for medical coverage ($t(121) = -1.81$, $p = .07$).

Floodlight analyses revealed that people with childhood resources at or above .98 SDs from the mean had a significantly lower desire for health coverage in conditions of financial threat ($B_{JN} = -8.71$, $SE = 4.39$, $p = .05$). In contrast, people with childhood resources at or below .34 SDs from the mean, had a significantly greater desire for health coverage in conditions of financial threat ($B_{JN} = 6.05$, $SE = 3.06$, $p = .05$).

Health Risk Perceptions. For perceptions of getting sick, results revealed no main effect of condition ($p > .2$). But findings did show a main effect of childhood resources ($F(1, 123) = 6.17$, $p = .014$), whereby having more resources in childhood was associated with lower perceptions of getting sick. As seen in Figure 9, this main effect was qualified by a significant financial threat by childhood resources interaction ($F(1, 121) = 20.8$, $p < .001$). This interaction remained significant even when controlling for participants' age, gender, health status, and level of current resources ($F(1, 117) = 18.74$, $p < .001$). There was also a marginally significant main effect of current resources ($p = .058$), but there was no interaction effect of current resources with financial threat ($p = .87$).

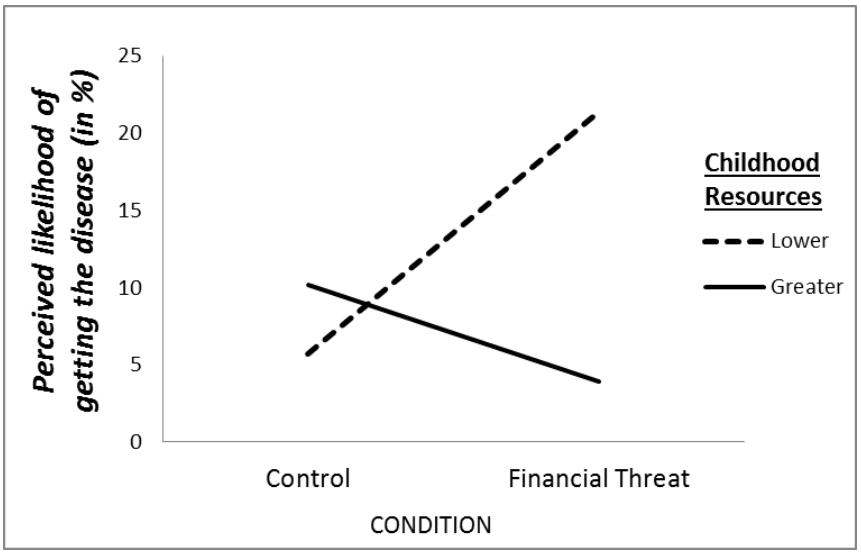


Figure 9. Effect of childhood resources on people's perceptions of getting a disease risk with a base rate of 5% (Study 7). Graphed means represent 1 SD above and below the mean of childhood resources.

Consistent with the findings for desire for health insurance, in the control condition there was no relation between childhood resources and perceptions being affected by the disease (β = 0.15, p = .26). In the financial threat condition, however, participants from low-SES childhoods indicated a significantly greater likelihood of being affected by the disease (β = -.47, p < .001).

Additional Analyses for Health Risk Perceptions. As described in the methods section, all participants were provided with a base rate indicating that 5% of people in the population are affected by a disease. We used spotlight analyses to examine people's exact perceptions of their likelihood of getting this disease in different conditions. Whereas people who grew up in high-SES environments (individuals at 1SD above the mean of childhood resources) perceived having a 10.2% likelihood of getting the disease in the control condition, they perceived having only a 3.9% likelihood of getting the

disease in the financial threat condition ($t(121) = -1.52$, $p = .13$). In contrast, whereas people who grew up in low-SES environments (1SD below the mean of childhood resources) perceived having a 5.7% likelihood of getting the disease in the control condition, they perceived having a 21.4% likelihood of getting the disease in the financial threat condition ($t(121) = 3.88$, $p < .001$).

Floodlight analyses revealed that people with childhood resources at or above 1.27 SDs from the mean significantly decreased their perceptions of health risk in conditions of financial threat ($B_{JN} = -9.46$, $SE = 4.78$, $p = .05$). In contrast, people with childhood resources at or below .09 SDs from the mean, significantly increased their perceptions of health risk in conditions of financial threat ($B_{JN} = 5.71$, $SE = 2.88$, $p = .05$).

Mediation. Figure 10 presents a visual depiction of the mediated moderation model. A 5000 resample bootstrap revealed an indirect effect of financial threat and childhood resources on desire for insurance via perceived risk, $b = -10.4$, 95% CI [-19.98, -4.03]. Because the confidence interval does not include 0, this indicates that the effect of financial threat on desire for insurance was statistically mediated by people's perceived risk of getting the disease.

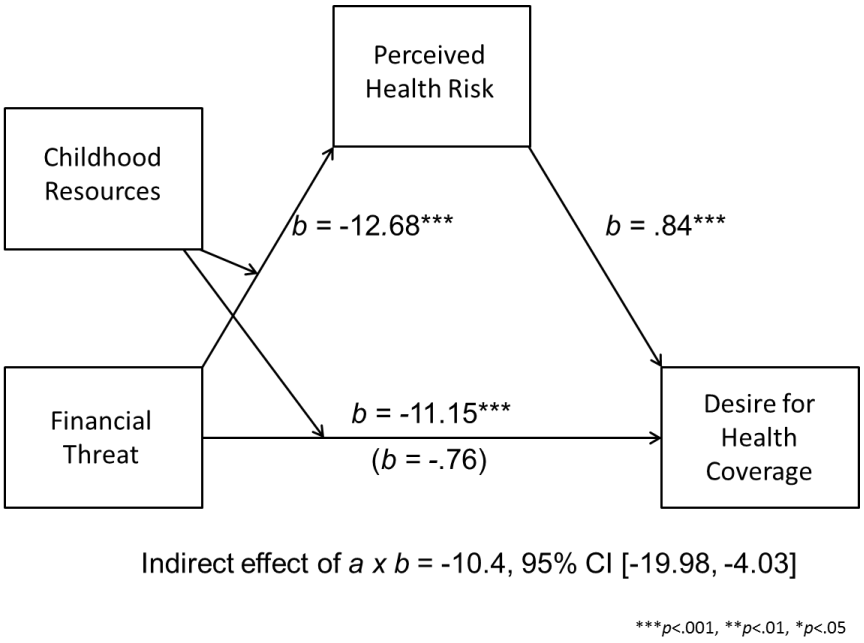


Figure 10. Mediated moderation model showing that the effect of childhood resources and financial threat on desire for health insurance is mediated by risk perception when the base rate information is present (Study 7).

Discussion

In summary, Study 7 replicated and extended the findings from Studies 4-6. When people were presented with base rates about disease, people who grew up poor once again had a higher desire for medical coverage compared to people who grew up wealthy. Consistent with our model and H3, this effect was again strongest in conditions of financial threat.

In addition, Study 7 provided evidence for the psychological mechanism driving this effect. When people considered health insurance after seeing base rate information about disease, their desire for health coverage was driven by their perceptions of how likely they were to get the disease. Even though all people were provided with a base rate

indicating that 5% of people in the population are affected by a disease, people who grew up poor perceived that they are more likely to get this disease compared to those who grew up wealthy. Whereas people who grew up wealthy perceived only a 3.9% chance of getting this disease in conditions of financial threat, those who grew up poor perceived a 21.4% chance of getting the same disease. Mediational evidence suggested that providing people with base rates about disease led people from low-SES childhoods to seek health insurance because they perceived that they are more likely to get sick.

GENERAL DISCUSSION

A series of experiments revealed that growing up poor can decrease *or* increase desire for health coverage. People who grew up poor were generally less interested in seeking medical coverage compared to people who grew up wealthy. This effect was independent of people's current ability to afford insurance and was strongest when adults felt a sense of current financial threat. In these conditions, childhood SES influenced adult desire for healthcare because people from wealthy childhoods were more risk-averse than those from poorer childhoods, which led them to seek health insurance. In fact, willingness to engage is risky behavior statistically mediated the effect of childhood environment on desire for health insurance.

Although people who grew up poor were generally less interested in health insurance, we uncovered a condition that reverses this effect: providing people with base rate information about health risks. When information about the average likelihood of getting sick was made available, people who grew up poor had a *greater* desire for medical coverage compared to those who grew up wealthy. Once again, this effect was

strongest in conditions of financial threat when people were stressed about their resources. The reason for the reversal effect stemmed from the fact that providing base rates changed the psychological mechanism driving how childhood SES influences health decisions. Instead of being driven by people's risk preferences, providing base rates led the effect to be driven by risk perceptions – people's perceptions of how likely they are to get sick. People who grew up poor perceived themselves as more likely to get sick compared to those who grew up wealthy, which statistically mediated their increased desire for health coverage.

Contributions and Implications

This research makes several contributions to the consumer behavior literature. First, this work contributes to our understanding of how childhood environment shapes consumer behavior.

Considerable research has examined how one's childhood environment influences consumer behavior in children and adolescents (Ward 1974; for a review see John 1999). Much of this work has investigated materialistic tendencies, finding that children's materialism is influenced by exposure to media (O'Guinn and Shrum 1997; Shrum, Burroughs, and Rindfleisch 2005), parents (Goldberg et al. 2003; Chaplin and John 2010; Richins and Chaplin 2015), peer interactions (Churchill and Moschis 1979; Achenreiner 1997; Roberts, Tanner, and Manolis 2008), family structure (Rindfleisch, Burroughs, and Denton 1997), and family communication (Moore and Moschis 1981).

Whereas prior work has mostly examined how childhood environment influences consumer behavior in children and adolescents, we add to an emerging stream of research

that considers how one's childhood environment can have long-lasting effects on decisions in adulthood (e.g. Connell et al. 2014; Richins and Chaplin 2015). Our findings suggest that specific types of early-life experiences, such as growing up in a wealthy versus poor environment, shape choices much later in life. Furthermore, we find that such choices in adulthood are influenced specifically by people's childhood SES and not their current adult SES. This suggests that the effects of childhood SES may be etched into our adult psychology, continuing to influence adult consumer decision-making regardless of one's socioeconomic situation later in life. These findings contribute to a growing literature on how consumer behavior is influenced by socioeconomic status and resource scarcity (Laran and Salerno 2013; Roux and Goldsmith 2014; Sharma and Alter 2012; Thompson, Banerji, and Hamilton 2015).

Second, we consistently found that the effect of childhood environment on desire for medical coverage emerged most strongly in conditions of financial threat. In fact, we did not observe a significant difference between people who grew up wealthy versus poor in the control condition in our studies. This overall pattern suggests that the nature of one's adult environment, such as adults' current sense of financial threat, may be an important catalyst for observing individual differences related to certain early-life experiences. Our findings are consistent with physiological research showing that early-life experience shapes the development of stress response systems, whereby adults respond to the same threats differently depending on their early-life environments (Del Giudice et al. 2011; McEwen 2012; Repetti et al. 2002; Taylor et al. 2004; Taylor 2010).

Our findings suggest that certain tendencies related to early-life experiences may manifest themselves only under conditions of financial threat in adulthood.

Third, this research contributes to the consumer health decision-making literature (Johnson et al. 1993; Block and Keller 1995; Hsee and Kunreuther 2000). The current studies are the first to show that childhood SES influences health risk perceptions (Menon, Raghubir, and Agrawal 2008). Risk perception plays a fundamental role in influencing health behavior (Brewer et al. 2007), yet surprisingly little is known about why people differ in their interpretation of the same risks (Barnett and Breakwell 2001). Our findings show that childhood experiences can shape how a person perceives a risk, leading some people to have higher estimates of their vulnerability to health risks (Menon, Kyung, and Agrawal 2009; Yan and Sengupta 2013).

Finally, given that health coverage choices for Americans are, more than ever, in the hands of consumers, this research has implications for policy makers and communicators who seek to motivate people to seek medical coverage. Consistent with the notion that adverse childhoods are associated with poor choices in adulthood, we find that growing up poor generally leads people to shun health coverage in adulthood, even when they might be able to afford it. But the current research suggests that a small change in communicating health messages to people from poor backgrounds can motivate them to seek health coverage. When people from low-SES backgrounds are provided with statistics (base rates) about the likelihood of getting sick, they became more motivated to seek health coverage. Seeing the likelihood of the typical person to get sick led people from low-SES backgrounds to increase their own perceptions of getting

sick in conditions of financial stress, thereby motivating them to seek health coverage. Thus, the current research suggests that communication related to health insurance might be more effective if the strategy is segmented by whether the audience grew up in high-SES versus low-SES conditions. Whereas higher-SES audiences should be more receptive to typical messages about purchasing health insurance, lower-SES audiences should be more receptive to messages about purchasing health insurance when they are presented with base rates about getting sick.

Conclusion

Millions of children grow up in households with few resources. In the U.S. alone, 25% of children live below the poverty line and 48% are considered to live in low-income households (Addy and Wight 2012). Growing up with limited resources, as reflected in a child's level of socioeconomic status (SES), is known to influence physical, socio-emotional, and cognitive development (Link and Phelan 1995; Shonkoff et al. 2012). But childhood SES also has longer lasting effects, such as by shaping decisions in adulthood. While the current studies focused on how childhood environment influences healthcare decisions, our model has implications for consumer behaviors beyond health. A central contribution of the current research is that it shows that childhood environment can influence risk perceptions. The perception of risk plays an important role in many consumer behaviors ranging from investing in the stock market to giving out personal information on the web. The current research serves as a foundation for examining the many ways in which childhood environment can impact consumer behavior in adulthood.

REFERENCES

Achenreiner, Gwen Bachmann (1997), "Materialistic Values and Susceptibility to Influence in Children," in *Advances in Consumer Research*, Vol. 24, ed. Merrie Brucks and Deborah J. MacInnis, Provo, UT: Association for Consumer Research, 82-88.

Adler, Nancy E. and Katherine Newman (2002), "Socioeconomic Disparities in Health: Pathways and Policies," *Health Affairs*, 21 (2), 60-76.

Aiken, Leona S. and Stephen G. West (1991), *Multiple Regression: Testing and Interpreting Interactions*, Thousand Oaks, CA: Sage.

American Psychological Association (2015), "Stress in America: Paying with our Health," Washington, DC.

Anderson, Lisa R. and Jennifer M. Mellor (2008), "Predicting Health Behaviors with an Experimental Measure of Risk Preference," *Journal of Health Economics*, 27 (5), 1260-74.

Arrow, Kenneth J. (1971), *Essays in the Theory of Risk-Bearing*, Chicago, IL: Markham Publishing Co.

Bagot, Rosemary C., Felisa N. van Hasselt, Danielle L. Champagne, Michael J. Meaney, Harm J. Krugers, and Marian Joëls (2009), "Maternal Care Determines Rapid Effects of Stress Mediators on Synaptic Plasticity in Adult Rat Hippocampal Dentate Gyrus," *Neurobiology of Learning and Memory*, 92 (3), 292-300.

Baicker, Katherine, William J. Congdon, and Sendhil Mullainathan (2012), "Health Insurance Coverage and Take-Up: Lessons from Behavioral Economics," *Milbank Quarterly*, 90 (1), 107-34.

Barnett, Julie and Glynis M. Breakwell (2001), "Risk Perception and Experience: Hazard Personality Profiles and Individual Differences," *Risk Analysis*, 21 (1), 171-77.

Belsky, Jay, Gabriel L. Schlomer, and Bruce J. Ellis (2011), "Beyond Cumulative Risk: Distinguishing Harshness and Unpredictability as Determinants of Parenting and Early Life History Strategy," *Developmental psychology*, 48 (3), 662-73.

Belsky, Jay, Laurence Steinberg, and Patricia Draper (1991), "Childhood Experience, Interpersonal Development, and Reproductive Strategy: An Evolutionary Theory of Socialization." *Child Development*, 62 (August), 647–70.

Blais, Ann-Renée and Elke U. Weber (2006), "A Domain-Specific Risk-Taking (DOSPERT) Scale for Adult Populations," *Judgment and Decision Making*, 1 (1), 33–47.

Block, Lauren G. and Poonam A. Keller (1995), "When to Accentuate the Negative: The Effects of Perceived Efficacy and Message Framing on Intentions to Perform a Health-Related Behavior," *Journal of Marketing Research*, 32 (2), 192-203.

Brady, Sonya S. and Karen A. Matthews (2002), "The Influence of Socioeconomic Status and Ethnicity on Adolescents' Exposure to Stressful Life Events," *Journal of Pediatric Psychology*, 27 (7), 575-83.

Brewer, Noel T, Gretchen B Chapman, Frederick X Gibbons, Meg Gerrard, Kevin D McCaul, and Neil D Weinstein (2007), “Meta-Analysis of the Relationship between Risk Perception and Health Behavior: The Example of Vaccination,” *Health Psychology*, 26 (2), 136.

Brumbach, Barbara Hagenah, Aurelio José Figueredo, and Bruce J. Ellis (2009), "Effects of Harsh and Unpredictable Environments in Adolescence on Development of Life History Strategies: A Longitudinal Test of an Evolutionary Model," *Human Nature*, 20 (1), 25-51.

Bundorf, Kate M. and Mark V. Pauly (2006), “Is Health Insurance Affordable for the Uninsured?” *Journal of Health Economics*, 25 (4), 650-73.

Camerer, Colin F. and Howard Kunreuther (1989), "Decision Processes for Low Probability Events: Policy Implications," *Journal of Policy Analysis and Management*, 8 (4), 565-92.

Champagne, Danielle L., Rosemary C. Bagot, Felisa van Hasselt, Ger Ramakers, Michael J. Meaney, E. Ronald De Kloet, Marian Joëls, and Harm Krugers (2008), “Maternal Care and Hippocampal Plasticity: Evidence For Experience-Dependent Structural Plasticity, Altered Synaptic Functioning, and Differential Responsiveness to Glucocorticoids and Stress,” *The Journal of Neuroscience*, 28 (23): 6037–45.

Chaplin, Lan Nguyen and Deborah Roedder John (2007), “Growing up in a Material World: Age Differences in Materialism in Children and Adolescents,” *Journal of Consumer Research*, 34 (December), 480–93.

Chaplin, Lan Nguyen and Deborah Roedder John (2010), "Interpersonal Influences on Adolescent Materialism: A New Look at the Role of Parents and Peers," *Journal of Consumer Psychology*, 20 (April), 176–84.

Chaplin, Lan Nguyen, Ronald P. Hill, and Deborah Roedder John (2014), "Poverty and Materialism: A Look at Impoverished Versus Affluent Children," *Journal of Public Policy & Marketing*, 33 (Spring), 78-92.

Chen, Edith (2004), "Why Socioeconomic Status Affects the Health of Children a Psychosocial Perspective," *Current Directions in Psychological Science*, 13 (June), 112-15.

Chen, Edith, Karen A. Matthews, and W. Thomas Boyce (2002), "Socioeconomic Differences in Children's Health: How and Why Do These Relationships Change with Age?" *Psychological Bulletin*, 128 (2), 295-329.

