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A Normative Lay Theory of Risk-taking

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ABSTRACT

How do people make meaning of risk-taking? The present dissertation proposes a normative lay theory of risk-taking. The proposed model promotes the following core ideas: (a) Risk-taking is generally an ambiguous construct and requires the illumination of at least some dimensional parameters to disambiguate the risk behavior and risk-taker; (b) Observation of these parameters activate corresponding beliefs about risk-taking that allow observers to make meaning of the risk-taking; (c) This lay theory broadly reflects risk-taking in a bold but ideal form (*responsible risk-taking*) or a rash and inferior form (*reckless risk-taking*). This lay theory, in turn, can facilitate distinct sets of perceptions, attitudes, intentions, and behaviors. The first chapter of this dissertation reviews the nature of risk-taking and the power of lay theories, explains how the lay theory of risk-taking is structured by an integration of these literatures, and describes the proposed lay theory's potential utility for predicting risk-related perceptions, attitudes, and behaviors. Subsequent chapters describe empirical tests of the lay theory's focal parameters. A series of experiments test and find evidence for four parameters that facilitate observers to evaluate risk-taking as responsible or reckless and potentiate a willingness to personally take risks. Risk-taking was generally perceived as responsible (vs. reckless) and personally worthy of imitation when the risk-taker was competent (vs. incompetent), deliberative (vs. impulsive), prosocial (vs. antisocial), and successful (vs. failed). Knowing whether the outcome of the risk taken was successful or failed tended to have an independent, additive effect when crossed with the other parameters.

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DEDICATION

I dedicate this dissertation to my loving partner of eleven years, J.W. Calvery, my dear mother,

Terri Wages, my deceased father, James E. Wages II, and my two younger brothers who always

have my back, Jacob Wages and Curtis Wages. I hope I made you proud.

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Chapter I: Introduction

A Normative Lay Theory of Risk-taking

"It is only by risking our persons from one hour to another that we live at all." (James, 1895, p. 21).

As a justification for why life is worth living, the quoted words asserted by the father of American psychology William James (1895) highlight the ubiquitous human confrontation of risk to pursue goals. James was hardly the first mind to muse on the nature of risk or how other people come to think about it. Aristotle (2000) posited that the willingness to face one's fears and make a decision with uncertain outcomes constitutes one of the seven heavenly virtues. Aristotle suggested that people should aspire to be courageous to live a good life and to find a greater sense of purpose. He referred to risk-taking behavior as courage (or bravery). Abraham Maslow (1968) shared Aristotle's evaluation of courage and considered it to be a key mechanism for people to fulfill their peak of needs, to self-actualize. Critical to Aristotle's theories of virtue was the sense of moderation. Aristotle was clear that an excess of any virtue is just as immoral as a deficiency of virtue in the eyes of observers. For example, an excessive willingness to be courageous (or take risks) is viewed as rash and foolish, because it could result in a serious hazard or even death. However, a deficiency of courage (or reluctance to take risks) would be seen as cowardly.

Despite these early notions of how risk-taking is conceptualized and evaluated by observers, little empirical work in psychology has focused on how everyday people come to make meaning of risk-taking, the specific features relevant to form those meanings, and how such meanings influence perceptions, attitudes, and behaviors. The current work attempts to address this gap in the psychological literature and empirically test whether people make

meaning of risk-taking using a normative lay theory of risk-taking that posits that risk behavior is viewed with a sense of either responsibility or recklessness.

How do people make sense of risk-taking? What determines when risk-taking is viewed as good or bad? Can such beliefs influence a willingness to take risks? To shed light on these questions, the present dissertation describes a normative lay theory of risk-taking. As will be discussed in greater detail later in this dissertation, psychologists refer to lay theories as to how lay persons make intuitive meaning of psychological phenomena, natural processes, and generally how the world works (e.g., Molden & Dweck, 2006; Plaks, 2017). My model, called a normative lay theory of risk-taking, proposes the following central assumptions: (a) Risk-taking, on the whole, is inherently ambiguous and is disambiguated from the illumination of at least a few important parameters; (b) Observation of these parameters can automatically activate beliefs about risk-taking to make meaning of the risk-taking; (c) This lay theory broadly reflects risk-taking in a bold and favorably connoted form (*responsible risk-taking*) or in a rash and unfavorably connoted form (*reckless risk-taking*). These beliefs, in turn, can facilitate distinct sets of perceptions, attitudes, and behaviors.

My lay theory specifically predicts that under certain conditions, observers will think of risk-taking in a way that is responsible, courageous, and admirable. In these conditions, they will view risk-takers and their behavior as responsible if the risk-taker is competent. Further, these favorable evaluations will follow if the risks involved are deliberately taken, prosocial, and characteristic of success. Yet under other conditions, observers will think of risk-taking in a way that is reckless, rash, and contemptuous. In these conditions, they will view the risk-taker and their behavior as reckless if the risk-taker is incompetent. These unfavorable evaluations will result if the risks involved are impulsively taken, antisocial, and characteristic of failure. Each set

of parameters represents components of a lay theory of risk-taking that is proposed to offer a frame for how risky behavior can be perceived and evaluated, therefore providing a basis for whether the risky behavior is encouraged for the observer to emulate. Though these parameters may tend to covary in the minds of perceivers, the posited parameters need not be simultaneously activated for the lay theory to be useful for the perceiver. As different parameters come to focus, corresponding sets of features are theorized to be automatically activated.

In the first half of this chapter, I review the literature on how people come to take risks as well as the literature on how lay theories (or mindsets) can shape how people make meaning of psychological phenomena. In the second half of this chapter, I describe the lay theory itself: its hypothesized parameters and its potential utility for providing a new way to think about how people perceive, value, and approach risk. It is from this literature review that I report the aims and eventual results of my dissertation studies.

The Nature of Risk-taking

Before explaining the details of my model, it is important to discuss what a normative lay theory seeks to intuitively elucidate among lay persons: risk-taking. The behavior of taking risks has received much attention in the behavioral, biological, economic, psychological, and social sciences (Mishra, 2014; Mishra, Barclay, & Sparks, 2017). Many researchers are interested in why people take risks (and refuse to take risks), who is more or less likely to take risks, under what conditions risk-taking is more or less likely, and what are the consequences of risk-taking on relevant health, safety, economic, and career domains, to name a few. In this section, I will define risk and review risk-taking based on the literature, and describe the prevailing theories of risk-taking as researchers understand them.

What is Risk?

Researchers across the sciences have largely agreed that the concept of risk refers to outcome variance or how certain or probable a set of outcomes will be given a behavior (Bernoulli, 1738; Blais & Weber, 2006; Byrnes et al., 1999; Daly & Wilson, 1990, 2001; Friedman & Savage, 1948; Mishra, 2014; Mishra et al., 2017; Real & Caraco, 1986; Rubin & Paul, 1979; Winterhalder, Lu, & Tucker, 1999). Risk-taking is then defined as the act of selecting (or taking) the option that is associated with greater variability in outcomes than other more certain options (Byrnes et al., 1999). Another way to think about this broadly is that risky behaviors are those with greater associated outcome variability than other considered alternative behaviors or no action at all (Mishra et al., 2017). For example, an option that yields a 50% chance of success is considered a riskier option than one that involves a 100% chance of success. Consider this in economic payout terms: a gambling option that is associated with a 50% chance at winning $100 is also riskier than an option of receiving $50 guaranteed (100% chance) despite that both options, in this case, have an equal expected outcome of $50 (i.e., the first option is .50 probability × $100 possibility = $50 expected value; the second option is 1.00 probability × $50 possibility = $50 expected value). A more straightforward way to define risk-taking is the engagement in a behavior that would result in an outcome that could be positive or negative.

Experts' definition of risk and risk-taking does not assume value judgment such as danger, hazard, threat, or necessarily uncertainty (Mishra et al., 2017). This means that the range of possible outcomes includes those that are both positive and negative in valence. Choices and options that are considered dangerous, hazardous, or threatening typically only represent potentially negative, unwanted outcomes, or downside risks (McNeil et al., 2005). Options that only compromise of upside risks are thereby considered certainly good choices. Uncertainty, by

contrast, refers to options with largely unknown outcome probabilities; however, risk involves at least some knowledge of possible outcomes and their associated probabilities (Knight, 1921; Tversky & Fox, 1995). Knowledge of outcome variance can include exact probabilities of such information when it is known and available to the decision-maker; however, arguably more often, proxies of the information, such as prior knowledge or qualities to signal more or less variance, can be used to assess risk (Mishra et al., 2017).