Chen, Edith, and Gregory E. Miller (2012), "'Shift-and-Persist' Strategies: Why Low Socioeconomic Status Isn't Always Bad for Health." *Perspectives on Psychological Science* 7 (March), 135–58.

Churchill, Gilbert A. and George P. Moschis (1979), "Television and Interpersonal Influences on Adolescent Consumer Learning," *Journal of Consumer Research*, 6 (1), 23–35.

Cohen, Sheldon, Denise Janicki-Deverts, Edith Chen, and Karen A. Matthews (2010), "Childhood Socioeconomic Status and Adult Health," *Annals of the New York Academy of Sciences*, 1186, 37-55.

Connell, Paul M., Merrie Brucks, and Jesper H. Nielsen (2014), “How Childhood Advertising Exposure can Create Biased Product Evaluations that Persist into Adulthood,” *Journal of Consumer Research*, 41 (1), 119–34.

de Meza, David and David C. Webb (2001), "Advantageous Selection in Insurance Markets," *The RAND Journal of Economics*, 32 (2), 249-62.

Del Giudice, Marco, Bruce J. Ellis, and Elizabeth A. Shirtcliff (2011), “The Adaptive Calibration Model of Stress Responsivity,” *Neuroscience and Biobehavioral Reviews*, 35 (7), 1562-92.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith (2013), “Income, Poverty, and Health Insurance Coverage in the United States: 2012,” U.S. Department of Commerce, Washington, DC: Government Printing Office.

Diener, Ed, and Robert Biswas-Diener (2002), "Will Money Increase Subjective Well-being?," *Social Indicators Research*, 57 (2), 119-69.

Duncan, Greg J., Mary C. Daly, Peggy McDonough, and David R. Williams (2002), “Optimal Indicators of Socioeconomic Status for Health Research,” *American Journal of Public Health*, 92 (7): 1151–57.

Ellis, Bruce J., Aurelio J. Figueredo, Barbara H. Brumbach, and Gabriel L. Schlomer (2009), “Fundamental Dimensions of Environmental Risk,” *Human Nature*, 20 (April), 204-68.

Ellis, Bruce J., Marco Del Giudice, Thomas J. Dishion, Aurelio José Figueredo, Peter Gray, Vladas Griskevicius, Patricia H. Hawley… David Sloan Wilson (2012),

"The evolutionary basis of risky adolescent behavior: implications for science, policy, and practice," *Developmental Psychology*, 48 (3), 598-623.

Evans, Gary W. (2004), "The Environment of Childhood Poverty," *The American Psychologist*, 59 (2), 77-92.

Fischhoff, Baruch, Roxana M. Gonzalez, Deborah A. Small, and Jennifer S. Lerner (2003), "Judged Terror Risk and Proximity to the World Trade Center," *Journal of Risk and Uncertainty*, 26 (2/3), 137- 51.

Frankenhuis, Willem E. and Marco Del Giudice (2012), "When Do Adaptive Developmental Mechanisms Yield Maladaptive Outcomes?" *Developmental Psychology*, 48 (3), 628-42.

Galobardes, Bruna, John W. Lynch, and George Davey Smith (2004), "Childhood Socioeconomic Circumstances and Cause-Specific Mortality in Adulthood: Systematic Review and Interpretation," Vol. 26, 7-21.

Goldberg, Marvin E., Gerald J. Gorn, Laura A. Peracchio, and Gary Bamossy (2003), "Understanding Materialism among Youth," *Journal of Consumer Psychology*, 13 (September), 278–88.

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 (February), 197–205.

Griskevicius, Vladas, Andrew W. Delton, Theresa E. Robertson, and Joshua M. Tybur (2011a), “Environmental Contingency in Life History Strategies: The Influence of Mortality and Socioeconomic Status on Reproductive Timing”, *Journal of Personality and Social Psychology*, 100 (February), 241–54.

Griskevicius, Vladas, Joshua M. Tybur, Andrew W. Delton, and Theresa E. Robertson (2011b), “The Influence of Mortality and Socioeconomic Status on Risk and Delayed Rewards: A Life History Theory Approach,” *Journal of Personality and Social Psychology*, 100 (6), 1015-26.

Hanoch, Yaniv, Joseph G. Johnson, and Andreas Wilke (2006), "Domain Specificity in Experimental Measures and Participant Recruitment: An Application to Risk-Taking Behavior," *Psychological Science*, 17 (4), 300-04.

Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York: Guilford.

Hill, Elizabeth M., Jessica Jenkins, and Lisa Farmer (2008), "Family Unpredictability, Future Discounting, and Risk Taking," *Journal of Socio-Economics*, 37 (4), 1381-96.

Hill, Sarah E., Christopher D. Rodeheffer, Danielle J. DelPriore, and Max E. Butterfield (2013), "Ecological Contingencies in Women's Calorie Regulation Psychology: A Life History Approach," *Journal of Experimental Social Psychology*, 49 (5), 888-97.

Horton, Richard (2009), "The Global Financial Crisis: An Acute Threat to Health," *The Lancet*, 373 (9661), 355-56.

Hsee, Christopher K. and Howard C. Kunreuther (2000), "The Affection Effect in Insurance Decisions," *Journal of Risk and Uncertainty*, 20 (2), 141-59.

Irwin, Julie R. and Gary H. McClelland (2001) “Misleading Heuristics and Moderated Multiple Regression Models,” *Journal of Marketing Research*, 38 (February), 100–09.

Jensen, Eric W., Sherman A. James, W. Thomas Boyce, and Sue A. Hartnett (1983), “The Family Routines Inventory: Development and Validation,” *Social Science & Medicine*, 17 (4), 201-11.

John, Deborah Roedder (1999), “Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research,” *Journal of Consumer Research*, 26 (December), 183–213.

Johnson, Eric J., John Hershey, Jacqueline Meszaros, and Howard Kunreuther (1993), "Framing, Probability Distortions, and Insurance Decisions," *Journal of Risk and Uncertainty*, 7 (1), 35-51.

Keller, Punam Anand, Isaac M. Lipkus, and Barbara K. Rimer (2002), “Depressive Realism and Health Risk Accuracy: The Negative Consequences of Positive Mood,” *Journal of Consumer Research*, 29 (1), 57–69.

Klein, Cynthia T. F. and Marie Helweg-Larsen (2002), “Perceived Control and the Optimistic Bias: A Meta-Analytic Review,” *Psychology & Health*, 17 (4), 437-46.

Kunreuther, Howard (1996), “Mitigating Disaster Losses through Insurance,” *Journal of Risk and Uncertainty*, 12 (2/3), 171-87.

Kunreuther, Howard and M. V. Pauly (2006), "Insurance Decision Making and Market Behavior," *Foundations and Trends in Microeconomics*, 1 (2), 63-127.

Laran, Juliano and Anthony Salerno (2013), "Life-history Strategy, Food Choice, and Caloric Consumption," *Psychological Science,* 24 (February), 167–73.

Lejuez, C. W., Jennifer P. Read, Christopher W. Kahler, Jerry B. Richards, Susan E. Ramsey, Gregory L. Stuart, David R. Strong, and Richard A. Brown (2002), "Evaluation of a Behavioral Measure of Risk Taking: The Balloon Analogue Risk Task (Bart)," *Journal of Experimental Psychology: Applied*, 8 (2), 75-84.

Levy, Helen and Thomas DeLeire (2008), "What Do People Buy When They Don't Buy Health Insurance and What Does That Say About Why They Are Uninsured?," *Inquiry*, 45 (4), 365-79.

Lichtenstein, Sarah and Paul Slovic (1971), "Reversals of Preference between Bids and Choices in Gambling Decisions," *Journal of Experimental Psychology,* 89 (1), 46-55.

Lichtenstein, Sarah and Paul Slovic (1973), "Response-Induced Reversals of Preference in Gambling: An Extended Replication in Las Vegas," *Journal of Experimental Psychology*, 101 (1), 16-20.

Lin, Ying Ching, C. Lin, and Priya Raghubir (2003), "Avoiding Anxiety, Being in Denial or Simply Stroking Self-Esteem: Why Self-Positivity?" *Journal of Consumer Psychology,* 13, 464-477.

Link, Bruce G., and Jo C. Phelan (1995), "Social Conditions as Fundamental Causes of Disease," *Journal of Health and Social Behavior*, Special Issue, 80-94.

Marjanovic, Zdravko, Esther R. Greenglass, Lisa Fiksenbaum, and Chris M. Bell (2013), “Psychometric evaluation of the Financial Threat Scale (FTS) in the context of the great recession,” *Journal of Economic Psychology*, 36, 1–10.

Matheny, Adam P., Theodore D. Wachs, Jennifer L. Ludwig, and Kay Phillips (1995), “Bringing Order out of Chaos: Psychometric Characteristics of the Confusion, Hubbub, and Order Scale,” *Journal of Applied Developmental Psychology*, 16 (3), 429-44.

McEwen, Bruce S. (2012), “Brain on Stress: How the Social Environment Gets under the Skin,” *Proceedings of the National Academy of Sciences*, 109 (Suppl. 2), 17180-85.

McEwen, Bruce S., and Eliot Stellar (1993), “Stress and the Individual: Mechanisms Leading to Disease,” Archives of Internal Medicine, 153 (18), 2093-101.

McKenna, Frank P. (1993), “It Won't Happen to Me: Unrealistic Optimism or Illusion of Control?” *British Journal of Psychology*, 84 (1), 39-50.

Mechanic, David and Paul D. Cleary (1980), "Factors Associated with the Maintenance of Positive Health Behavior," *Preventive Medicine*, 9 (6), 805-14.

Menon, Geeta, Lauren G. Block, and Suresh Ramanathan (2002), “We’re at as Much Risk as We Are Led to Believe: Effects of Message Cues on Judgments of Health,” *Journal of Consumer Research*, 28 (4), 533–49.

Menon, Geeta, Ellie J. Kyung, and Nidhi Agrawal (2009), “Biases in Social Comparisons: Optimism or Pessimism,” *Organizational Behavior and Human Decision Processes*, 108 (1), 39–52.

Menon, Geeta, Priya Raghubir, and Nidhi Agrawal (2007), "Health Risk Perceptions and Consumer Psychology," in *The Handbook of Consumer Psychology*, ed. Curt Haugtvedt, Paul Herr, and Frank Kardes, Hillsdale, NJ: Erlbaum, 981–1010.

Miami County Municipal Court (2016), "Community Service," https://oh-miamicounty.civicplus.com/index.aspx?NID=304.

Miller, Gregory E., Edith Chen, Alexandra K. Fok, Hope Walker, Alvin Lim, Erin F. Nicholls, Steve Cole, and Michael S. Kobor (2009), "Low Early-Life Social Class Leaves a Biological Residue Manifested by Decreased Glucocorticoid and Increased Proinflammatory Signaling," *Proceedings of the National Academy of Sciences*, 106 (34), 14716–21.

Minsky, Hyman P. (1986), *Stabilizing an Unstable Economy*, New Haven, CT: Yale University Press.

Mittal, Chiraag and Vladas Griskevicius (2014), "Sense of Control under Uncertainty Depends on People's Childhood Environment: A Life History Theory Approach," *Journal of Personality and Social Psychology*, 107 (October), 621-37.

Mittal, Chiraag, Vladas Griskevicius, Jeffry A. Simpson, Sooyeon Sung, and Ethan Young (2015), "Cognitive Adaptations to Stressful Environments: When Childhood Adversity Enhances Adult Executive Function," *Journal of Personality and Social Psychology*, 109 (4), 604 – 21.

Moore, Roy L. and George P. Moschis (1981), "The Role of Family Communication in Consumer Learning," *Journal of Communications*, 31 (4), 42–51.

Moorman, Christine and Erika Matulich (1993), "A Model of Consumers' Preventative Health Behaviors: The Role of Health Motivation and Health Ability," *Journal of Consumer Research*, 20 (September), 208–228.

Moss, Justin H., and Jon K. Maner (2014), "The Clock Is Ticking: The Sound of a Ticking Clock Speeds up Women's Attitudes on Reproductive Timing," *Human Nature*, 25 (3), 328–41.

Mossin, Jan (1968), "Aspects of Rational Insurance Purchasing," *The Journal of Political Economy*, 76 (4), 553-68.

Muller, Dominique, Charles M. Judd, and Vicent Y. Yzerbyt (2005), "When moderation is mediated and mediation is moderated," *Journal of Personality and Social Psychology*, 89 (6), 852-63.

Nicholson, Nigel, Emma Soane, Mark Fenton-O'Creevy, and Paul Willman (2005) "Personality and Domain-Specific Risk Taking," *Journal of Risk Research*, 8 (2), 157-76.

O'Guinn, Thomas C. and L. J. Shrum (1997), "The Role of Television in the Construction of Consumer Reality," *Journal of Consumer Research*, 23 (March), 278–94.

Pampel, Fred C., Patrick M. Krueger, and Justin T. Denney (2010), "Socioeconomic Disparities in Health Behaviors," *Annual Review of Sociology*, 36 (1): 349–70.

Perloff, Linda S. and Barbara K. Fetzer (1986), "Self-Other Judgments and Perceived Vulnerability to Victimization," *Journal of Personality and Social Psychology*, 50 (March), 502-10.

Petrolia, Daniel R., Craig E. Landry, and Keith H. Coble (2013), “Risk Preferences, Risk Perceptions, and Flood Insurance,” *Land Economics*, 89 (2), 227–45.

Pollitt, Ricardo A., Kathryn M. Rose, and Jay S. Kaufman (2005), "Evaluating the Evidence for Models of Life Course Socioeconomic Factors and Cardiovascular Outcomes: A Systematic Review," *BMC Public Health*, 5, 7.

Raghubir, Priya, and Geeta Menon (1998), “AIDS and Me, Never the Twain Shall Meet: Factors Affecting Judgments of Risk,” *Journal of Consumer Research*, 25 (June), 52-63.

Rees, Ray and Achim Wambach (2008), “The Microeconomics of Insurance,” *Foundations and Trends® in Microeconomics*, 4 (1/2), 1-163.

Repetti, Rena L., Shelley E. Taylor, and Teresa E. Seeman (2002), "Risky Families: Family Social Environments and the Mental and Physical Health of Offspring," *Psychological Bulletin*, 128 (2), 330-66.

Richins, Marsha L. and Lan Nguyen Chaplin (2015), "Material Parenting: How the Use of Goods in Parenting Fosters Materialism in the Next Generation," *Journal of Consumer Research*, 41 (6), 1333-57.

Rindfleisch, Aric, James E. Burroughs, and Frank Denton (1997), “Family Structure, Materialism, and Compulsive Consumption,” *Journal of Consumer Research*, 23 (March), 312–25.

Roberts, James A., Chris Manolis, and John F. Tanner (2008), “Interpersonal influence and adolescent materialism and compulsive buying,” *Social Influence*, 3, 114−31.

Rogers, Alan R (1994), “Evolution of Time Preference by Natural Selection,” *The American Economic Review*, 84 (3), 460-81.

Ross, Lisa T. and Elizabeth M. Hill (2000), "The Family Unpredictability Scale: Reliability and Validity," *Journal of Marriage and Family*, 62 (2), 549-62.

Ross, Lisa Thomson and Jennifer A. McDuff (2008), "The Retrospective Family Unpredictability Scale: Reliability and Validity," *Journal of Child and Family Studies*, 17 (1), 13-27.

Roux, Caroline and Kelly Goldsmith (2014). “When Those Who Have the Least Spend the Most: Understanding the Relationship Between Resource Scarcity, Socioeconomic Status and Materialism,” *Advances in Consumer Research*, Vol. 42, eds. June Cotte and Stacy Wood, Duluth, MN: Association for Consumer Research, 216-17.

Samuelson, William and Richard Zeckhauser (1988), "Status Quo Bias in Decision Making," *Journal of Risk and Uncertainty*, 1 (1), 7-59.

Schlesinger, Harris and J. Mathias Graf von der Schulenburg (1991), "Search Costs, Switching Costs and Product Heterogeneity in an Insurance Market," *Journal of Risk and Insurance*, 58 (1), 109-19.

Sharma, Eesha, and Adam L. Alter (2012), “Financial Deprivation Prompts Consumers to Seek Scarce Goods,” *Journal of Consumer Research*, 39 (October), 545–60.

Shoemaker, Paul J. H. and Howard C. Kunreuther (1979), “An Experimental Study of Insurance Decisions,” *Journal of Risk and Insurance*, 46, 603-18.

Shonkoff, Jack P., Linda Richter, Jacques van der Gaag, and Zulfiqar A. Bhutta (2012), “An Integrated Scientific Framework for Child Survival and Early Childhood Development,” *Pediatrics*, 129 (2), e460-e72.

Shrum, L. J., James E. Burroughs, and Aric Rindfleisch (2005), “Television’s Cultivation of Material Values,” *Journal of Consumer Research*, 32 (December), 473–79.

Simpson, Jeffry A., Vladas Griskevicius, Sally I. Chun Kuo, Sooyeon Sung, and W. Andrew Collins (2012), "Evolution, Stress, and Sensitive Periods: The Influence of Unpredictability in Early Versus Late Childhood on Sex and Risky Behavior,” *Developmental Psychology*, 48 (3), 674-86.

Sitkin, Sim B. and Amy L. Pablo (1992), "Reconceptualization the Determinants of Risk Behavior,” *Academy of Management Review*, 17 (1), 9-38.

Slovic, Paul (1987), “Perception of Risk,” *Science*, 236 (4799), 280-85.

Slovic, Paul, Baruch Fischhoff, Sarah Lichtenstein, Bernard and Barbara Coombs (1977), "Preference for Insuring Against Probably Small Losses:Insurance Implications," *The Journal of Risk and Insurance*, 44 (June), 237-58.

Smith, Vernon L. (1968), “Optimal Insurance Coverage,” *Journal of Political Economy*, 76 (1), 68-77.

Spiller, Stephen A., Gavan J. Fitzsimons, John G. Lynch, and Gary H. McClelland (2013), "Spotlights, Floodlights, and the Magic Number Zero: Simple Effects Tests in Moderated Regression," *Journal of Marketing Research*, 50 (2), 277-88.

Spinnewijn, Johannes (2013), "Insurance and Perceptions: How to Screen Optimists and Pessimists," *Economic Journal*, 123 (569), 606-33.

Taylor, Shelley E. (2010), "Mechanisms Linking Early Life Stress to Adult Health Outcomes," *Proceedings of the National Academy of Sciences of the United States of America*, 107 (19), 8507-12.

Taylor, Shelley E. and Jonathan D. Brown (1988), "Illusion and Well-Being: A Social Psychological Perspective on Mental Health," *Psychological Bulletin*, 103 (2), 193-210.

Taylor, Shelley E., Jennifer S. Lerner, Rebecca M. Sage, Barbara J. Lehman, and Teresa E. Seeman (2004), "Early Environment, Emotions, Responses to Stress, and Health," *Journal of Personality*, 72 (6), 1365-93.

Thompson, Debora V., Ishani Banerji, and Rebecca Hamilton (2015), "You Can't Always Get What You Want: The Effect of Childhood Scarcity on Substitution Decisions," Working Paper, Georgetown University, Washington, DC 20057.