Despite this broad and inclusive definition of risk, sometimes risk takes on a negative connotation in some literature—particularly public health—as reckless or irrational behavior (Leith & Baumeister, 1996; Morgenroth, Fine, Ryan, & Genat, 2018; Pham, 2007). However, risk also can take on especially positive connotations in other literature, such as leadership, courage, and goal pursuit (e.g., Eratc & Gurdal, 2012; Frost, Fiedler, & Anderson, 1983; Gal & Rucker, 2020). Therein lies the crux of the current investigation: Though risk has a quite sterile and mathematical definition, the meaning lay people (and perhaps even some experts) may impose on risk potentially represents a divergence from the way risk is conceptualized scientifically to the way it is intuitively thought about among lay audiences. As will be described later in this dissertation, how lay people come to intuitively understand how behavior works— regardless of how researchers understand it—can influence their perception of and engagement with the behavior and how they perceive, evaluate, and make attributions of other people who engage in the behavior (e.g., Molden & Dweck, 2006).

Why Do People Take Risks?

When approaching why people engage with risk, historically researchers have focused on individual differences to predict risk-prone or risk-averse behavior (Eysenck & Eysenck, 1977; Mishra et al., 2011; Slovic, 1964; Zuckerman, 2007). These lines of research suggest the pursuit

of risk is largely a matter of certain individuals or dispositions having a more or less propensity

to seek (or avoid) risk and novel sensations. This is also where demographic differences are

employed as well, in that adolescent and young adult males are considered to be the most risk-

prone (Daly & Wilson, 1990, 2001; Wilson & Daly, 1985, 1997). Further, a willingness to take

risks is especially prevalent among White men in the United States (Finucane et al., 2000). Risk

propensity was mostly considered domain-general, meaning that if an individual were prone to

take risks in one situation or domain (such as gambling or other financial risks), they would be

likely to take risks in other situations (such as smoking or other health risks). However, more

recent work suggests that the risk propensity of individuals can vary considerably across

domains (e.g., Blais & Weber, 2006; Weber, Blais, & Betz, 2002), suggesting that risk

propensity is domain-specific. Indeed, the variance observed within individuals across domains

on risk propensity is about seven times larger than the variance observed between individuals

(Blais & Weber, 2006).

The individual differences approach to risk (and theories that assume rational thinking in

decision-making, more broadly) was challenged by the influential work of Daniel Kahneman and

Amos Tversky. Kahneman and Tversky (1979) developed prospect theory which suggested that

when people assess risk and decide which options to take, they tend to be disproportionately

sensitive to potential losses relative to gains of the same magnitude (also Kahneman & Tversky,

1979). One way in which prospect theory was demonstrated was through the framing of

probabilities of available options in terms of losses or gains, which directly and strongly

influenced participants' willingness to select risky options (Tversky & Kahneman, 1981, 1992).

For example, in a hypothetical disease and treatment decision scenario, participants tended to

select options—regardless of the amount of risk involved—that were framed as lives saved

rather than framed as the number of lives that would die, even though the expected value of lives saved and died was equal across conditions. This disproportionate sensitivity to and avoidance of potential losses relative to gains is known as loss aversion (Kahneman & Tversky, 1979; Kahneman & Tversky, 1992). Though findings suggest most people tend to be averse to taking risks (e.g., Loewenstein, Weber, Hsee, & Welch, 2001; von Gaudecker, van Soest, & Wengstrom, 2011), people are willing to take risks with important life decisions as a way to display courage and to have a sense of purpose (Gal & Rucker, 2020). These findings importantly illustrate that risk-taking can be facilitated or depressed under situational conditions and is not merely a matter of individual propensities toward risk behavior. Furthermore, this work highlights the need for humans to rely on cognitive heuristics to make sense of the world and to more easily make decisions (Kahneman & Tversky, 1984; Tversky & Kahneman, 1973, 1974, 1981), a primary function of what lay theories serve, which will be reviewed later in this dissertation chapter.

The Relative State Model

Contemporary theorizing on what leads people to pursue risk has been updated to integrate both dispositional and situational factors with the relative state model (Mishra et al., 2017). The relative state model suggests that people seek risk through two non-independent paths: need-based and ability-based. The following passages summarize the relative state model.