Troxel, Wendy M. and Karen A. Matthews (2004), "What Are the Costs of Marital Conflict and Dissolution to Children's Physical Health?" *Clinical Child and Family Psychology Review*, 7 (1), 29-57.

U.S. Department of Health and Human Services (2013), "Health Insurance Marketplace Premiums for 2014," *ASPE Issue Brief*, Washington, DC: Government Printing Office.

Viscusi, W. Kip, Wesley A. Magat, and Joel Huber (1987), "An Investigation of the Rationality of Consumer Valuations of Multiple Health Risks," *The RAND Journal of Economics*, 18 (4), 465-79.

Ward, Scott (1974), "Consumer Socialization," *Journal of Consumer Research*, 1 (September), 1-14.

Watson, David, Lee Anna Clark, and Auke Tellegen (1988), "Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales," *Journal of Personality and Social Psychology*, 54 (6), 1063–70.

Weinstein, Neil D. (1980), "Unrealistic Optimism About Future Life Events," *Journal of Personality and Social Psychology*, 39 (5), 806-20.

White, Andrew E., Yexin Jessica Li, Vladas Griskevicius, Steven L. Neuberg, and Douglas T. Kenrick (2013), "Putting All Your Eggs in One Basket: Life-history Strategies, Bet Hedging, and Diversification," *Psychological Science*, 24 (May), 715–22.

Yan, Dengfeng, and Jaideep Sengupta (2013), "The Influence of Base Rate and Case Information on Health-Risk Perceptions: A Unified Model of Self-Positivity and Self-Negativity," *Journal of Consumer Research*, 39 (5), 931–46.

Zhao, Xinshu, John G. Lynch Jr., and Qimei Chen (2010), "Re-considering Baron and Kenny: Myths and Truths about Mediation Analysis," *Journal of Consumer Research*, 37 (August), 197–206.

CHAPTER III
ESSAY 2: INFLUENCE OF CHILDHOOD ENVIRONMENT ON PLANNING

Much of our time is spent on getting things done. Whether it is writing a paper, cleaning the garage, packing for a trip, or going out to lunch with a friend, people often need to get multiple activities done by some deadline in the future. However, juggling multiple tasks in our busy lives is not easy. Consequently, many of us struggle to get things done on time. It is therefore not surprising that a lot of research has been devoted towards understanding people's psychological processes associated with planning (Lynch, Netmeyer, Spiller and Zammit 2010; Spiller and Lynch 2010; Townsend and Liu 2012).

In this paper, I investigate the role of childhood environments in shaping people's cognitive processes involved in planning. Early experiences are considered important for psychological processes responsible for planning, setting goals, and action tendencies that guide the person's behavior (Bandura 2001; Nurmi 1991; Seginer 1992). For example, childhood experiences are associated with future-oriented processes that have important implications for financial, academic, and general well-being (Bandura and Mischel 1965; Mischel and Gilligan 1964; Friedman and Scholnick 1997). However, much less know about how *variation* in childhood environments influence planning. In the present work, I aim to fill this gap by examining how childhood socioeconomic variation influences psychological processes crucial for planning for the future.

Drawing on recent work, I propose that a person's *childhood environment* (e.g. whether people grew up in relatively rich or poor households) and their *current*

environment (e.g. whether people are facing financial threat) work together to influence planning. Moreover, I propose and provide evidence that the effect of childhood environment on planning is different depending on whether motivational (e.g. propensity to plan) or volitional (e.g. task completion estimates) processes involved in planning are activated.

Results suggest that whereas people who grew up in wealthier environments indicated a greater propensity to plan as compared to people who grew up poor, they also underestimated the time it would take them to complete future tasks. This latter tendency, known as planning fallacy, indicates poor planning. Importantly, consistent with recent work, the effects of childhood resources on planning emerged most strongly when people were facing financial threat. Whereas growing up rich was associated with a greater motivation to plan in response to financial threat, wealthier childhoods were also associated with positive expectations about one's efficacy at carrying out future plans, indicating poor planning.

CONCEPTUAL BACKGROUND

Influence of Childhood Environment

Childhood socioeconomic status (SES) reflects resource availability in one's early-life environment (Belsky, Schlomer and Ellis 2011; Miller et al. 2009; Simpson et al. 2012). I draw on a developmental perspective of SES, which considers childhood SES as a marker of exposure to a stressful and unpredictable environment in early life (Belsky, Schlomer, and Ellis 2011; Ellis et al. 2009). Growing up in a low-SES environment is associated with having fewer resources. But a developmental perspective

highlights that childhood SES indicates not only differential access to financial resources, but is also centrally linked to differential exposure to stress and instability in early-life. Lower-SES environments, for example, have a greater prevalence of fluctuating employment and inconsistent resource availability (Brady and Matthews, 2002; Evans 2005; Jensen et al. 1983; Matheny et al. 1995; Troxel and Matthews 2004).

Childhood SES is a powerful predictor of various life outcomes including health, education attainment, and well-being throughout people's lives (Duncan et al. 2002; Miller et al. 2009). Given the vital role of childhood SES, there has been an increased interest in examining how childhood SES influences consumer behavior and decision making (Griskevicius et al. 2011, 2013; Hill et al. 2013; Mittal and Griskevicius 2014; Thompson, Banerji, and Hamilton 2015; White et al. 2013). For example, childhood SES is found to be associated with people's intertemporal choices, whereby growing up in poorer environments in associated with an opportunistic orientation and future discounting (Griskevicius et al. 2011, 2013).

The Central Role of Current Environmental Threat

An important finding from recent experimental work is that the effects of childhood SES on adult behaviors are not readily observable. Instead, childhood-related differences in behaviors such as risk-taking and impulsivity tend to be most strongly evoked in stressful contexts such as when facing financial threats (Griskevicius et al. 2011, 2013; Hill et al. 2013; Mittal and Griskevicius 2014; Mittal et al. 2015; Moss and Maner 2014; White et al. 2013). Financial threat represents insecurity about resources in

the current environment and can be triggered by threatening events such as economic recessions (Bach and Dolan 2012; Marjanovic et al. 2013).

Research finds that the effects of childhood environments depend critically on whether the environment faced during adulthoods is characterized by a threat. For example, people from different socioeconomic backgrounds were equally impulsive when current conditions were benign (Griskevicius et al. 2011, 2013; Mittal and Griskevicius 2014). Their behaviors diverged only under conditions of financial threat. Furthermore, people's current level of resources had little effect on their impulsiveness in response to financial threat. Thus, childhood SES but not current SES impacted people's responses to financial threat.

In summary, evidence suggests that childhood environments have important implications for how adults respond to financial threat. Importantly, whereas people from different SES backgrounds behave similarly when the current conditions are benign, their responses diverge under conditions of financial threat.

Childhood Environment and Planning

Most work on how people plan and accomplish them is informed by research on goal-pursuit (Heckhausen and Gollwitzer 1987; Gollwitzer 1993). Goal-pursuit models highlight the distinction between cognitive processes involved in motivation (e.g. propensity to plan for a task) and in volition (e.g. self-efficacy regarding completing a task). Whereas motivational processes affect thoughts such as whether and how much to plan, volitional processes are geared towards evaluating the feasibility and efficacy of a plan (Gollwitzer 2012).

Although prior research has primarily focused on how people accomplish a single goal, the reality is that most people juggle multiple things at once. In the case of multiple tasks, research suggests that a predisposition to plan is positively associated with goal fulfilment (Hayes-Roth and Hayes-Roth 1979). That is, the more likely someone is to plan for a goal, the more likely they are to accomplish that goal. However, not everyone plans equally and those with a lower tendency to plan may be worse off in various life domains due to lack of planning (Lynch et al. 2010). For example, people with a lower propensity to plan are less efficient shoppers and are bad at managing money over time (Brooks, Kaufman, and Lichtenstein 2004; Lynch et al. 2010).

However, a greater motivation to plan may not be enough to effectively accomplish multiple tasks. Because multiple tasks compete with each other in terms of demand, having realistic expectations about one's efficacy at completing each of them is important. For example, consider a shopper who wishes to buy gifts for multiple people on a weekend. To accomplish this goal, the shopper could benefit not just by planning their shopping trip(s), but also by having accurate estimates of time required for searching and purchasing each gift. Accordingly, examining volitional processes such as self-efficacy related to task fulfillment is an active area of interest for researchers (for a review see Buehler, Griffin, and Peetz 2010).

I examine how childhood environment—growing up wealthy versus growing up poor—influences propensity to plan and task completion estimates. Based on recent research examining how childhood SES influences adult behavior, I propose that the effect of childhood environment will manifest most strongly in conditions of financial

threat. Furthermore, I hypothesize that people's childhood environment should have very different effects on planning depending on whether people respond about their propensity to plan or their estimates of task completion times.

Childhood Environment and Propensity to Plan

People differ in their motivation towards planning (Lynch et al. 2010). A central aspect of planning is orientation towards the future. Accordingly, past research has found that people who are more future-oriented tend to plan more (Friedman and Scholnick 1997; Jacobs-Lawson and Hershey 2005). For example, models based on intertemporal preferences presume that people who are future-oriented plan more to avoid self-control problems that may arise later but those who are present-biased do not do so (Hoch and Loewenstein 1991; O'Donoghue and Rabin 2001).

As mentioned before, research shows that childhood SES is associated with intertemporal choices during adulthood. People who grew up in relatively wealthier households were more likely to prefer larger-later rewards over smaller-sooner rewards compared to people from poorer households in response to financial threat (Griskevicius et al. 2013; Mittal and Griskevicius 2014). Specifically, whereas people from wealthier backgrounds indicated future-oriented preferences under conditions of financial threat, people from poorer backgrounds indicated present-biased preferences. Importantly, people from different SES backgrounds did not differ in their temporal preferences when current conditions were benign. Based on these findings, and the association between intertemporal preferences and planning, I propose that people from wealthier childhood environments would indicate a greater propensity to plan as compared to people from

poorer childhood environments when current conditions indicate financial threat. However, I do not expect individuals from different childhood backgrounds to diverge in their propensity to plan when current conditions do not indicate financial threat (i.e. control condition). Thus, I hypothesize,

H1: Childhood SES should have a positive effect on propensity to plan and this effect should especially manifest under conditions of financial threat.

Childhood Environment and Task Completion Estimates

People are generally optimistic about how long it would take to complete tasks such as school assignments, personal taxes, and holiday shopping (Buehler, Griffin, and Ross 1994; Griffin and Buehler 1999; Buehler and Griffin 2003). The tendency to underestimate task completion times is referred to as the planning fallacy. Past research has attributed planning fallacy to people's optimistic expectations regarding the future (Buehler, Griffin, and Peetz 2010; Taylor and Brown 1998). Although there is no consensus on the reasons behind people's optimistic time predictions, research suggests that it may be due to biased cognitive perceptions regarding the self (Buehler, Griffin, and Peetz 2010; Taylor, Pham, Rivkin, and Armor 1998). That is, the planning fallacy occurs because of people's optimistic beliefs regarding their efficacy in various life domains (Taylor and Brown 1988; Kruger and Dunning 1999).

Research on how childhood environments influence beliefs about self-efficacy may provide insight on how growing up rich versus poor might influence the extent of the planning fallacy in different people. Recent work shows that people from different SES backgrounds diverge in their self-perceptions when faced with financial threat.

Whereas people from wealthier backgrounds tend to have positively-biased self-perceptions under conditions of threat, people from poorer backgrounds tend to have negatively-biased self-perceptions (Mittal and Griskevicius 2014). For example, individuals from wealthier backgrounds indicated significantly higher perceptions of personal control in response to financial threat. In contrast, individuals from poorer backgrounds indicated significantly lower perceptions of personal control in response to financial threat.

Substantial research indicates a positive relation between perceptions of personal control and people's optimistic expectations (McKenna 1993; Weinstein 1980). A meta-analysis of twenty seven studies concluded that those with greater perceived personal control also had greater optimistic expectations about themselves (Klein and Helweg-Larsen, 2001). That is, the greater one's perception of control, the more optimistic their expectations regarding the self. Because people from wealthier backgrounds tend to report greater perceptions of control in response to financial threat, I expect them to be more optimistic about their efficacy at completing future tasks. In contrast, because people from poorer backgrounds tend to report significantly lower perceptions of control in response to financial threat, I expect them to be more pessimistic about their efficacy at completing future tasks as compared to people from poorer backgrounds. That is, whereas I predict that people who grew up richer would underestimate the time it would take them to complete a task in response to financial threat, I predict that people who grew up poorer would overestimate the time it would take them to complete a task. Thus, I hypothesize:

H2: Childhood resources should have a negative effect on planning such that people who grew up *wealthier* should *underestimate* the expected time to complete a task especially under conditions of financial threat.

H3: The effect of childhood resources on expected time to complete a task should be statistically mediated by differences in beliefs regarding the self.

In summary, I propose two different set of predictions for how childhood environment should impact planning. Central to these predictions are whether people's propensity to plan or their self-efficacy at executing future plans is the focus of inquiry. Despite having a greater motivation towards planning, I predict people from wealthier backgrounds to be overly optimistic about the time it would take them to complete a task under conditions of financial threat. That is, people who grew up rich would underestimate the time it would take them to complete a task under such conditions. In contrast, I predict people who grew up poor to overestimate the time it would take them to complete a task under conditions of threat. I conducted two experiments to test my hypotheses.

STUDY 1: PROPENSITY TO PLAN

Study 1 tested how childhood environments influence people's propensity to plan. I predicted that people from people from resource-deprived versus resource-abundant childhood environments would not differ in their propensity to plan in the control condition. However, people from different backgrounds would have different propensity to plan in conditions of financial threat. Specifically, I predict that people from resource-deprived childhoods would indicate a lower propensity to plan as compared with people

from resource-rich childhoods in the face of financial threat. I tested this possibility in Study 1.

Method

Participants. One hundred and sixty-nine participants (62% female, M_{age} = 33.8, SD = 12.2) from the United States were recruited for an online study using Amazon's Mechanical Turk (MTurk) panel and compensated for their time.

Design and Procedure. People were randomly assigned to either a control or a financial threat conditions. In the financial threat condition, participants viewed a series of photos with captions used in previous research that successfully manipulated financial threat (Griskevicius et al. 2013; Hill et al. 2012). Specifically, participants viewed images depicting financial threat, including unemployment lines, home foreclosure signs, and empty office buildings. Each visual image was accompanied by a brief caption such as "Despite some job gains, many big employers continue to downsize their workforce or lay off workers" and "The unemployment rate has remained high for years and shows little sign of going down any time soon." In the control condition, participants viewed a series of images depicting objects found in an office such as staplers, paper clips, and binders. The captions in the control condition described the objects in each photo.

To minimize suspicion, the study used a cover story (based on Griskevicius et al. 2013; Hill et al. 2012). Participants were told that the study consisted of several different tasks related to visual information processing and memory. Participants were told that they would be given a memory test about the slideshow later in the session. However, before asking questions about memory, it was important to let a few minutes pass to

ostensibly allow for memory to decay. In the meantime, participants were asked to respond to questions about their propensity to plan.

Childhood Resources. To measure the extent to which participants felt resource-deprived when growing up, I used the family resources scale (Rindfleisch et al. 1997). This validated measure assesses whether people received inadequate support for various resources when they were growing up (e.g., spending money, clothing, food, time and attention, etc.). Responses to each of the eight items were provided on a 7-point scale (1 = Inadequate Support; 7 = Adequate Support). The items were aggregated into a *childhood resources* index ($\alpha = .86$). The average score on the childhood resources index was 5.28 (SD = 1.20).

In addition to assessing the extent to which participants felt resource-deprived in childhood, I also assessed the extent to which participants feel that they currently have adequate resources. To do so, participants indicated their agreement on a 7-point scale (1 = Strongly Disagree; 7 = Strongly Agree) with three statements: "I have enough money to buy things I want", "I don't need to worry too much about paying my bills", and "I feel relatively wealthy these days". These items were aggregated into a *current resources* index ($\alpha = .90$). The average response on the current resources index was 3.11 (SD = 1.74).

Propensity to Plan. To assess propensity to plan, participants responded to six questions developed for the study that were inspired by past research on propensity to plan (Lynch et al. 2010). Specifically, participants indicated their agreement with six statements: (1) It is a good idea to have finances planned for the future, (2) It makes sense

to consult one's personal budget to see how much money is left for future expenses, (3) It is important to set financial goals in advance to achieve the most in the future, (4) It is a good idea to actively consider the steps to take in order to stick to one's budget, (5) It is important to look at one's personal budget in order to get a better view of spending in the future, and (6) It makes sense to decide beforehand how one's money will be used in the future. Responses to each item were provided on a 6-point scale (1 = strongly disagree, 6 = strongly agree). The items were aggregated into a *planning index* (α = .91).

Results and Discussion

To test whether people's propensity to plan was different depending on their childhood resources and the current conditions, I used a general linear model (GLM) approach with condition as a categorical variable, and childhood resources as a centered and continuous variable. Results revealed no main effect of condition, childhood resources, or current resources (all *p*s>.305). However, consistent with predictions, there was a significant childhood resources by condition interaction ($F(1, 165) = 9.98$, $p = .002$). As seen in figure 1, people from different childhood backgrounds indicated different motivation towards planning across the two experimental conditions. Furthermore, this interaction remained significant even when controlling for participants' level of current resources ($F(1, 164) = 9.86$, $p = .002$). There was no interaction effect of financial threat and current resources ($F(1, 165) = .72$, $p = .397$).

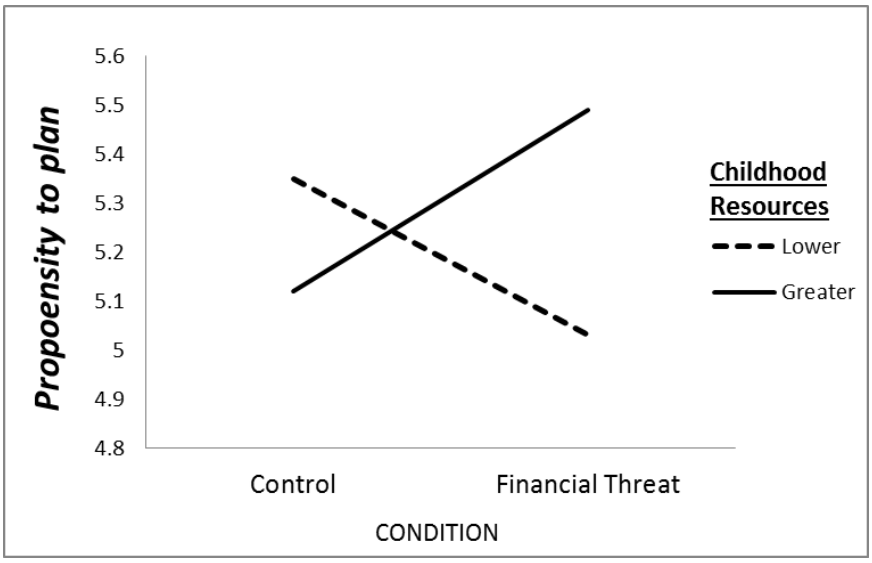


Figure 1. Influence of childhood environment on propensity to plan across control and financial threat conditions (Study 1). Graphed means represent 1 SD above and below the mean of childhood resources.