The need-based path to risk-taking posits that people who are disadvantaged relative to others seek risky options as a way to pursue goals that would otherwise be unattainable by playing it safe. Under the need-based path, risks are taken with a sense of desperation, such as when an organism is starving and searching for nourishment, and the organism has little to lose by taking the high-risk option (Mishra et al., 2017). This path is based on risk sensitivity theory,

a theory originally derived to explain why non-human animals engage in risky foraging behavior when their caloric needs are extremely high (Kacelnik & Bateson, 1997; Mishra, 2014). The experience of relative disadvantage and heightened need can come from both dispositional (e.g., personal incompetence) and situational (e.g., resource inequality) sources (Mishra et al., 2017). Reckless forms of risk-taking (such as reckless driving, substance abuse, promiscuity), particularly among adolescent males, are theorized to be one form of expression of need-based risk-taking coming from a relative position of disadvantage. This is because adolescents are developmentally in an extreme period of social, resource, and sexual competition with peers, but they are relatively disadvantaged with resources, power, and esteem in a society controlled by older, wealthy adults (Daly & Wilson, 1990, 2001; Mishra, 2014; Mishra et al., 2017; Wilson & Daly, 1985, 1997). In other words, the need-based path to risk is one in which people choose when the only way to potentially meet their goal is to desperately take risks.

The other path people take to seek risk is the ability-based path. The ability-based path predicts that people who are relatively advantaged take risks because they have the abilities and resources that facilitate a greater chance of success (Mishra et al., 2017). Instead of taking risks out of desperation, ability-based people take risks because they are better able to succeed and experience the potential benefits of the risk as well as better able to avoid or endure the potential costs of the risks. For example, physically attractive, athletic, and intelligent persons (vs. persons low in these qualities) are more likely to take risks in corresponding domains (e.g., mating, sports, puzzles) because they are better able to succeed in those domains (e.g., Refaie & Mishra, 2020). Forms of risk-taking through the ability-based path require embodied or social capital, such as physical size and strength, sophisticated knowledge and cognitive processing, and/or social skills in persuasion and coalition-building (Mishra et al., 2017; Refaie & Mishra, 2020).

The ability-based path to risk is one in which people take when they have the capital needed to successfully navigate the risk and potentially benefit as well as absorb the potential costs.

Unlike need-based risk-taking, ability-based risk-taking would appear to take on a more positive connotation. This is consistent with the current dissertation's theorizing of how people intuitively conceptualize and make meaning of risk-taking. The need-based path to actual risk-taking behavior parallels the hypothesized reckless style of risk-taking at least with regard to the observable characteristics of the risk-taker and their behavior. That is, relative to ability-based, need-based risk-taking is lower on embodied capital (i.e., competence) and less likely to succeed. Both are features of reckless risk-taking. Conversely, the ability-based path is similar to the predicted responsible style of risk-taking, particularly with risk-takers portrayed as relatively more competent and more likely to succeed. Absent from the normative lay theory of risk-taking is several details that the relative state model specifics, such that the need-based risk-taker is desperate, or the risk is the only way to pursue their goal (for the reckless risk-taking) or that the ability-based risk-taker is necessarily and always embodies the capital to successfully pursue the risk (for the responsible risk-taking). This would suggest the hypothesized lay theory of risk-taking is not necessarily far from the reality of why people actually take risks, though the lay theory is a more general and simplified understanding of risk based on what is easily observable from third-party perspectives. Now that I have discussed what risk is and how risk is broadly theorized to operate, the dissertation will now review the literature on the science of lay theories of psychological concepts.

The Lay Theories Approach

Humans are constantly confronted with making sense of the vast complexities of human behavior, psychological processes, natural processes, and how the world works. In other words, without necessarily complete, comprehensive, complex, or accurate information, people have to make sense of why people do what they do and the world that surrounds them in an easy and efficient way. The interpretive frameworks by which lay persons use to make intuitive meaning of phenomena and natural processes are called lay theories. Variations of lay theories are also called implicit theories, mental models, mindsets, naïve theories, folk theories, folk wisdom, or folk psychology. This dissertation will use the terms "lay theories" and "mindsets" interchangeably. Lay theories provide a framework from which people use to interpret complex social environments and psychological phenomena, creating meaning of this complexity that provides a sense of understanding and prediction (Molden & Dweck, 2006; Plaks, 2017). People come to rely on lay theories of many everyday processes to make sense of the complexity, especially when an accurate and complete understanding is not possible or feasible (Dweck, 2017; Levy, Plaks, Hong, Chiu, & Dweck, 2001; Molden & Dweck, 2006; Plaks, Levy, & Dweck, 2009). Lay theories often operate automatically, beyond the threshold of conscious awareness, and comprise largely unexamined assumptions about the world, which ultimately guide construals, judgments, and decisions. Lay theories provide a lens through which people can see the world, and they can powerfully influence people's evaluations, decisions, and behaviors. Given that risk-taking is a complex and multifaceted phenomenon that is open to interpretation, the lay theories approach is an apparently relevant but unexplored paradigm in the study of risk-taking.

The interest in people's lay theories of behavior and beyond has a long history of empirical inquiry in psychology. For example, Heider (1958) proposed that people build lay theories of how the world works as naïve scientists do by forming various hypotheses, gathering data (unsystematically) to test hypotheses, and using the results to form naïve theories. Kelly (1955) studied people's lay theories to understand personality and their close relationships. Subsequent researchers have focused on identifying the various lay theories people hold and how such mindsets influence perceptions, evaluations, and treatment of the self and others (e.g., Hong, Levy, & Chiu, 2001). Bowlby's (1982) work led to the notion that children form mental models to understand their relationship with and attachment to their caregivers. Sternberg (1985) found that people hold consistent lay theories regarding intelligence. Ross (1989) found that lay theories of personal attribute change or stability influenced the recall and construction of personal histories. This early work on lay theories laid the groundwork for the next generation of lay theory researchers to build on with greater complexity. Before diving into the specific normative lay theory of risk-taking, it is important to consider the potential utility of studying lay theories by reviewing the impact lay theories broadly have on perceptions, attitudes, behavior, and even physiology.

Researchers have empirically identified and examined a wide array of lay theories various people hold of the nature of humans and how the world works (e.g., creativity, mind wandering, essentialism, self-control, mind-body dualism, free will, intergroup relations, justice; Zedelius, Müller, & Schooler, 2017). A sizable focus of the literature has been on lay theories of intelligence and personality, specifically with regard to the malleability of such concepts (Molden & Dweck, 2006; Plaks, Levy, & Dweck, 2009). For example, if an individual believes that personal attributes are changeable and dynamic if desired, this person holds an incremental

(or "growth") lay theory; conversely, if an individual views such attributes as unchangeable and fixed, they hold an entity (or "fixed") theory (Dweck, 1999, 2008; Molden & Dweck, 2006). When specifically referring to notions of intelligence, individuals who see intelligence as something that can be cultivated and improved with effort, guidance, and resources use a growth mindset. However, those who view intelligence as a static attribute—often rooted in biological essentialism (Haslam, 2017)—believe that some people simply have more or less than others use a fixed mindset. These intelligence mindsets tend to correlate with a willingness to seek challenges, achievement, and how people respond adaptively to failure (Dweck, 2008). The fixed versus malleable lay theories framework has been applied to several domains, including self-regulation, social perception, interpersonal relationships, social development, and cultural psychology (see Molden & Dweck, 2006). Though lay theories can be persistently and strongly held, lay theories are changeable (Dweck, 2017; Molden & Dweck, 2006). Despite the breadth of lay theories to explain a variety of behaviors or the dominance of lay theories of malleability, the lay theory approach has not yet been applied to the concept of risk-taking. Given that risk-taking is common, complex, ambiguous, and consequential, a lay theories approach seems appropriate to better understand how laypersons conceptualize risk-taking. The remaining portion of the section exemplifies how lay theories can have a powerful impact on perceptions, attitudes, behaviors, and physiology.

Because mindsets are considered to occupy a psychological space intermediate to personality and are thereby more changeable than relatively enduring personality traits (Dweck, 2017), mindsets are considered malleable and an ideal area to intervene to restructure maladaptive belief systems, construals, and (lack thereof) motivations that prevent the self from flourishing (Dweck, 2017; Walton, 2014; Walton & Wilson, 2018). In fact, interventions

designed to change people's mindsets to be more growth-oriented have been met with remarkable success (albeit qualified; see Yeager & Dweck, 2020), primarily in educational achievement but also in mental health and well-being. For example, a brief set of nation-wide interventions that teach secondary school students in the United States that intelligence can be cultivated through effort, receiving feedback, and sufficient resources to succeed has been shown to increase grade achievement and academic challenge-seeking (i.e., taking advanced mathematics coursework), particularly among lower-achieving students (Yeager et al., 2019). If lay theories are relevant psychological components of how people engage with risk-taking, then this prior work on mindset interventions would suggest that it is possible to influence people's engagement with and interpretation of risk by manipulating their lay theory of risk-taking.