To test H1, I next examined the relation between childhood resources and propensity to plan in each of the two experimental conditions. In the control condition, there was no relation between childhood resources and propensity to plan (β = -.17, p = .128). However, in the financial threat condition people who felt more resource-deprived reported significantly low propensity to plan (β = .301, p = .005).

I next probed the childhood resources by condition interaction using spotlight analysis (Aiken and West 1991; Irwin and McClelland 2001). Results suggest that people from resource-deprived childhoods (1SD below the mean of childhood resources) had a significant decrease in propensity to plan in the financial threat condition compared to the control condition (t(165) = -2.07, p = .04). In contrast, people from resource-rich

backgrounds (1 SD above the mean of childhood resources) had significant increase in propensity to plan in the financial threat condition compared to the control condition ($t(165) = 2.41$, $p = .017$).

Floodlight analyses revealed that financial threat led people with childhood resources at or below 0.92 SDs from the mean to have a significantly lower propensity to plan ($B_{JN} = -0.29$, $SE = 0.15$, $p = .05$). In contrast, financial threat led people with childhood resources at or above 0.68 SDs from the mean to have a significantly higher propensity to plan ($B_{JN} = 0.26$, $SE = 0.13$, $p = .05$).

In summary, Study 1 found that growing up rich versus poor had a different effect on propensity to plan depending on whether the current environment elicited financial threat or not. Whereas people from different SES backgrounds reported similar propensity to plan in the control condition, individuals who grew up with abundant resources reported significantly greater propensity to plan as compared to individuals from resource-deprived childhoods in response to financial threat.

STUDY 2: PLANNING FALLACY

Study 1 investigated how childhood environments differentially influences people's propensity to plan in response to financial threat. The goal of Study 2 was to examine whether childhood environments influenced people's estimates of task completion times.

Method

Participants. One hundred and thirty-eight respondents (54% female, M_{age} = 36.8, SD = 12.8) from an online subject pool participated in exchange for a small monetary amount.

Design and Procedure. Participants were informed that the session had multiple tasks including getting people's feedback about the economy. Participants were randomly assigned to one of two conditions: financial threat or control. Participants' childhood and current resources were assessed using the same items as Study 1.

Participants in the financial threat condition were asked to write about three indicators that suggest the economy is "becoming increasingly unpredictable and that resources such as jobs are becoming scarcer." Those in the control condition were asked to write about three indicators that suggest the economy "is getting better and that resources such as jobs are becoming abundant."

Estimate of task completion time. Next, participants were informed that in the next task researchers were interested in knowing how efficient people are at processing text. Participants were then told that they will see a piece of text on the next screen. Their task was to accurately count the number of time the letter 'e' appears in it. But before they started that task, they were asked to estimate how long they thought it would be take them to complete the task. Specifically, participants responded to the item: "Please enter the number of seconds you think you will take to process the piece of text:" The responses were recorded on an open-ended text box. The number of seconds participants entered served as the dependent variable. In addition, the actual time taken by participants was also recorded.

Importantly, before participants gave their subjective estimates, they were informed that past data suggests that most people take about 180 seconds to complete the task. This provided all participants with past knowledge about the time required to complete the text processing task. Any departure from this number would suggest a bias. An underestimation of task completion time in the presence of past information would correspond with more positive expectations regarding one's life outcomes – i.e. the planning fallacy. An overestimation of task completion time in the presence of past information would represent more negative expectations regarding one's life outcomes.

Results and Discussion

Manipulation check. To test whether the financial threat manipulation was successful, all participants were asked to indicate the extent to which they agreed with the following statement: "Financial uncertainty is increasing" on a 7-point scale (*1 = Strongly disagree* to *7 = Strongly agree*). Findings showed that participants in the financial threat condition indicated greater feelings of threat (M = 5.76, SD = 1.19) than did participants in the control condition (M = 4.39, SD = 1.62; $t(136) = 3.68$, $p < .001$). This indicates that the manipulation worked as intended.

To test whether people's degree of planning fallacy was different depending on childhood resources and condition, I ran a GLM with condition as a categorical variable, and childhood resources as a centered and continuous variable. People's estimates of the time it would take them to finish the task was entered as a continuous dependent variable. Results revealed no main effect of condition, childhood resources, or current resources (all *p*s>.525). However, consistent with predictions, childhood resources by condition

interaction was significant ($F(1, 134) = 13.46$, $p < .001$). As seen in figure 2, financial threat had a different effect on people's estimate of task completion depending on their level of childhood resources. Furthermore, this interaction remained significant even when controlling for participants' level of current resources ($F(1, 133) = 13.54$, $p < .001$). There was no interaction effect of financial threat and current resources ($F(1, 134) = .14$, $p = .705$).

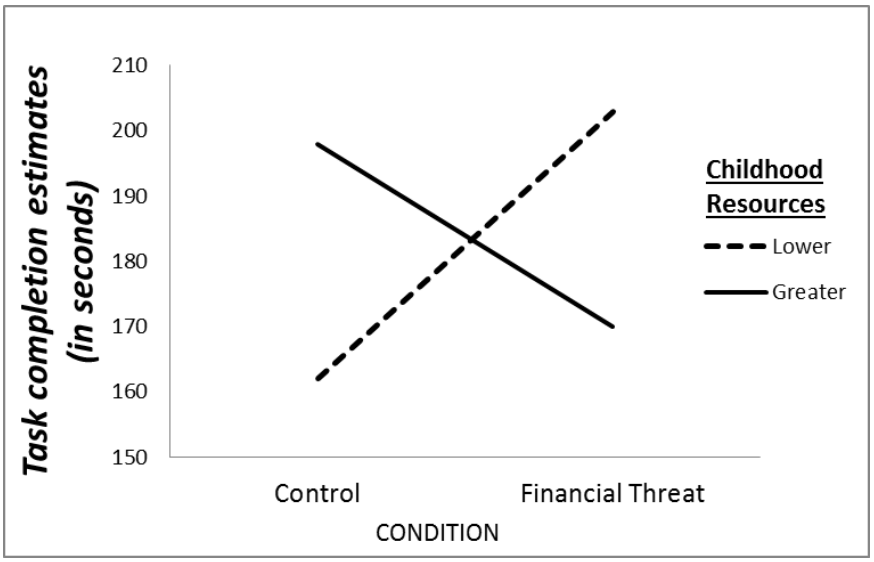


Figure 2. Influence of childhood environment on estimates of task completion time across control and financial threat conditions (Study 2). Graphed means represent 1 SD above and below the mean of childhood resources. Lower scores represent underestimation of task completion times, indicating planning fallacy.

To test H2, I next examined the relation between childhood resources and planning in each of the two experimental conditions. As predicted, in the financial threat condition, there was a significant but negative relation between childhood resources and task completion estimates. This suggests that people who reported higher childhood

resources estimated that it would take them a shorter time to complete the task (β = -.26, p = .030). For this task, however, I also observed a significant positive relation between childhood resources and task completion estimates even in the control condition (β =.36, p = .002). This means that those who reported higher childhood resources estimated that it would take them a longer time to complete the task when conditions were benign. This was a surprising finding which was not predicted based on previous work and which is not observed in the next two studies. Thus, its presence in this study should be interpreted with caution.

Spotlight analysis revealed that for people from resource-deprived childhoods (1SD below the mean of childhood resources) financial threat led to a significant increase in task completion estimates (t(134) = 3.08, p = .002). In contrast, for people from resource-rich backgrounds (1 SD above the mean of childhood resources) financial threat led to significant decrease in task completion estimates (t(134) = -2.11, p = .036). This means that individuals from wealthier backgrounds exhibited a planning fallacy in response to financial threat. Individuals from poorer backgrounds did not exhibit a planning fallacy. In fact, they overestimated the time it would take them to complete the task. This suggests a presence of pessimistic bias in response to threat in people from resource-deprived backgrounds, consistent with past work (Mittal and Griskevicius 2014).

Floodlight analyses revealed that financial threat led people with childhood resources at or below 0.39 SDs from the mean to have significantly higher time estimates (B_{JN} = 9. 9, SE = 5.00, p = .05). In contrast, financial threat led people with childhood

resources at or above 0.91 SDs from the mean to have significantly lower time estimates (B_{JN} = -12.53, *SE* = 6.34, *p* = .05). *Actual time taken*. I also analyzed the influence of childhood resources, current resources, and condition on the actual time it took people to complete the task. There was no main effect of either childhood resources, current resources, or condition on actual time taken (all *p*s > .39). There was no childhood resources by condition interaction ($F(1, 134) = 2.3$, $p = .13$). Moreover, the financial threat by current resources was not significant ($F(1, 134) = 1.88$, $p = .17$).

In summary, Study 2 found that people from different childhood environments had significantly different task completion estimates in response to threat. Whereas individuals who grew up with fewer resources overestimated the time it would take them to complete the given task under financial threat, individuals who grew up with more resources to underestimate the time it would take them to complete the given task under financial threat. This means that those from resource-rich backgrounds exhibited a planning fallacy during conditions of financial threat.

STUDY 3: PSYCHOLOGICAL MECHANISM

Study 3 investigated the psychological mechanism for how childhood resources influences task completion estimates in response to financial threat. I proposed that childhood resources influences task completion times in response to financial threat because of positive or negative beliefs regarding the self. Specifically, I proposed that people from wealthier backgrounds underestimate their completion time because of more positive beliefs about the self during conditions of financial threat. In contrast, people from resource-deprived backgrounds overestimate their task completion times during

conditions of financial threat because of more negative beliefs about the self. Thus, Study 3 tested whether changes in positive or negative beliefs regarding the self statistically mediates the effect of childhood resources and financial threat on task completion estimates.

In addition, Study 3 also asked participants to indicate their level of childhood resources using another measure used in past research, in addition to using the same measure as in Studies 1 and 2. I expected that the two measures of childhood resources would be closely related and would generate converging findings.

Method

Participants. One hundred and fifty two participants (65.1% female, M_{age} = 36.3, SD = 11.7) were recruited from an online subject pool in exchange for a small monetary amount.

Design and Procedure. The procedures and materials were identical to those used in Study 2. This includes using the same manipulation for financial threat and control, and the same items to assess subjective estimates of task completion times. The only two differences in Study 3 were the inclusion of items to measure the hypothesized mediating mechanism and the inclusion of a new measure of childhood resources in addition to the one used in Studies 1 and 2.

Childhood Resources. In addition to measuring childhood and current resources via the same items as in Studies 1 and 2, we also assessed participants' childhood resources using an established measure of childhood SES (see Griskevicius et al. 2011, 2013; Mittal and Griskevicius 2014). Specifically, participants answered three items (α =

.89): (1) “My family usually had enough money for things when I was growing up,” (2) “I grew up in a relatively wealthy neighborhood,” and (3) “I felt relatively wealthy compared to the other kids in my school.” Responses were provided on a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*).

There was a sizable correlation between the 8-item measure of childhood resources used in Studies 1 and 2, and the new childhood SES measure ($r = .53$, $p < .001$). The two measures were thus averaged and combined for subsequent analyses. (The pattern of results remains similar when each measure is used independently although certain key effects were not significant by conventional standards, see appendix for details)

Perceptions of the self. People’s perceptions about how positive or negative they construed the self were captured using two different measures. First, people’s level of optimism regarding their lives was assessed by adapting the established 6-item Life Orientation Test – Revised (LOT-R; Scheier, Carver, and Bridges 1994). All participants indicated their agreement with the following statements: (1) I usually expect the best for me in life, (2) things won’t go wrong for me in the future, (3) I’m optimistic about my future, (4) I expect things to go my way in the future, (5) I expect good things to happen to me in the future, and (6) overall, I expect more good things to happen to me than bad. Responses for each item was recorded on a 7-point scale (1 = strongly disagree, 7 = strongly agree). The items will be aggregated into a *life optimism index* ($\alpha = .94$).

Second, I also assessed people’s expectations regarding their level of control on outcomes in life using an established 4-item measure (Lachman and Weaver 1998). This

measure has been used to capture people's positive or negative perceptions regarding their level of personal control in life (Mittal and Griskevicius 2014). Participants indicated their agreement with the following statements: (1) I can do just about anything that I really set my mind to, (2) Whatever happens in the future mostly depends on me, (3) When I really want to do something, I usually find a way to succeed at it, and (4) Whether or not I am able to get what I want is in my own hands. Responses for each item were provided on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The four items were aggregated into a *personal control index* ($\alpha = .86$).

Results

Estimate of task completion time. Results revealed no main effect of condition, childhood resources or current resources (all *p*s>.08). Importantly, consistent with predictions, there was a significant childhood resources by condition interaction ($F(1, 148) = 5.48$, $p = .021$). This interaction remained significant even when controlling for participants' level of current resources ($F(1, 147) = 5.39$, $p = .022$). There was no interaction effect of financial threat and current resources ($F(1, 148) = 1.95$, $p = .17$).

To test H2, I examined the relation between childhood resources and estimated time in each of the two experimental conditions. As seen in Figure 3, in the control condition, there was no relation between childhood resources and the time estimated for task completion ($\beta = .04$, $p = .76$). However, in the financial threat condition, people from wealthier backgrounds indicated significantly *lower* estimated time ($\beta = -.30$, $p = .006$). Thus, replicating the findings from Study 2 and supporting H2, greater childhood

resources was associated with lower estimates of task completion time in conditions of financial threat.

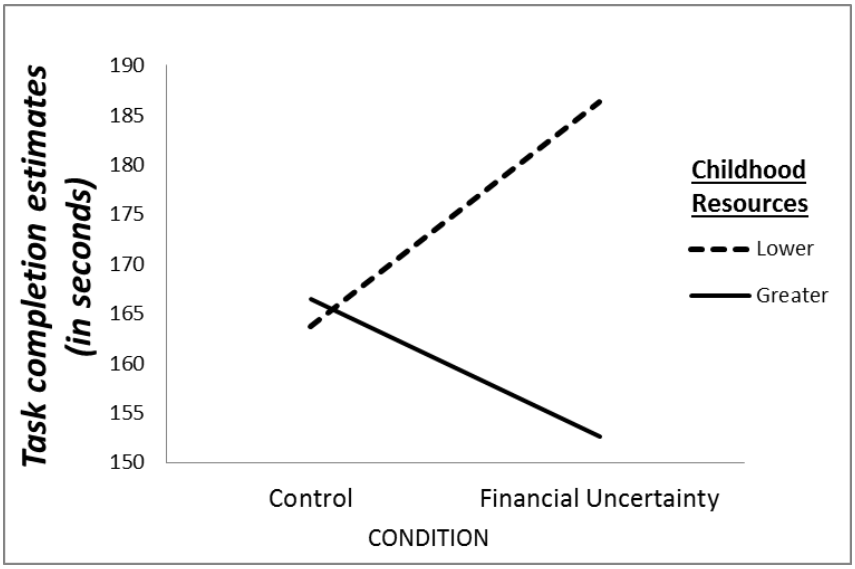


Figure 3. Effect of childhood resources on people's time estimates (Study 3). Graphed means represent 1 SD above and below the mean of childhood resources.

Spotlight analysis revealed that for people from resource-deprived childhoods (1SD below the mean of childhood resources) financial threat led to a significant increase in task completion estimates ($t(148) = 2.04$, $p = .043$). In contrast, for people from resource-rich backgrounds (1 SD above the mean of childhood resources) financial threat led to decrease in task completion estimates, although this effect wasn't significant according to conventional standards ($t(148) = -1.27$, $p = .20$).

Floodlight analyses revealed that people with childhood resources at or below 0.9 SDs from the mean had significantly higher time estimates in the financial threat condition compared to the control condition ($B_{JN} = 20.9$, $SE = 10.57$, $p = .05$). In contrast, people with childhood resources at or above 4.4 SDs from the mean had lower time

estimates in the financial threat condition compared to the control condition although this effect did not reach significance at the conventional level for the range of childhood resources observed in this study (at childhood resources of 7, B_{JN} = -33.7, *SE* = 17.99, *p* = .06).

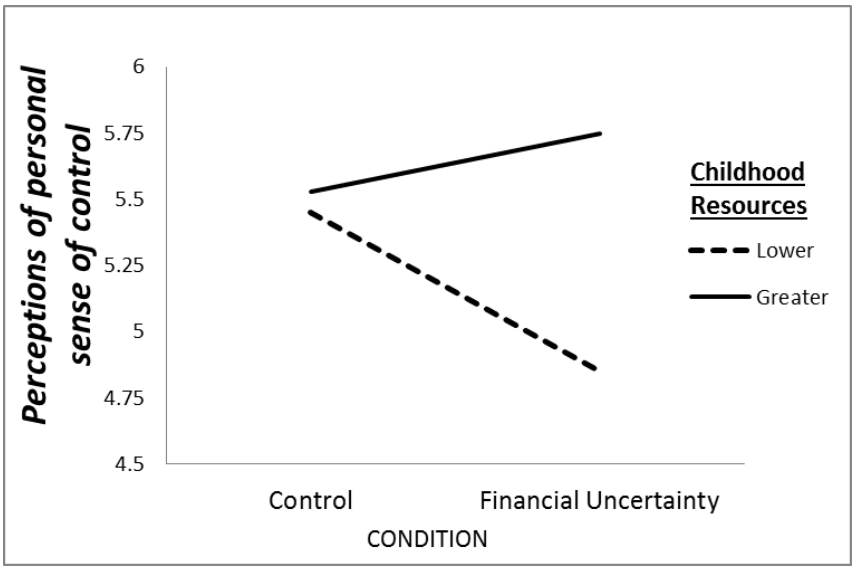
Actual time taken. There was no main effect of either childhood resources, current resources, or condition on the actual time taken to complete the task (all *p*s > .39). There was no childhood resources by condition interaction ($F(1, 147) = 0.31$, $p = .58$). Moreover, the current resources by condition interaction was also not significant ($F(1, 147) = 0.03$, $p = .88$).

Perceptions of the self. For the *life optimism index*, results revealed no main effect of condition ($p > .87$). But findings did show a main effect of childhood resources ($F(1, 148) = 24.18$, $p < .001$), whereby having more resources in childhood was associated with more optimistic expectations in life. Further analysis did not reveal the expected financial threat by childhood resources interaction ($F(1, 148) = .44$, $p = .51$). The pattern of results revealed that greater resources in childhood was associated with more optimistic expectations in life regardless of the experimental condition. This means that facing financial threat did not affect people's optimism towards life as a function of their childhood SES. Thus, the life optimism seems unlikely to be a psychological mechanism that leads people from different childhood backgrounds to have varied time estimates,

especially in response to financial threat[1]. Therefore, no further analysis was conducted using the life optimism index.

For the *personal control index*, results revealed no main effect of condition (p > .20). But findings showed a main effect of childhood resources (F(1, 148) = 11.64, p = .001), whereby having more resources in childhood was associated with optimistic perceptions of personal control. Furthermore, as predicted, this main effect was qualified by a significant financial threat by childhood resources interaction (F(1, 148) = 6.57, p = .011). This interaction remained significant even when controlling for participants' current resources (F(1, 147) = 8.32, p = .005).

As shown in figure 4, in the control condition there was no relation between childhood resources and perceptions of personal control (β = 0.12, p = .34). In the financial threat condition, however, participants from poorer childhoods had significantly greater perceptions of personal control (β = .45, p < .001).



[1] Mediation analysis failed to reveal an indirect effect of financial threat and childhood resources on time estimates via life optimism as evidenced by results showing the confidence interval included 0, b = -.87, 95% CI [-4.63, 0.93].

Figure 4. Effect of childhood resources on people's perceptions of personal control (Study 3). Graphed means represent 1 SD above and below the mean of childhood resources.

Spotlight analysis revealed that for people from resource-deprived childhoods (1SD below the mean of childhood resources) financial threat led to a significant decrease in perceptions of personal control ($t(147) = -2.96$, $p = .003$). In contrast, for people from resource-rich backgrounds (1 SD above the mean of childhood resources) financial threat led to an increase in perceptions of personal control, although this effect wasn't significant according to conventional standards ($t(148) = 1.11$, $p = .27$).

Floodlight analyses revealed that people with childhood resources at or below 0.25 SDs from the mean had significantly lower perceptions of personal control in conditions of financial threat ($B_{JN} = -0.29$, $SE = 0.15$, $p = .05$). In contrast, people with childhood resources at or above 1.96 SDs from the mean had significantly higher perceptions of personal control in conditions of financial threat ($B_{JN} = 0.62$, $SE = 0.32$, $p = .05$).

Mediation. I next tested whether the effect of childhood resources and financial threat on estimates of task completion times is statistically mediated by changes in perceptions of personal control. Because this mediational effect should depend on childhood resources, the proper analysis is mediated moderation (Muller, Judd, and Yzerbyt 2005).

Using Hayes' (2013) macro and following the guidelines outlined in Zhao et al. (2010), I conducted a bootstrap test of the indirect effect of childhood resources and

financial threat on time estimates, via perceptions of personal control. A 5000 resample bootstrap revealed an indirect effect of financial threat and childhood resources on time estimates via perceived personal control, b = -3.08, 95% CI [-8.89, -.42]. Because the confidence interval does not include 0, this indicates that the effect of financial threat on time estimates was statistically mediated by people's perceptions of personal control over life outcomes.

Discussion

In summary, Study 3 again showed that people from wealthier childhoods underestimate task completion times and those from poorer childhoods overestimate task completion times in response to financial threat. In addition, Study 3 also identified a hypothesized psychological mechanism for how childhood resources influence time estimates. Consistent with predictions, Study 3 found that the effect of childhood resources on time estimates was statistically mediated by people's positive or negative beliefs regarding of their personal control. This suggests that the reason why individuals from resource-rich childhoods underestimate their task completion times is because they tend to have positive beliefs about themselves in response to financial threat. In contrast, the reason why individuals from resource-deprived childhoods overestimate their task completion times is because they tend to have negative beliefs about themselves in response to financial threat.

STUDY 4: DEBIASING

Study 3 showed that expectations regarding one's self-efficacy mediated the effect of childhood resources and financial threat on estimates of task completion times.

Study 4 sought to "turn off" this effect by testing for an intervention strategy aimed at debiasing the individuals who underestimated their task completion time. If optimistic expectations is the psychological mechanism driving the effect of childhood resources and financial threat leads on the underestimation of task completion time, I predict that informing people of this tendency would lead to more conservative time estimates. This means that informing people about the possibility of committing planning fallacy should decrease the tendency among those from wealthier backgrounds to underestimate their task completion times.

Method

Participants. One hundred and ninety participants (52.1% female, M_{age} = 34.6, SD = 10.9) were recruited from an online subject pool in exchange for a small monetary incentive.

Design and Procedure. Participants will randomly assigned to one of three experimental conditions: (1) control, (2) financial threat, or (3) financial threat *plus planning fallacy debiasing*. The study used same manipulations for financial threat and control as in Studies 2 and 3. Childhood and current resources were assessed using the same items as in Study 3. For childhood resources, I once again assessed the two measures used in Study 3 and aggregated them for subsequent analyses due to their strong correlation (r = .66, p < .001).

Task completion estimates. Participants' estimates of task completion times were assessed using the same task as in studies 2 and 3. That is, participants were told that they will be working on a text perception task which most people took about 180 to seconds to

complete. They were then asked for their estimate of how long they think it will take them to complete the task. Importantly, the financial threat *plus planning fallacy debiasing* condition had an added component. In this condition, participants were informed about people's tendency to underestimate their task completion times just before they provided their estimates. Specifically, participants in this condition read: "Note that most tend to underestimate this time. Make sure you keep this tendency in mind while making your estimate." I expect that providing this information would "turn off" the planning fallacy effect observed among individuals from wealthier backgrounds during conditions of financial threat.

Results

An omnibus test with all the three experimental conditions and childhood resources revealed a significant interaction ($F(2, 184) = 3.52$, $p = .032$). I next sought to examine whether the current study replicated the pattern of findings obtained in Studies 2 and 3 in the control and the financial threat conditions. As in Study 3, I predicted that people from different childhood backgrounds would not differ in their time estimates in the control condition, but people from wealthier childhoods would have lower time estimates in the financial threat condition compared to people from poorer childhoods. As expected, analyses revealed the predicted interaction between condition and childhood resources ($F(1, 122) = 7.41$, $p = .007$). This interaction remained significant even after controlling for participants' current SES ($F(1, 121) = 7.74$, $p = .006$).

To test H2, I next examined the relation between childhood resources and time estimates in each of the two experimental conditions. As seen in Figure 5, in the control

condition, there was no relation between childhood resources and the time estimated for task completion (β = .22, p = .09). However, in the financial threat condition, people from wealthier backgrounds indicated significantly *lower* estimated time (β = -.27, p = .030). Thus, replicating the findings from Studies 2 and 3, and supporting H2, greater childhood resources was associated with lower estimates of task completion time in conditions of financial threat.

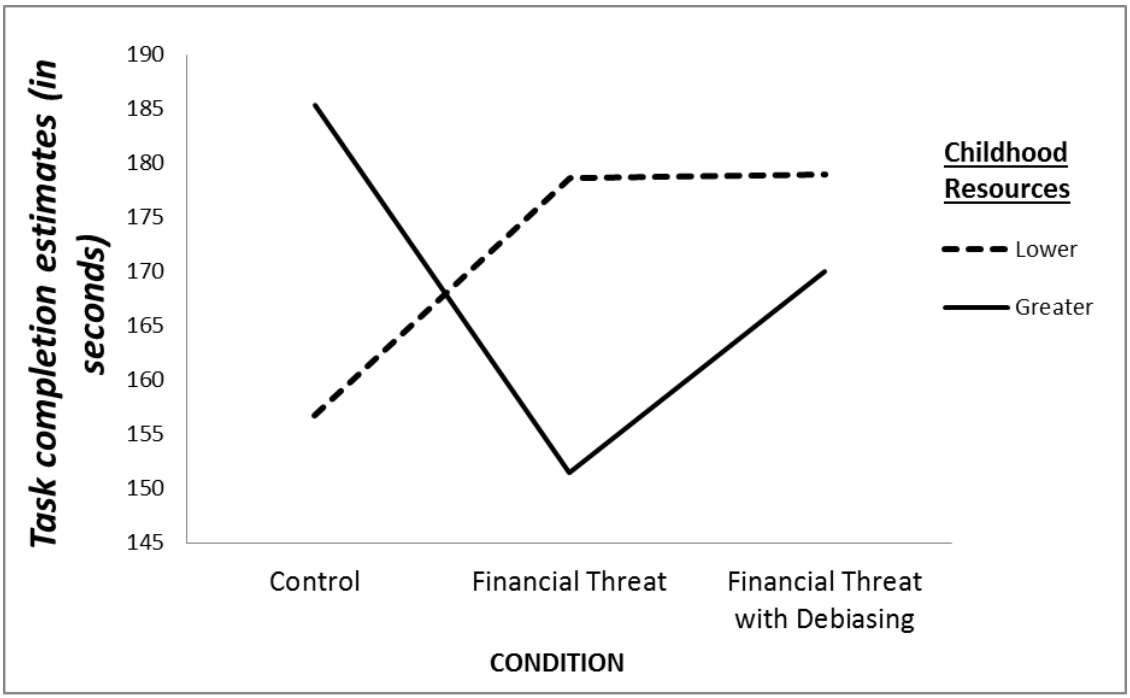


Figure 5. Effect of childhood resources on people's time estimates (Study 4). Graphed means represent 1SD above and below the mean level of childhood resources.

Spotlight analysis revealed that for people from resource-deprived childhoods (1SD below the mean of childhood resources) financial threat led to an increase in task completion estimates (t(121) = 1.55, p = .12). In contrast, for people from resource-rich backgrounds (1 SD above the mean of childhood resources) financial threat led to significant decrease in task completion estimates (t(121) = -2.39, p = .018).

Floodlight analyses showed that financial threat led people with childhood resources at or below 1.47 SDs from the mean to have significantly higher time estimates (B_{JN} = 35.3, *SE* = 18.8, *p* = .05). In contrast, financial threat led people with childhood resources at or above 0.62 SDs from the mean to have significantly lower time estimates (B_{JN} = -23.2, *SE* = 11.7, *p* = .05).

Actual time taken. There was no main effect of either childhood resources, current resources, or condition on actual time taken (all *p*s > .07). There was no childhood resources by condition interaction ($F(1, 134) = 0.17$, $p = .68$). Moreover, the current resources by condition interaction was also not significant ($F(1, 134) = 0.04$, $p = .84$).

To test the novel prediction in the current study, I next examined whether financial threat had a different effect on time estimates depending on whether participants were first debiased by informing them about the tendency of overestimating time. To test this, I focused on the control condition and the financial threat *plus planning fallacy debiasing* condition. Results showed that there the condition by childhood resources interaction was not significant, $F(1, 120) = 2.45$, $p = .12$. People from wealthier backgrounds did not differ in their time estimates in the control condition compared to the financial threat *plus planning fallacy debiasing* condition, $t(120) = -.78$, $p = .44$ (see Figure 5). Furthermore, consistent with our predictions, people from wealthier childhoods were not significantly different from people from poorer backgrounds in their time estimates in the financial threat *plus planning fallacy debiasing* condition ($\beta = -.01$, $p = .45$).

Discussion

In summary, Study 4 provided evidence that by informing people about their tendency to underestimate task completion times, the planning fallacy effect observed in Studies 2 and 3 could be "turned off". Whereas financial threat led people from wealthier childhoods to underestimate their task completion times compared to people from poorer childhoods, providing people about the presence of planning fallacy erased the difference in time estimates. Taken together with the mediational evidence in Study 3, Study 4 provides additional evidence that positive expectations regarding the self is a psychological driver for how financial threat influences time estimates.

GENERAL DISCUSSION

I examined the influence of childhood environments on two different aspects of planning which are necessary for making and carrying out plans effectively – motivation (propensity to plan) and task self-efficacy (estimates of task completion time). I proposed that childhood environments should have different effects on planning depending on: (1) whether propensity to plan or task self-efficacy is the focus of inquiry, and (2) whether a person is currently facing financial threat.

Four experiments provided evidence for my predictions. As predicted, results showed that people from different childhood environments differed in their propensity to plan under conditions of financial threat. Whereas, people from wealthier backgrounds had a greater propensity to plan in response to financial threat, people from poorer backgrounds had a lower propensity to plan in response to threat.

However, the pattern of results was very different when people are asked about their time estimates for carrying out future tasks. People from poorer backgrounds

overestimated the time it would take them to complete future tasks. In contrast, People from wealthier backgrounds underestimated the time it would take them to complete future tasks in response to financial threat, indicating a planning fallacy. Mediation analyses showed that the reason for this effect is that facing financial threat changed people's perceptions of personal control as a function of their childhood environment. People from poorer backgrounds had lower perceptions of personal control, leading them to indicate longer time estimates to finish a task. In contrast, people from wealthier backgrounds had higher perceptions of personal control in response to threat, leading them to indicate shorter time estimates to finish the same task.

Finally, the last study tested a strategy to reduce the difference in time estimates resulting from facing financial threats among people from different SES backgrounds. Specifically, the goal was to reduce the planning fallacy among people who are most likely to commit it – people from wealthier childhood environments. Consistent with predictions, I found that informing people about their tendencies to underestimate task completion times erased the differences in time estimates among people from different childhood SES backgrounds.

Contributions and implications

This research makes several contributions to the consumer behavior literature. First, whereas prior work has mostly examined the influence of childhood environment on consumer behavior in children and adolescents, I add to an emerging stream of research by considering how childhood environment can have long-lasting effects on behavioral and decisions even during adulthood (e.g. Connell et al. 2014; Richins and

Chaplin 2015). This suggests that the effects of childhood SES may be etched into our adult psychology, continuing to influence adult consumer decision-making regardless of one's socioeconomic situation later in life.

Second, my findings contribute to a growing literature on consumer planning (Lynch et al. 2010; Fernandes, Lynch, and Netemeyer 2014; Spiller and Lynch 2009; Townsend and Liu 2012), as well as a burgeoning literature on how consumer behavior is influenced by financial threat, scarcity and low socioeconomic status (Griskevicius et al. 2013; Hill et al. 2012; Millet, Lamey, and Van den Bergh 2012; Roux, Goldsmith, and Bonezzi 2015; Sharma and Alter 2012). More broadly, this work adds to a growing body of work on how a person's childhood environment influences a wide range of consumer behavior.

Third, the current studies are among the first to show that facing threats influences people's perceptions about themselves and their future actions (Taylor and Brown 1988; Weinstein 1980). People's positive or negative beliefs about themselves plays a fundamental role in how they approach decisions and choices about issues like their finances (Mittal and Griskevicius 2014), health (Menon, Raghubir, and Agrawal 2007), interpersonal relations (Cook 1993), and general well-being (Lachman and Weaver 1998; Taylor and Brown 1988). Yet surprisingly little is known about of how threatening events affect people's self-perceptions and why individual differences in perceptions exist among people. My findings show that facing threat affects people's perceptions of their own abilities as a function of their childhood environment, leading some people to

become more likely to commit a planning fallacy by underestimating the time required to carry out future tasks (Buehler, Griffin, and Ross 1994).

REFERENCES

Aiken, Leona S. and Stephen G. West (1991), *Multiple Regression: Testing and Interpreting Interactions*, Thousand Oaks, CA: Sage.

Bandura, Albert (2001), "Social Cognitive Theory: An Agentic Perspective," *Annual Review of Psychology*, 52, 1–26.

Bandura, Albert and Walter Mischel (1965), "Modification of Self-Imposed Delay of Reward through Exposure to Live and Symbolic Models," *Journal of Personality and Social Psychology*, 2 (5), 698-705.

Belsky, Jay, Gabriel L. Schlomer, and Bruce J. Ellis (2011), "Beyond Cumulative Risk: Distinguishing Harshness and Unpredictability as Determinants of Parenting and Early Life History Strategy," *Developmental Psychology*, 48 (3), 662-73.

Brady, Sonya S. and Karen A. Matthews (2002), "The Influence of Socioeconomic Status and Ethnicity on Adolescents' Exposure to Stressful Life Events," *Journal of Pediatric Psychology*, 27 (7), 575-83.

Brooks, Charles M., Patrick J. Kaufman, and Donald R. Lichtenstein (2004), "Travel Configuration on Consumer Trip-Chained Store Choice," *Journal of Consumer Research*, 31 (2), 241–48.

Buehler, Roger and Dale Griffin (2003), "Planning, Personality, and Prediction: The Role of Future Focus in Optimistic Time Predictions," *Organizational Behavior and Human Decision Processes*, 92 (1-2), 80-90.

Buehler, Roger, Dale Griffin, and Johanna Peetz (2010), "The Planning Fallacy. Cognitive, Motivational, and Social Origins," *Advances in Experimental Social Psychology*, 43 (C), 1-62.

Buehler, Roger, Dale Griffin, and Michael Ross (1994), "Exploring the 'Planning Fallacy': Why People Underestimate Their Task Completion Times," *Journal of Personality and Social Psychology*, 67 (September), 366-81.

Buehler, Roger, Dale Griffin, and Michael Ross (2002), "Inside the planning fallacy: The causes and consequences of optimistic time predictions," in *Heuristics and biases: The psychology of intuitive judgment*, eds. Thomas Gilovich and Daniel Kahneman, Cambridge: Cambridge University Press, 250-270.

Chaplin, Lan Nguyen and Deborah Roedder John (2007), "Growing up in a MaterialWorld: Age Differences in Materialism in Children and Adolescents," *Journal of Consumer Research*, 34 (December), 480–93.

Chaplin, Lan Nguyen, Ronald P. Hill, and Deborah Roedder John (2014), "Poverty and Materialism: A Look at Impoverished Versus Affluent Children," *Journal of Public Policy & Marketing*, 33 (Spring), 78-92.

Churchill, Gilbert A. and George P. Moschis (1979), "Television and Interpersonal Influences on Adolescent Consumer Learning," *Journal of Consumer Research*, 6 (June), 23–35.

Cook, William L. (1993), "Interdependence and the Interpersonal Sense of Control: An Analysis of Family Relationships," *Journal of Personality and Social Psychology*, 64 (April), 587 – 601.

Del Giudice, Marco, Bruce J. Ellis, and Elizabeth A. Shirtcliff (2011), "The Adaptive Calibration Model of Stress Responsivity," *Neuroscience Biobehavioral Review*, 35 (June), 1562-92.

Duncan, Greg J., Mary C. Daly, Peggy McDonough, and David R. Williams (2002), "Optimal Indicators of Socioeconomic Status for Health Research," *American Journal of Public Health*, 92 (7): 1151–57.

Ellis, Bruce J., Aurelio J. Figueredo, Barbara H. Brumbach, and Gabriel L. Schlomer (2009), "Fundamental Dimensions of Environmental Risk," *Human Nature*, 20 (April), 204-68.

Evans, Gary W, Carrie Gonnella, Lyscha A Marcynyszyn, Lauren Gentile, and Nicholas Salpekar (2005), "The Role of Chaos in Poverty and Children's Socioemotional Adjustment," *Psychological Science*, 16 (July): 560–65.

Friedman, Sarah L., and Ellin Kofsky Scholnick (1997). *The Developmental Psychology of Planning: Why, How, and When Do We Plan?* Mahwah, NJ: Erlbaum.

Goldberg, Marvin E., Gerald J. Gorn, Laura A. Peracchio, and Gary Bamossy (2003), "Understanding Materialism among Youth," *Journal of Consumer Psychology*, 13 (September), 278–88.

Gollwitzer, Peter M. (1993), "Goal Achievement: The Role of Intentions," *European Review of Social Psychology*, 4 (1), 141–85.

Gollwitzer, Peter M. (2012). "Mindset Theory of Action Phases," *Handbook of Theories of Social Psychology*, Vol.1, ed. Paul Van Lange, Arie W. Kruglanski, and E. Torry Higgins (Eds.), London: Sage Publications, 526-45.

Griffin, Dale and Roger Buehler (1999), "Frequency, Probability, and Prediction: Easy Solutions to Cognitive Illusions?" *Cognitive Psychology*, 38 (1), 48-78.

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 (February), 197–205.

Griskevicius, Vladas, Andrew W. Delton, Theresa E. Robertson, and Joshua M. Tybur (2011), "Environmental Contingency in Life History Strategies: The Influence of Mortality and Socioeconomic Status on Reproductive Timing", *Journal of Personality and Social Psychology*, 100 (February), 241–54.

Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York: Guilford.

Hayes-Roth, Barbara and Frederick Hayes-Roth (1979), "A Cognitive Model of Planning," *Cognitive Science*, 3 (4), 275–310.

Harris, Peter (1996), "Sufficient Grounds for Optimism? The Relationship between Perceived Controllability and Optimistic Bias," *Journal of Social and Clinical Psychology*, 15 (1), 9-52.

Heckhausen, Heinz, and Peter M. Gollwitzer (1987), "Thought Contents and Cognitive Functioning in Motivational versus Volitional States of Mind," *Motivation and Emotion*, 11(2), 101–20.

Hill, Sarah E., Christopher D. Rodeheffer, Vladas Griskevicius, Kristina Durante, and Andrew E. White (2012), "Boosting Beauty in an Economic Decline: Mating, Spending, and the Lipstick Effect," *Journal of Personality and Social Psychology*, 103 (August), 275–91.

Hill, Sarah E., Christopher D. Rodeheffer, Danielle J. DelPriore, D, and Max E. Butterfield (2013), "Ecological Contingencies in Women's Calorie Regulation Psychology: A Life History Approach," Journal of Experimental Social Psychology, 49, 888-97.

Hoch, Stephen J., and George F. Loewenstein (1991), "Time-Inconsistent Preferences and Consumer Self-Control," *Journal of Consumer Research*, 17 (4), 492–507.

Irwin, Julie R. and Gary H. McClelland (2001) "Misleading Heuristics and Moderated Multiple Regression Models," *Journal of Marketing Research*, 38 (February), 100–09.

Jacobs-Lawson, Joy M., and Douglas A. Hershey (2005), "Influence of Future Time Perspective, Financial Knowledge, and Financial Risk Tolerance no Retirement Saving Behaviors," *Financial Services Review*, 14 (4), 331-44.

Jensen, E. W., S. A. James, W. T. Boyce, and S. A. Hartnett (1983), "The Family Routines Inventory: Development and Validation," *Social Science & Medicine*, 17 (4), 201-11.

John, Deborah Roedder (1999), "Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research," *Journal of Consumer Research*, 26 (December), 183–213.

Kahneman, Daniel, and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47 (March), 263–91.

Klein, Cynthia T. F. and Marie Helweg-Larsen (2002), "Perceived Control and the Optimistic Bias: A Meta-Analytic Review," *Psychology and Health*, 17, 437-46.

Kruger, Justin and David Dunning (1999), "Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments," *Journal of Personality and Social Psychology*, 77 (6), 1121-34.

Lachman, Margie E. and Suzanne L. Weaver (1998), "The Sense of Control as a Moderator of Social Class Differences in Health and Well-Being," *Journal of Personality and Social Psychology*, 74 (3), 763-73.

Lynch, John G. Jr., Richard G. Netemeyer, Stephen A. Spiller, and Alessandra Zammit (2010), "A Generalizable Scale of Propensity to Plan: The Long and the Short of Planning for Time and for Money," *Journal of Consumer Research,* 37 (June), 108–28.

Matheny, Adam P., Theodore D. Wachs, Jennifer L. Ludwig, and Kay Phillips (1995), "Bringing Order out of Chaos: Psychometric Characteristics of the Confusion, Hubbub, and Order Scale," *Journal of Applied Developmental Psychology*, 16(3), 429-44.

McEwen, B. S. (2012), "Brain on Stress: How the Social Environment Gets under the Skin," *Proceedings of the National Academy of Sciences*, 109 (Suppl 2), 17180-85.

McEwen, Bruce S., and Eliot Stellar (1993), "Stress and the Individual: Mechanisms Leading to Disease," *Archives of Internal Medicine*, 153 (18), 2093-101.

McKenna, Frank P. (1993), "It Won't Happen to Me: Unrealistic Optimism or Illusion of Control?" *British Journal of Psychology*, 84, 39-50.

Menon, Geeta, Priya Raghubir, and Nidhi Agrawal (2007), "Health Risk Perceptions and Consumer Psychology," in *The Handbook of Consumer Psychology*, ed. Curt Haugtvedt, Paul Herr, and Frank Kardes, Hillsdale, NJ: Erlbaum, 981–1010.

Miller, Gregory E., Edith Chen, Alexandra K. Fok, Hope Walker, Alvin Lim, Erin F. Nicholls, Steve Cole, and Michael S. Kobor (2009), "Low Early-Life Social Class Leaves a Biological Residue Manifested by Decreased Glucocorticoid and Increased Proinflammatory Signaling," *Proceedings of the National Academy of Sciences*, 106 (34), 14716–21.

Millet, Kobe, Lien Lamey, and Bram Van den Bergh (2012), "Avoiding Negative vs. Achieving Positive Outcomes in Hard and Prosperous Economic Times", *Organizational Behavior and Human Decision Processes*, 117 (2), 275–84.

Mischel, Walter and Carol Gilligan (1964), "Delay of Gratification, Motivation for the Prohibited Gratification, and Responses to Temptation," *Journal of Abnormal Psychology*, 69, 411-17.

Mittal, Chiraag and Vladas Griskevicius (2014), "Sense of Control under Uncertainty Depends on People's Childhood Environment: A Life History Theory Approach," *Journal of Personality and Social Psychology*, 107 (October), 621-37.

Moore, Roy L. and George P. Moschis (1981), "The Role of Family Communication in Consumer Learning," *Journal of Communications*, 31 (Autumn), 42–51.

Moss, Justin H., and Jon K. Maner (2014), "The Clock Is Ticking: The Sound of a Ticking Clock Speeds up Women's Attitudes on Reproductive Timing," Human Nature, 25 (3), 328–41.

Nurmi, Jari-Erik (1991), "How Do Adolescents See Their Future? A Review of the Development of Future Orientation and Planning," *Developmental Review*, 11(1), 1-59.

O'Donoghue, Ted and Matthew Rabin (2001), "Choice and Procrastination," *Quarterly Journal of Economics*, 116 (1), 121–60.

Richins, Marsha L. and Lan Nguyen Chaplin (2015), "Material Parenting: How the Use of Goods in Parenting Fosters Materialism in the Next Generation," *Journal of Consumer Research*, 41 (6), 1333-57.

Rindfleisch, Aric, James E. Burroughs, and Frank Denton (1997), "Family Structure, Materialism, and Compulsive Consumption," *Journal of Consumer Research* 23 (March), 312-325.

Roux, Caroline, Kelly Goldsmith, and Andrea Bonezzi (2015), "On the Consequences of a Scarcity Mindset: Why Thoughts of Having Less Can Lead to Taking (and Giving) More, *Conditionally accepted at the Journal of Consumer Research.*

Scheier, Michael F., Charles S. Carver, and Michael W. Bridges (1994), "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 (6), 1063-78.

Seginer, Rachel (1992), “Future Orientation: Age-Related Differences among Adolescent Females,” *Journal of Youth and Adolescence*, 21 (4), 421-37.

Sharma, Eesha, and Adam L. Alter (2012), “Financial Deprivation Prompts Consumers to Seek Scarce Goods,” *Journal of Consumer Research,* 39 (October), 545–60.

Simpson, Jeffry A., Vladas Griskevicius, Sally I. Chun Kuo, Sooyeon Sung, and W. Andrew Collins (2012), "Evolution, Stress, and Sensitive Periods: The Influence of Unpredictability in Early Versus Late Childhood on Sex and Risky Behavior,” *Developmental Psychology*, 48 (3), 674-86.

Spiller, Stephen A. and John G. Lynch Jr. (2010), “Consumer Planning and Underestimation of Time and Money Spent on Projects,” working paper, Fuqua School of Business, Duke University.

Taylor, Shelley E. (2010), "Mechanisms Linking Early Life Stress to Adult Health Outcomes," *Proceedings of the National Academy of Sciences*, 107 (19), 8507-12.

Taylor, Shelley E. and Jonathon Brown (1988), “Illusion and Well-Being: A Social Psychological Perspective on Mental Health,” *Psychological Bulletin,* 103 (March), 193–210.

Taylor, Shelley E., Margaret E. Kemeny, Lisa G. Aspinwall, Stephen G. Schneider, Richard Rodriguez, and Mark Herbert (1992), “Optimism, Coping, Psychological Distress, and High-Risk Sexual Behavior among Men at Risk for Acquired Immunodeficiency Syndrome (AIDS),” *Journal Of Personality and Social Psychology,* 63 (September), 460 – 73.

Taylor, Shelley E., Jennifer S. Lerner, Rebecca M. Sage, Barbara J. Lehman, and Teresa E. Seeman (2004), "Early Environment, Emotions, Responses to Stress, and Health," *Journal of Personality*, 72 (6), 1365-93.

Taylor, Shelley E., Lien B. Pham, Inna D. Rivkin, and David A. Armor (1998), "Harnessing the Imagination. Mental Simulation, Self-Regulation, and Coping," *American Psychologist*, 53 (4), 429-39.

Thompson, Debora V., Ishani Banerji, and Rebecca Hamilton (2015), "You Can't Always Get What You Want: The Effect of Childhood Scarcity on Substitution Decisions," Working Paper, Georgetown University, Washington, DC 20057.

Troxel, Wendy M. and Karen A. Matthews (2004), "What Are the Costs of Marital Conflict and Dissolution to Children's Physical Health?" Clinical Child and Family Psychology Review, 7(1), 29-57.

Townsend, Claudia and Wendy Liu (2012), "Is Planning Good for You? The Differential Impact of Planning on Self-regulation," *Journal of Consumer Research*, 39 (December), 688–703.

Weinstein, Neil D. (1980), "Unrealistic Optimisim About Future Life Events," *Journal of Personality and Social Psychology*, 39 (5), 806-20.

White, Andrew E., Yexin Jessica Li, Vladas Griskevicius, Steven L. Neuberg, and Douglas T. Kenrick (2013), "Putting All Your Eggs in One Basket: Life-history Strategies, Bet Hedging, and Diversification," *Psychological Science*, 24 (May), 715–22.

CHAPTER IV

CONCLUSIONS AND FUTURE DIRECTIONS

Prior work has examined the influence of early-life environments on children's and adolescent's behavior, but we know little about how people's early-life environment influences them in adulthood. My dissertation focuses on the consequences of childhood environments on outcomes much later in life. Specifically, I examine how poorer versus wealthier childhood environments shape people's consumer behavior and decision making. Additionally, I develop a model to identify when people who grew up poor make better decisions.

The first essay demonstrates that growing up poor can decrease *or* increase desire for health coverage. People who grew up poor were generally *less* interested in seeking medical coverage compared to people who grew up wealthy. This effect was independent of people's current ability to afford insurance and was strongest when adults felt a sense of current financial threat. Furthermore, willingness to engage is risky behavior statistically mediated the effect of childhood environment on desire for health insurance. However, I also uncovered a condition that reverses this effect. I found that when information about the average likelihood of getting sick was made available, people who grew up poor had a *greater* desire for medical coverage compared to those who grew up wealthy. Once again, this effect was strongest in conditions of financial threat when people were stressed about their resources. The reason for the reversal effect stemmed from the fact that providing base rates changed the psychological mechanism driving how childhood SES influences health decisions. Instead of being driven by people's risk

preferences, providing base rates led the effect to be driven by risk perceptions – people's perceptions of how likely they are to get sick. People who grew up poor perceived themselves as being more likely to get sick compared to those who grew up wealthy, and this perception statistically mediated their increased desire for health coverage.

The second essay demonstrates how childhood environment influences two different aspects of planning which are necessary for making and carrying out plans effectively – motivation (propensity to plan) and task self-efficacy (estimates of task completion time). Four experiments showed that people from wealthier backgrounds had a greater propensity to plan compared to people from poorer backgrounds. This effect emerged in response to financial threat and was independent of people's current level of resources. I also showed that the effect of childhood environment on planning was very different when people are asked about their time estimates for carrying out future plans. People from poorer backgrounds overestimated the time it would take them to complete future tasks. In contrast, People from wealthier backgrounds underestimated the time it would take them to complete future tasks in response to financial threat, indicating a planning fallacy. Once again, this effect was strongest during conditions of financial threat and was independent of people's current level of resources. Mediation analyses showed that the reason for this effect is that facing financial threat changed people's perceptions of personal control on life outcomes. People from poorer backgrounds had lower perceptions of personal control, leading them to indicate longer time estimates to finish a task. In contrast, people from wealthier backgrounds had higher perceptions of

personal control in response to threat, leading them to indicate shorter time estimates to finish the same task.

In summary, eleven experiments across two essays provide novel and compelling evidence that childhood environments have important and long-lasting influences on people's consumer behavior and decision making. Below, I discuss some limitations of the current findings and suggest avenues for future research.

Limitations and Future Directions

Measures of childhood resources. A limitation of the current studies is that childhood resources was measured retrospectively. Although future research is needed, there are reasons to believe that prospective measures of childhood resources would yield the same pattern of results. Past studies have documented a strong link between adults' retrospectively reported childhood SES and their actual SES in childhood (Cohen et al. 2010; Duncan, Ziol-Guest, and Kalil 2010). Furthermore, studies in which researchers had access to both prospective and retrospective measures of childhood environment show the same pattern of findings regardless of the measure (Mittal et al. 2015).

Across eleven experiments, four different measures of childhood resources were used. Although converging evidence for key effects was found regardless of which measure was used, there were instances when different measures childhood resources produced slightly different results (e.g. Study 3 in Essay 2). Past research acknowledges that SES is a nebulous and multi-faceted construct whose effect on the outcome variable differs depending on how it is measures (Duncan et al. 2002). Nonetheless, future

research is required to ascertain why seemingly similar measures of childhood SES often produce varied results.

Critical role of financial threat. I find that the effect of childhood resources on people's judgments and decision making emerged most strongly in conditions of financial threat. This finding raises the question of why tendencies associated with early-life environments are more likely to be expressed in the presence of financial threat. The precise reasons for this are presently unclear. A leading possibility is that such effects stem from the nature of the human stress response system. Research in human development shows that childhood environment plays a fundamental role in the development of physiological systems that govern how individuals respond to stress throughout life (Del Giudice, Ellis, and Shirtcliff 2011; McEwen 2012; Taylor 2010). Adverse childhood environments produce elevated levels of stress, thereby altering the stress response systems of children who develop in adverse versus non-adverse environments. For example, a stressful early-life environment alters how the body copes with the release of stress hormones such as cortisol when confronted with threats later in life (McEwen and Stellar 1993; Taylor et al. 2004). As a consequence, being confronted with stressful situations in adulthood may lead people from different childhood backgrounds to behave differently.

My model predicts that the effect of childhood resources would be manifested most strongly during stressful conditions. Yet, across both the essays, only financial threat was used to operationalize stressful situations. I focused on financial threats because of their ubiquity and consequentiality in consumer's lives (American

Psychological Association 2015; Diener and Diener 2002; Minsky 1986). Financial threats are common in daily life, whereby the sense of financial stress can be triggered by economic recessions, fluctuations in the stock market, or any salience of financial concerns. While the current research focused on the effects of stressors stemming from financial threats, future research is needed to better understand how other types of environmental stressors may interact with childhood environment to influence consumer behavior.

Positive expectations in response to stressors. I find that financial threat led people from wealthier backgrounds to believe that they were less likely to get sick (Essay 1), and that they had a greater control over outcomes in their lives (Essay 2). This suggests that people from wealthier backgrounds have optimistic beliefs in the presence of a stressor. The precise reasons for this effect are presently unclear. One possibility is that a privileged upbringing leads people to form optimistic expectations as a way to cope with stressors. For example, optimism is correlated with less distress and with more positive attitudes as a coping strategy (Nes and Segerstrom 2006; Taylor et al. 1992). Another possibility is that individuals from wealthier backgrounds tend to internalize threats and thus feel that they have greater agency over subsequent outcomes. Because threats can be perceived as either manageable or unmanageable, it is possible that people from wealthier backgrounds perceive threats to be more manageable, leading them to think that they have a greater influence on life outcomes. This tendency might lead them to form positive expectations about their life. Future research is poised to explore these possibilities.

Childhood resources and beliefs about the self. Whereas prior work finds a strong link between personal control and optimistic beliefs in life (Klein and Helweg-Larsen 2002, Weinstein 1980), I find that childhood SES has a different effect on these two beliefs (Study 3, Essay 2). I find that whereas childhood SES was associated with life optimism regardless of the experimental condition, the effect of childhood SES on perceptions of control emerged only in the financial threat condition. In fact, previous experimental work also finds that the relation between childhood resources and perceptions of control was stronger under threatening conditions (Mittal and Griskevicius 2014). One possibility for this discrepancy is that perceptions of control are governed by psychological processes distinct from those driving their general life optimism. For example, it is possible that although most people expect positive things in life, not all people feel that the positive outcomes will be due to their own effort. Another possibility is that perceptions of control are more situational as compared with life optimism and are thus more easily influenced by threatening conditions. Indeed, the original measure of optimism in life used in Essay 2 was conceptualized as a trait measure (Scheier, Carver, and Bridges 1994). Future research is required to examine these possibilities.

REFERENCES

American Psychological Association (2015), "Stress in America: Paying with our Health," Washington, DC.

Cohen, Sheldon, Denise Janicki-Deverts, Edith Chen, and Karen A. Matthews (2010), "Childhood Socioeconomic Status and Adult Health," *Annals of the New York Academy of Sciences*, 1186, 37-55.

Del Giudice, Marco, Bruce J. Ellis, and Elizabeth A. Shirtcliff (2011), "The Adaptive Calibration Model of Stress Responsivity," *Neuroscience and Biobehavioral Reviews*, 35 (7), 1562-92.

Diener, Ed, and Robert Biswas-Diener (2002), "Will Money Increase Subjective Well-being?" *Social Indicators Research*, 57 (2), 119-69.

Duncan, Greg J., Mary C. Daly, Peggy McDonough, and David R. Williams (2002), "Optimal Indicators of Socioeconomic Status for Health Research," *American Journal of Public Health*, 92 (7): 1151–57.

Duncan, Greg J., Kathleen M. Ziol-Guest, and Ariel Kalil (2010), "Early-Childhood Poverty and Adult Attainment, Behavior, and Health," *Child Development*, 81 (1), 306-25.

Klein, Cynthia T. F. and Marie Helweg-Larsen (2002), "Perceived Control and the Optimistic Bias: A Meta-Analytic Review," *Psychology and Health*, 17, 437-46.

McEwen, Bruce S. (2012), "Brain on Stress: How the Social Environment Gets under the Skin," *Proceedings of the National Academy of Sciences*, 109 (Suppl. 2), 17180-85.

McEwen, Bruce S., and Eliot Stellar (1993), “Stress and the Individual: Mechanisms Leading to Disease,” Archives of Internal Medicine, 153 (18), 2093-101.

Minsky, Hyman P. (1986), *Stabilizing an Unstable Economy*, New Haven, CT: Yale University Press.

Mittal, Chiraag and Vladas Griskevicius (2014), “Sense of Control under Uncertainty Depends on People's Childhood Environment: A Life History Theory Approach,” *Journal of Personality and Social Psychology*, 107 (October), 621-37.

Mittal, Chiraag, Vladas Griskevicius, Jeffry A. Simpson, Sooyeon Sung, and Ethan Young (2015), “Cognitive Adaptations to Stressful Environments: When Childhood Adversity Enhances Adult Executive Function,” *Journal of Personality and Social Psychology*, 109 (4), 604 – 21.

Nes, Lise Solberg, and Suzanne C. Segerstrom (2006), “Dispositional Optimism and Coping: A Meta-analytic Review,” *Personality and Social Psychology Review*, 10(3), 235-51.

Scheier, Michael F., Charles S. Carver, and Michael W. Bridges (1994), “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 (6), 1063-78.

Taylor, Shelley E. (2010), "Mechanisms Linking Early Life Stress to Adult Health Outcomes," *Proceedings of the National Academy of Sciences of the United States of America*, 107 (19), 8507-12.

Taylor, Shelley E., Margaret E. Kemeny, Lisa G. Aspinwall, Stephen G. Schneider, Richard Rodriguez, and Mark Herbert (1992), “Optimism, Coping, Psychological Distress, and High-Risk Sexual Behavior among Men at Risk for Acquired Immunodeficiency Syndrome (AIDS),” *Journal Of Personality and Social Psychology,* 63 (September), 460 – 73.

Taylor, Shelley E., Jennifer S. Lerner, Rebecca M. Sage, Barbara J. Lehman, and Teresa E. Seeman (2004), “Early Environment, Emotions, Responses to Stress, and Health,” *Journal of Personality,* 72 (6), 1365-93.

Weinstein, Neil D. (1980), "Unrealistic Optimisim About Future Life Events," *Journal of Personality and Social Psychology*, 39 (5), 806-20.

BIBLIOGRAPHY

Achenreiner, Gwen Bachmann (1997), "Materialistic Values and Susceptibility to Influence in Children," in *Advances in Consumer Research*, Vol. 24, ed. Merrie Brucks and Deborah J. MacInnis, Provo, UT: Association for Consumer Research, 82-88.

Addy, Sophia and Vanessa R. Wight (2012), *Basic Facts about Low-income Children, 2010: Children under Age 6,* National Center for Children in Poverty, Columbia University.

Adler, Nancy E. and Katherine Newman (2002), "Socioeconomic Disparities in Health: Pathways and Policies," *Health Affairs*, 21 (2), 60-76.

Aiken, Leona S. and Stephen G. West (1991), *Multiple Regression: Testing and Interpreting Interactions,* Thousand Oaks, CA: Sage.

American Psychological Association (2015), "Stress in America: Paying with our Health," Washington, DC.

Anderson, Lisa R. and Jennifer M. Mellor (2008), "Predicting Health Behaviors with an Experimental Measure of Risk Preference," *Journal of Health Economics*, 27 (5), 1260-74.

Arrow, Kenneth J. (1971), *Essays in the Theory of Risk-Bearing*, Chicago, IL: Markham Publishing Co.

Bagot, Rosemary C., Felisa N. van Hasselt, Danielle L. Champagne, Michael J. Meaney, Harm J. Krugers, and Marian Joëls (2009), "Maternal Care Determines Rapid Effects of Stress Mediators on Synaptic Plasticity in Adult Rat

Hippocampal Dentate Gyrus," *Neurobiology of Learning and Memory*, 92 (3), 292-300.

Baicker, Katherine, William J. Congdon, and Sendhil Mullainathan (2012), "Health Insurance Coverage and Take-Up: Lessons from Behavioral Economics," *Milbank Quarterly*, 90 (1), 107-34.

Bandura, Albert (2001), "Social Cognitive Theory: An Agentic Perspective," *Annual Review of Psychology*, 52, 1–26.

Bandura, Albert and Walter Mischel (1965), "Modification of Self-Imposed Delay of Reward through Exposure to Live and Symbolic Models," *Journal of Personality and Social Psychology*, 2 (5), 698-705.

Barnett, Julie and Glynis M. Breakwell (2001), "Risk Perception and Experience: Hazard Personality Profiles and Individual Differences," *Risk Analysis*, 21 (1), 171-77.

Belsky, Jay, Gabriel L. Schlomer, and Bruce J. Ellis (2011), "Beyond Cumulative Risk: Distinguishing Harshness and Unpredictability as Determinants of Parenting and Early Life History Strategy," *Developmental Psychology*, 48 (3), 662-73.

Belsky, Jay, Laurence Steinberg, and Patricia Draper (1991), "Childhood Experience, Interpersonal Development, and Reproductive Strategy: An Evolutionary Theory of Socialization." *Child Development*, 62 (August), 647–70.

Blais, Ann-Renée and Elke U. Weber (2006), "A Domain-Specific Risk-Taking (DOSPERT) Scale for Adult Populations," *Judgment and Decision Making*, 1 (1), 33–47.

Block, Lauren G. and Poonam A. Keller (1995), "When to Accentuate the Negative: The Effects of Perceived Efficacy and Message Framing on Intentions to Perform a Health-Related Behavior," *Journal of Marketing Research*, 32 (2), 192-203.

Brady, Sonya S. and Karen A. Matthews (2002), "The Influence of Socioeconomic Status and Ethnicity on Adolescents' Exposure to Stressful Life Events," *Journal of Pediatric Psychology*, 27 (7), 575-83.

Brewer, Noel T, Gretchen B Chapman, Frederick X Gibbons, Meg Gerrard, Kevin D McCaul, and Neil D Weinstein (2007), "Meta-Analysis of the Relationship between Risk Perception and Health Behavior: The Example of Vaccination," *Health Psychology*, 26 (2), 136.

Brooks, Charles M., Patrick J. Kaufman, and Donald R. Lichtenstein (2004), "Travel Configuration on Consumer Trip-Chained Store Choice," *Journal of Consumer Research*, 31 (2), 241–48.

Brumbach, Barbara Hagenah, Aurelio José Figueredo, and Bruce J. Ellis (2009), "Effects of Harsh and Unpredictable Environments in Adolescence on Development of Life History Strategies: A Longitudinal Test of an Evolutionary Model," *Human Nature*, 20 (1), 25-51.

Buehler, Roger and Dale Griffin (2003), "Planning, Personality, and Prediction: The Role of Future Focus in Optimistic Time Predictions," *Organizational Behavior and Human Decision Processes*, 92 (1-2), 80-90.

Buehler, Roger, Dale Griffin, and Johanna Peetz (2010), "The Planning Fallacy. Cognitive, Motivational, and Social Origins," *Advances in Experimental Social Psychology*, 43 (C), 1-62.

Buehler, Roger, Dale Griffin, and Michael Ross (1994), "Exploring the 'Planning Fallacy': Why People Underestimate Their Task Completion Times," *Journal of Personality and Social Psychology*, 67 (September), 366-81.

Buehler, Roger, Dale Griffin, and Michael Ross (2002), "Inside the planning fallacy: The causes and consequences of optimistic time predictions," in *Heuristics and biases: The psychology of intuitive judgment*, eds. Thomas Gilovich and Daniel Kahneman, Cambridge: Cambridge University Press, 250-270.

Bundorf, Kate M. and Mark V. Pauly (2006), "Is Health Insurance Affordable for the Uninsured?" *Journal of Health Economics*, 25 (4), 650-73.

Camerer, Colin F. and Howard Kunreuther (1989), "Decision Processes for Low Probability Events: Policy Implications," *Journal of Policy Analysis and Management*, 8 (4), 565-92.

Champagne, Danielle L., Rosemary C. Bagot, Felisa van Hasselt, Ger Ramakers, Michael J. Meaney, E. Ronald De Kloet, Marian Joëls, and Harm Krugers (2008), "Maternal Care and Hippocampal Plasticity: Evidence For Experience-Dependent Structural Plasticity, Altered Synaptic Functioning, and Differential Responsiveness to Glucocorticoids and Stress," *The Journal of Neuroscience*, 28 (23): 6037–45.

Chaplin, Lan Nguyen and Deborah Roedder John (2007), "Growing up in a Material World: Age Differences in Materialism in Children and Adolescents," *Journal of Consumer Research*, 34 (December), 480–93.

Chaplin, Lan Nguyen and Deborah Roedder John (2010), "Interpersonal Influences on Adolescent Materialism: A New Look at the Role of Parents and Peers," *Journal of Consumer Psychology*, 20 (April), 176–84.

Chaplin, Lan Nguyen, Ronald P. Hill, and Deborah Roedder John (2014), "Poverty and Materialism: A Look at Impoverished Versus Affluent Children," *Journal of Public Policy & Marketing*, 33 (Spring), 78-92.

Chen, Edith (2004), "Why Socioeconomic Status Affects the Health of Children a Psychosocial Perspective," *Current Directions in Psychological Science*, 13 (June), 112-15.

Chen, Edith, Karen A. Matthews, and W. Thomas Boyce (2002), "Socioeconomic Differences in Children's Health: How and Why Do These Relationships Change with Age?" *Psychological Bulletin*, 128 (2), 295-329.

Chen, Edith, and Gregory E. Miller (2012), "'Shift-and-Persist' Strategies: Why Low Socioeconomic Status Isn't Always Bad for Health." *Perspectives on Psychological Science* 7 (March), 135–58.

Churchill, Gilbert A. and George P. Moschis (1979), "Television and Interpersonal Influences on Adolescent Consumer Learning," *Journal of Consumer Research*, 6 (1), 23–35.

Cohen, Sheldon, Denise Janicki-Deverts, Edith Chen, and Karen A. Matthews (2010), "Childhood Socioeconomic Status and Adult Health," *Annals of the New York Academy of Sciences*, 1186, 37-55.

Connell, Paul M., Merrie Brucks, and Jesper H. Nielsen (2014), "How Childhood Advertising Exposure can Create Biased Product Evaluations that Persist into Adulthood," *Journal of Consumer Research*, 41 (1), 119–34.

Cook, William L. (1993), "Interdependence and the Interpersonal Sense of Control: An Analysis of Family Relationships," *Journal of Personality and Social Psychology*, 64 (April), 587 – 601.

de Meza, David and David C. Webb (2001), "Advantageous Selection in Insurance Markets," *The RAND Journal of Economics*, 32 (2), 249-62.

Del Giudice, Marco, Bruce J. Ellis, and Elizabeth A. Shirtcliff (2011), "The Adaptive Calibration Model of Stress Responsivity," *Neuroscience and Biobehavioral Reviews*, 35 (June), 1562-92.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith (2013), "Income, Poverty, and Health Insurance Coverage in the United States: 2012," U.S. Department of Commerce, Washington, DC: Government Printing Office.

Diener, Ed, and Robert Biswas-Diener (2002), "Will Money Increase Subjective Well-being?," *Social Indicators Research*, 57 (2), 119-69.

Duncan, Greg J., Mary C. Daly, Peggy McDonough, and David R. Williams (2002), "Optimal Indicators of Socioeconomic Status for Health Research," *American Journal of Public Health*, 92 (7): 1151–57.

Duncan, Greg J., Kathleen M. Ziol-Guest, and Ariel Kalil (2010), "Early-Childhood Poverty and Adult Attainment, Behavior, and Health," *Child Development*, 81(1), 306–25.

Ellis, Bruce J., Aurelio J. Figueredo, Barbara H. Brumbach, and Gabriel L. Schlomer (2009), "Fundamental Dimensions of Environmental Risk," *Human Nature*, 20 (April), 204-68.

Ellis, Bruce J., Marco Del Giudice, Thomas J. Dishion, Aurelio José Figueredo, Peter Gray, Vladas Griskevicius, Patricia H. Hawley… David Sloan Wilson (2012), "The evolutionary basis of risky adolescent behavior: implications for science, policy, and practice," *Developmental Psychology*, 48 (3), 598-623.

Evans, Gary W. (2004), "The Environment of Childhood Poverty," *The American Psychologist*, 59 (2), 77-92.

Evans, Gary W, Carrie Gonnella, Lyscha A Marcynyszyn, Lauren Gentile, and Nicholas Salpekar (2005), "The Role of Chaos in Poverty and Children's Socioemotional Adjustment," *Psychological Science*, 16 (July): 560–65.

Fischhoff, Baruch, Roxana M. Gonzalez, Deborah A. Small, and Jennifer S. Lerner (2003), "Judged Terror Risk and Proximity to the World Trade Center," *Journal of Risk and Uncertainty*, 26 (2/3), 137- 51.

Frankenhuis, Willem E. and Marco Del Giudice (2012), "When Do Adaptive Developmental Mechanisms Yield Maladaptive Outcomes?" *Developmental Psychology*, 48 (3), 628-42.

Friedman, Sarah L., and Ellin Kofsky Scholnick (1997). *The Developmental Psychology of Planning: Why, How, and When Do We Plan?* Mahwah, NJ: Erlbaum.

Galobardes, Bruna, John W. Lynch, and George Davey Smith (2004), "Childhood Socioeconomic Circumstances and Cause-Specific Mortality in Adulthood: Systematic Review and Interpretation," Vol. 26, 7-21.

Goldberg, Marvin E., Gerald J. Gorn, Laura A. Peracchio, and Gary Bamossy (2003), "Understanding Materialism among Youth," *Journal of Consumer Psychology*, 13 (September), 278–88.

Gollwitzer, Peter (1993), "Goal Achievement: The Role of Intentions," *European Review of Social Psychology*, 4 (1), 141–85.

Gollwitzer, Peter M. (2012). "Mindset Theory of Action Phases," *Handbook of Theories of Social Psychology*, Vol.1, ed. Paul Van Lange, Arie W. Kruglanski, and E. Torry Higgins (Eds.), London: Sage Publications, 526-45.

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 (February), 197–205.

Griskevicius, Vladas, Andrew W. Delton, Theresa E. Robertson, and Joshua M. Tybur (2011a), "Environmental Contingency in Life History Strategies: The Influence of Mortality and Socioeconomic Status on Reproductive Timing", *Journal of Personality and Social Psychology*, 100 (February), 241–54.

Griskevicius, Vladas, Joshua M. Tybur, Andrew W. Delton, and Theresa E. Robertson (2011b), “The Influence of Mortality and Socioeconomic Status on Risk and Delayed Rewards: A Life History Theory Approach,” *Journal of Personality and Social Psychology*, 100 (6), 1015-26.

Hanoch, Yaniv, Joseph G. Johnson, and Andreas Wilke (2006), "Domain Specificity in Experimental Measures and Participant Recruitment: An Application to Risk-Taking Behavior," *Psychological Science*, 17 (4), 300-04.

Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York: Guilford.

Hayes-Roth, Barbara and Frederick Hayes-Roth (1979), “A Cognitive Model of Planning,” *Cognitive Science*, 3 (4), 275–310.

Hill, Elizabeth M., Jessica Jenkins, and Lisa Farmer (2008), "Family Unpredictability, Future Discounting, and Risk Taking," *Journal of Socio-Economics*, 37 (4), 1381-96.

Hill, Sarah E., Christopher D. Rodeheffer, Vladas Griskevicius, Kristina Durante, and Andrew E. White (2012), “Boosting Beauty in an Economic Decline: Mating, Spending, and the Lipstick Effect,” *Journal of Personality and Social Psychology*, 103 (August), 275–91.

Hill, Sarah E., Christopher D. Rodeheffer, Danielle J. DelPriore, and Max E. Butterfield (2013), "Ecological Contingencies in Women's Calorie Regulation Psychology: A Life History Approach," *Journal of Experimental Social Psychology*, 49 (5), 888-97.

Hoch, Stephen J., and George F. Loewenstein (1991), “Time-Inconsistent Preferences and Consumer Self-Control,” *Journal of Consumer Research*, 17 (4), 492–507.

Horton, Richard (2009), "The Global Financial Crisis: An Acute Threat to Health," *The Lancet*, 373 (9661), 355-56.

Hsee, Christopher K. and Howard C. Kunreuther (2000), "The Affection Effect in Insurance Decisions," *Journal of Risk and Uncertainty*, 20 (2), 141-59.

Irwin, Julie R. and Gary H. McClelland (2001) “Misleading Heuristics and Moderated Multiple Regression Models,” *Journal of Marketing Research*, 38 (February), 100–09.

Jacobs-Lawson, Joy M., and Douglas A. Hershey (2005), “Influence of Future Time Perspective, Financial Knowledge, and Financial Risk Tolerance no Retirement Saving Behaviors,” *Financial Services Review*, 14 (4), 331-44.

Jensen, Eric W., Sherman A. James, W. Thomas Boyce, and Sue A. Hartnett (1983), “The Family Routines Inventory: Development and Validation,” *Social Science & Medicine*, 17 (4), 201-11.

John, Deborah Roedder (1999), “Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research,” *Journal of Consumer Research*, 26 (December), 183–213.

Johnson, Eric J., John Hershey, Jacqueline Meszaros, and Howard Kunreuther (1993), "Framing, Probability Distortions, and Insurance Decisions," *Journal of Risk and Uncertainty*, 7 (1), 35-51.

Keller, Punam Anand, Isaac M. Lipkus, and Barbara K. Rimer (2002), “Depressive Realism and Health Risk Accuracy: The Negative Consequences of Positive Mood,” *Journal of Consumer Research*, 29 (1), 57–69.

Kahneman, Daniel, and Amos Tversky (1979), “Prospect Theory: An Analysis of Decision under Risk,” *Econometrica*, 47 (March), 263–91.

Klein, Cynthia T. F. and Marie Helweg-Larsen (2002), “Perceived Control and the Optimistic Bias: A Meta-Analytic Review,” *Psychology & Health*, 17 (4), 437-46.

Kruger, Justin and David Dunning (1999), “Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments,” *Journal of Personality and Social Psychology*, 77 (6), 1121-34.

Kunreuther, Howard (1996), “Mitigating Disaster Losses through Insurance,” *Journal of Risk and Uncertainty*, 12 (2/3), 171-87.

Kunreuther, Howard and M. V. Pauly (2006), "Insurance Decision Making and Market Behavior," *Foundations and Trends in Microeconomics*, 1 (2), 63-127.

Lachman, Margie E. and Suzanne L. Weaver (1998), “The Sense of Control as a Moderator of Social Class Differences in Health and Well-Being,” *Journal of Personality and Social Psychology*, 74 (3), 763-73.

Laran, Juliano and Anthony Salerno (2013), “Life-history Strategy, Food Choice, and Caloric Consumption,” *Psychological Science*, 24 (February), 167–73.

Lejuez, C. W., Jennifer P. Read, Christopher W. Kahler, Jerry B. Richards, Susan E. Ramsey, Gregory L. Stuart, David R. Strong, and Richard A. Brown (2002),

"Evaluation of a Behavioral Measure of Risk Taking: The Balloon Analogue Risk Task (Bart)," *Journal of Experimental Psychology: Applied*, 8 (2), 75-84.

Levy, Helen and Thomas DeLeire (2008), "What Do People Buy When They Don't Buy Health Insurance and What Does That Say About Why They Are Uninsured?," *Inquiry*, 45 (4), 365-79.

Lichtenstein, Sarah and Paul Slovic (1971), "Reversals of Preference between Bids and Choices in Gambling Decisions," *Journal of Experimental Psychology*, 89 (1), 46-55.

Lichtenstein, Sarah and Paul Slovic (1973), "Response-Induced Reversals of Preference in Gambling: An Extended Replication in Las Vegas," *Journal of Experimental Psychology*, 101 (1), 16-20.

Lin, Ying Ching, C. Lin, and Priya Raghubir (2003), "Avoiding Anxiety, Being in Denial or Simply Stroking Self-Esteem: Why Self-Positivity?" *Journal of Consumer Psychology*, 13, 464-477.

Link, Bruce G., and Jo C. Phelan (1995), "Social Conditions as Fundamental Causes of Disease," *Journal of Health and Social Behavior*, Special Issue, 80-94.

Lynch, John G. Jr., Richard G. Netemeyer, Stephen A. Spiller, and Alessandra Zammit (2010), "A Generalizable Scale of Propensity to Plan: The Long and the Short of Planning for Time and for Money," *Journal of Consumer Research*, 37 (June), 108–28.

Marjanovic, Zdravko, Esther R. Greenglass, Lisa Fiksenbaum, and Chris M. Bell (2013), “Psychometric evaluation of the Financial Threat Scale (FTS) in the context of the great recession,” *Journal of Economic Psychology*, 36, 1–10.

Matheny, Adam P., Theodore D. Wachs, Jennifer L. Ludwig, and Kay Phillips (1995), “Bringing Order out of Chaos: Psychometric Characteristics of the Confusion, Hubbub, and Order Scale,” *Journal of Applied Developmental Psychology*, 16 (3), 429-44.

McEwen, Bruce S. (2012), “Brain on Stress: How the Social Environment Gets under the Skin,” *Proceedings of the National Academy of Sciences*, 109 (Suppl. 2), 17180-85.

McEwen, Bruce S., and Eliot Stellar (1993), “Stress and the Individual: Mechanisms Leading to Disease,” Archives of Internal Medicine, 153 (18), 2093-101.

McKenna, Frank P. (1993), “It Won't Happen to Me: Unrealistic Optimism or Illusion of Control?” *British Journal of Psychology*, 84 (1), 39-50.

Mechanic, David and Paul D. Cleary (1980), "Factors Associated with the Maintenance of Positive Health Behavior," *Preventive Medicine*, 9 (6), 805-14.

Menon, Geeta, Lauren G. Block, and Suresh Ramanathan (2002), “We’re at as Much Risk as We Are Led to Believe: Effects of Message Cues on Judgments of Health,” *Journal of Consumer Research*, 28 (4), 533–49.

Menon, Geeta, Ellie J. Kyung, and Nidhi Agrawal (2009), “Biases in Social Comparisons: Optimism or Pessimism,” *Organizational Behavior and Human Decision Processes*, 108 (1), 39–52.

Menon, Geeta, Priya Raghubir, and Nidhi Agrawal (2007), "Health Risk Perceptions and Consumer Psychology," in *The Handbook of Consumer Psychology*, ed. Curt Haugtvedt, Paul Herr, and Frank Kardes, Hillsdale, NJ: Erlbaum, 981–1010.

Miami County Municipal Court (2016), "Community Service," https://oh-miamicounty.civicplus.com/index.aspx?NID=304.

Miller, Gregory E., Edith Chen, Alexandra K. Fok, Hope Walker, Alvin Lim, Erin F. Nicholls, Steve Cole, and Michael S. Kobor (2009), "Low Early-Life Social Class Leaves a Biological Residue Manifested by Decreased Glucocorticoid and Increased Proinflammatory Signaling," *Proceedings of the National Academy of Sciences*, 106 (34), 14716–21.

Millet, Kobe, Lien Lamey, and Bram Van den Bergh (2012), "Avoiding Negative vs. Achieving Positive Outcomes in Hard and Prosperous Economic Times", *Organizational Behavior and Human Decision Processes*, 117 (2), 275–84.

Minsky, Hyman P. (1986), *Stabilizing an Unstable Economy*, New Haven, CT: Yale University Press.

Mischel, Walter and Carol Gilligan (1964), "Delay of Gratification, Motivation for the Prohibited Gratification, and Responses to Temptation," *Journal of Abnormal Psychology*, 69, 411-17.

Mittal, Chiraag and Vladas Griskevicius (2014), "Sense of Control under Uncertainty Depends on People's Childhood Environment: A Life History Theory Approach," *Journal of Personality and Social Psychology*, 107 (October), 621-37.

Mittal, Chiraag, Vladas Griskevicius, Jeffry A. Simpson, Sooyeon Sung, and Ethan Young (2015), "Cognitive Adaptations to Stressful Environments: When Childhood Adversity Enhances Adult Executive Function," *Journal of Personality and Social Psychology*, 109 (4), 604 – 21.

Moore, Roy L. and George P. Moschis (1981), "The Role of Family Communication in Consumer Learning," *Journal of Communications*, 31 (4), 42–51.

Moorman, Christine and Erika Matulich (1993), "A Model of Consumers' Preventative Health Behaviors: The Role of Health Motivation and Health Ability," *Journal of Consumer Research*, 20 (September), 208–228.

Moss, Justin H., and Jon K. Maner (2014), "The Clock Is Ticking: The Sound of a Ticking Clock Speeds up Women's Attitudes on Reproductive Timing," *Human Nature*, 25 (3), 328–41.

Mossin, Jan (1968), "Aspects of Rational Insurance Purchasing," *The Journal of Political Economy*, 76 (4), 553-68.

Muller, Dominique, Charles M. Judd, and Vicent Y. Yzerbyt (2005), "When moderation is mediated and mediation is moderated," *Journal of Personality and Social Psychology*, 89 (6), 852-63.

Nicholson, Nigel, Emma Soane, Mark Fenton-O'Creevy, and Paul Willman (2005) "Personality and Domain-Specific Risk Taking," *Journal of Risk Research*, 8 (2), 157-76.

Nurmi, Jari-Erik (1991), “How Do Adolescents See Their Future? A Review of the Development of Future Orientation and Planning,” *Developmental Review*, 11(1), 1-59.

O’Donoghue, Ted and Matthew Rabin (2001), “Choice and Procrastination,” *Quarterly Journal of Economics*, 116 (1), 121–60.

O’Guinn, Thomas C. and L. J. Shrum (1997), “The Role of Television in the Construction of Consumer Reality,” *Journal of Consumer Research*, 23 (March), 278–94.

Pampel, Fred C., Patrick M. Krueger, and Justin T. Denney (2010), “Socioeconomic Disparities in Health Behaviors,” *Annual Review of Sociology,* 36 (1): 349–70.

Perloff, Linda S. and Barbara K. Fetzer (1986), “Self-Other Judgments and Perceived Vulnerability to Victimization,” *Journal of Personality and Social Psychology*, 50 (March), 502-10.

Petrolia, Daniel R., Craig E. Landry, and Keith H. Coble (2013), “Risk Preferences, Risk Perceptions, and Flood Insurance,” *Land Economics*, 89 (2), 227–45.

Pollitt, Ricardo A., Kathryn M. Rose, and Jay S. Kaufman (2005), "Evaluating the Evidence for Models of Life Course Socioeconomic Factors and Cardiovascular Outcomes: A Systematic Review," *BMC Public Health*, 5, 7.

Raghubir, Priya, and Geeta Menon (1998), “AIDS and Me, Never the Twain Shall Meet: Factors Affecting Judgments of Risk,” *Journal of Consumer Research*, 25 (June), 52-63.

Rees, Ray and Achim Wambach (2008), “The Microeconomics of Insurance,” *Foundations and Trends® in Microeconomics*, 4 (1/2), 1-163.

Repetti, Rena L., Shelley E. Taylor, and Teresa E. Seeman (2002), "Risky Families: Family Social Environments and the Mental and Physical Health of Offspring," *Psychological Bulletin*, 128 (2), 330-66.

Richins, Marsha L. and Lan Nguyen Chaplin (2015), "Material Parenting: How the Use of Goods in Parenting Fosters Materialism in the Next Generation," *Journal of Consumer Research*, 41 (6), 1333-57.

Rindfleisch, Aric, James E. Burroughs, and Frank Denton (1997), “Family Structure, Materialism, and Compulsive Consumption,” *Journal of Consumer Research*, 23 (March), 312–25.

Roberts, James A., Chris Manolis, and John F. Tanner (2008), “Interpersonal influence and adolescent materialism and compulsive buying,” *Social Influence*, 3, 114−31.

Rogers, Alan R (1994), “Evolution of Time Preference by Natural Selection,” *The American Economic Review*, 84 (3), 460-81.

Ross, Lisa T. and Elizabeth M. Hill (2000), "The Family Unpredictability Scale: Reliability and Validity," *Journal of Marriage and Family*, 62 (2), 549-62.

Ross, Lisa Thomson and Jennifer A. McDuff (2008), "The Retrospective Family Unpredictability Scale: Reliability and Validity," *Journal of Child and Family Studies*, 17 (1), 13-27.

Roux, Caroline and Kelly Goldsmith (2014). “When Those Who Have the Least Spend the Most: Understanding the Relationship Between Resource Scarcity, Socioeconomic Status and Materialism,” *Advances in Consumer Research*, Vol. 42, eds. June Cotte and Stacy Wood, Duluth, MN: Association for Consumer Research, 216-17.

Roux, Caroline, Kelly Goldsmith, and Andrea Bonezzi (2015), “On the Consequences of a Scarcity Mindset: Why Thoughts of Having Less Can Lead to Taking (and Giving) More, *Conditionally accepted at the Journal of Consumer Research*.

Samuelson, William and Richard Zeckhauser (1988), "Status Quo Bias in Decision Making," *Journal of Risk and Uncertainty*, 1 (1), 7-59.

Scheier, Michael F., Charles S. Carver, and Michael W. Bridges (1994), “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 (6), 1063-78.

Schlesinger, Harris and J. Mathias Graf von der Schulenburg (1991), "Search Costs, Switching Costs and Product Heterogeneity in an Insurance Market," *Journal of Risk and Insurance*, 58 (1), 109-19.

Seginer, Rachel (1992), “Future Orientation: Age-Related Differences among Adolescent Females,” *Journal of Youth and Adolescence*, 21 (4), 421-37.

Sharma, Eesha, and Adam L. Alter (2012), “Financial Deprivation Prompts Consumers to Seek Scarce Goods,” *Journal of Consumer Research*, 39 (October), 545–60.

Shoemaker, Paul J. H. and Howard C. Kunreuther (1979), “An Experimental Study of Insurance Decisions,” *Journal of Risk and Insurance*, 46, 603-18.

Shonkoff, Jack P., Linda Richter, Jacques van der Gaag, and Zulfiqar A. Bhutta (2012), “An Integrated Scientific Framework for Child Survival and Early Childhood Development,” *Pediatrics*, 129 (2), e460-e72.

Shrum, L. J., James E. Burroughs, and Aric Rindfleisch (2005), “Television’s Cultivation of Material Values,” *Journal of Consumer Research*, 32 (December), 473–79.

Simpson, Jeffry A., Vladas Griskevicius, Sally I. Chun Kuo, Sooyeon Sung, and W. Andrew Collins (2012), "Evolution, Stress, and Sensitive Periods: The Influence of Unpredictability in Early Versus Late Childhood on Sex and Risky Behavior,” *Developmental Psychology*, 48 (3), 674-86.

Sitkin, Sim B. and Amy L. Pablo (1992), "Reconceptualization the Determinants of Risk Behavior,” *Academy of Management Review*, 17 (1), 9-38.

Slovic, Paul (1987), “Perception of Risk,” *Science*, 236 (4799), 280-85.

Slovic, Paul, Baruch Fischhoff, Sarah Lichtenstein, Bernard and Barbara Coombs (1977), "Preference for Insuring Against Probably Small Losses:Insurance Implications," *The Journal of Risk and Insurance*, 44 (June), 237-58.

Smith, Vernon L. (1968), “Optimal Insurance Coverage,” *Journal of Political Economy*, 76 (1), 68-77.

Spiller, Stephen A., Gavan J. Fitzsimons, John G. Lynch, and Gary H. McClelland (2013), "Spotlights, Floodlights, and the Magic Number Zero: Simple Effects Tests in Moderated Regression," *Journal of Marketing Research*, 50 (2), 277-88.

Spinnewijn, Johannes (2013), "Insurance and Perceptions: How to Screen Optimists and Pessimists," *Economic Journal*, 123 (569), 606-33.

Taylor, Shelley E. (2010), "Mechanisms Linking Early Life Stress to Adult Health Outcomes," *Proceedings of the National Academy of Sciences of the United States of America*, 107 (19), 8507-12.

Taylor, Shelley E. and Jonathan D. Brown (1988), "Illusion and Well-Being: A Social Psychological Perspective on Mental Health," *Psychological Bulletin*, 103 (2), 193-210.

Taylor, Shelley E., Margaret E. Kemeny, Lisa G. Aspinwall, Stephen G. Schneider, Richard Rodriguez, and Mark Herbert (1992), "Optimism, Coping, Psychological Distress, and High-Risk Sexual Behavior among Men at Risk for Acquired Immunodeficiency Syndrome (AIDS)," *Journal Of Personality and Social Psychology,* 63 (September), 460 – 73.

Taylor, Shelley E., Jennifer S. Lerner, Rebecca M. Sage, Barbara J. Lehman, and Teresa E. Seeman (2004), "Early Environment, Emotions, Responses to Stress, and Health," *Journal of Personality*, 72 (6), 1365-93.

Taylor, Shelley E., Lien B. Pham, Inna D. Rivkin, and David A. Armor (1998), "Harnessing the Imagination. Mental Simulation, Self-Regulation, and Coping," *American Psychologist*, 53 (4), 429-39.

Thompson, Debora V., Ishani Banerji, and Rebecca Hamilton (2015), “You Can’t Always Get What You Want: The Effect of Childhood Scarcity on Substitution Decisions,” Working Paper, Georgetown University, Washington, DC 20057.

Townsend, Claudia and Wendy Liu (2012), “Is Planning Good for You? The Differential Impact of Planning on Self-regulation,” *Journal of Consumer Research*, 39 (December), 688–703.

Troxel, Wendy M. and Karen A. Matthews (2004), “What Are the Costs of Marital Conflict and Dissolution to Children's Physical Health?” *Clinical Child and Family Psychology Review*, 7 (1), 29-57.

U.S. Department of Health and Human Services (2013), “Health Insurance Marketplace Premiums for 2014,” *ASPE Issue Brief*, Washington, DC: Government Printing Office.

Viscusi, W. Kip, Wesley A. Magat, and Joel Huber (1987), "An Investigation of the Rationality of Consumer Valuations of Multiple Health Risks," *The RAND Journal of Economics*, 18 (4), 465-79.

Ward, Scott (1974), “Consumer Socialization,” *Journal of Consumer Research*, 1 (September), 1-14.

Watson, David, Lee Anna Clark, and Auke Tellegen (1988), “Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales,” *Journal of Personality and Social Psychology*, 54 (6), 1063–70.

Weinstein, Neil D. (1980), "Unrealistic Optimism About Future Life Events," *Journal of Personality and Social Psychology*, 39 (5), 806-20.

White, Andrew E., Yexin Jessica Li, Vladas Griskevicius, Steven L. Neuberg, and Douglas T. Kenrick (2013), "Putting All Your Eggs in One Basket: Life-history Strategies, Bet Hedging, and Diversification," *Psychological Science*, 24 (May), 715–22.

Yan, Dengfeng, and Jaideep Sengupta (2013), "The Influence of Base Rate and Case Information on Health-Risk Perceptions: A Unified Model of Self-Positivity and Self-Negativity," *Journal of Consumer Research*, 39 (5), 931–46.

Zhao, Xinshu, John G. Lynch Jr., and Qimei Chen (2010), "Re-considering Baron and Kenny: Myths and Truths about Mediation Analysis," *Journal of Consumer Research*, 37 (August), 197–206.

APPENDIX

Additional analyses for Study 3 (Essay 1)

In Study 3, we conducted two types of additional analyses for health risk propensity by probing the interaction using spotlight analyses and floodlight analyses. Spotlight analyses revealed that financial threat led people from poor childhoods (1SD below the mean of childhood resources) to increase in their health risk propensity ($t(112) = 1.09$, $p = .28$). In contrast, financial threat led individuals from wealthy childhoods backgrounds (1 SD above the mean of childhood resources) to decrease in their health risk propensity ($t(112) = -2.34$, $p = .021$). Floodlight analyses revealed that people who reported childhood resources at or above 6.21 (approximately .58 SDs above the mean), had a decrease in risk-taking propensity coverage in conditions of financial threat ($B_{JN} = -2.41$, $SE = 1.22$, $p = .05$). In contrast, people who reported childhood resources at or below 1.66 (approximately 2.79 SDs below the mean), had an increase in risk-taking propensity in response to financial threat although this effect was not significant at the conventional level ($B_{JN} = 6.29$, $SE = 3.24$, $p = .054$).

APPENDIX

Additional analyses for Study 3 (Essay 2)

In Study 3, I conducted additional analyses for estimates of task completion times using each of the two childhood resources measures separately. The first set of analyses was done with the same 8-item measure of childhood resources used in Studies 1 and 2 (Rindfleisch et al. 1997). Results showed that childhood resources by financial threat interaction was not significant at the $\alpha = .05$ level ($F(1, 148) = 1.92$, $p = .17$). I next examined the relation between childhood resources and estimated time in each of the two experimental conditions to test for H2. In the control condition, there was no relation between childhood resources and the time estimated for task completion ($\beta = -.01$, $p = .91$). However, as predicted, in the financial threat condition, people from wealthier backgrounds indicated significantly *lower* estimated time ($\beta = -.22$, $p = .05$). Thus, although the childhood resources by financial threat interaction was not significant, further analysis did reveal that greater childhood resources was associated with lower estimates of task completion time in conditions of financial threat, supporting H2.

I next conducted similar analyses with the new 3-item childhood SES measure (Griskevicius et al. 2011, 2013; Mittal and Griskevicius 2014). Results showed a significant childhood resources by financial threat interaction effect ($F(1, 148) = 6.92$, $p = .009$). In the control condition, there was no relation between childhood resources and the time estimated for task completion ($\beta = .07$, $p = .56$). However, in the financial threat condition, people from wealthier backgrounds indicated significantly *lower* estimated time ($\beta = -.31$, $p = .005$). Thus, replicating findings from Study 2 and supporting H2, greater childhood resources was associated with lower estimates of task completion time

in conditions of financial threat. Given the similar pattern of results for the two sets of childhood resources measures, and because of their strong association ($r = .53$, $p < .001$), a composite was used for analyses in the study.