The power of lay theories is evident even when measuring the influence of lay theories on health and physiology, areas consequently important to risk-taking. For example, Crum and Langer (2007) found that changing the mindset of room attendants working in hotels to view cleaning rooms as part of their daily duties as "good exercise" recommended by the U.S. Surgeon General led participants to decrease their body fat and blood pressure compared to a control group who did not receive such information despite that actual levels of physical activity remained constant. Further, leading participants to adopt a mindset that stress is a feature of growth (vs. debilitation) led participants to have lower hormonal stress responses (i.e., cortisol reactivity) and a stronger motivation to seek challenges (Crum, Salovey, & Achor, 2013). Crum and colleagues (2011) even found that describing a milkshake as high in calories and "indulgent" (vs. low-calorie and "sensible") increased participants' physiological satiation (measured by gut peptide ghrelin) and self-reported satiation, despite that the milkshake was the exact same product and calorie count for both conditions. The implications of this work suggest that placebo

effects—or effects that occur despite a lack of pharmacological or medical treatment—is not merely a nuance or noise when developing treatments, but largely the effect of a mindset (i.e., beliefs, thoughts, and expectations) about the treatment effectiveness being activated psychologically and having a measurable influence on relevant physiological and behavioral outcomes (Crum, Leibowitz, & Verghese, 2017). This work further illustrates the influence lay theories and mindsets can have not only on perceptions, evaluations, and behavior, but also on physiology and health. Therefore, when using the lay theories approach to risk-taking, it is possible that lay theories could influence physiological processes that potentiate risk behavior and cognition.

In summary, this work shows that lay theories of various phenomena and processes can influence perceptions, evaluations, and behaviors, and therefore lay theories are relevant to consider for how people approach, perceive, and evaluate risk-taking and risk-takers. The consideration of lay theories in the conceptualization of intelligence, motivation, and health illustrates the potential candidacy of normative lay theories in other domains in which people engage and outcomes are consequential, such as risk-taking. The following section directly discusses the details of conceptualizing risk-taking with the normative lay theories approach and why such an approach is valid and warranted by the current literature.

A Normative Lay Theory of Risk-taking

So far, this dissertation has reviewed the pertinent literature on the nature of risk-taking and the science of lay theories. This section will review the tenets and assumptions of a normative theory of lay persons' conceptualizations of risk-taking as primarily a behavior that consists of responsible courage or reckless folly. The first assumption of the lay theory is that

risk-taking in itself is inherently ambiguous (Mishra et al., 2017; Tversky & Kahneman, 1992; Tymula et al., 2012) and open to different interpretations depending on the accompanying parameter information, if provided. This is where observers' lay beliefs of risk-taking could be useful to make sense of risk-taking. I predict that observers will find the proposed parameters to be relevant to disambiguate the risk-taking situation and the risk-taker involved. The proposed parameters should be useful to disambiguate risk-taking to the degree that risk-taking is perceived to be ambiguous.

The normative lay theory approach proposed by this dissertation aims to experimentally elucidate the hypothesized parameter components of people's lay theory of risk-taking and how such parameters influence responsible and reckless risk perceptions, evaluations of the risk-taking behavior, and the perceiver's own willingness to take the same risk. This is interesting and important, because little known research has been devoted to examining how people intuitively make meaning of risk-taking and what predicts observers' perceptions and evaluations of risk-takers and risk-taking behavior. According to social learning theory (e.g., Bandura & McClelland, 1977), people can learn to adopt behaviors by the observation and imitation of other people. Therefore, observers of other people taking risks could engage in the same risk-taking, particularly if observers view the behavior as advantageous wherein their lay theory of risk-taking may play a role.

It is important to clarify, however, that this dissertation focuses on testing a *normative* lay theory of risk-taking. That is, I am interested in the shared understanding of risk-taking, generally across people and not variable individual differences in such understandings. Though it may be possible (perhaps even likely) that people hold different sorts of individual mindsets

regarding risk-taking, like what is theorized with growth and fixed mindsets (Dweck, 2017), the current work exclusively investigates broad shared perceptions and reactions of risk-taking.

This dissertation will review a series of parameters that are hypothesized to be at the fore activating one of the two conceptualizations of risk-taking: either reckless or responsible. These parameters include qualities inherent to the risk-taker themselves (i.e., their dispositional level of competence and their level of impulsiveness when making the decision), the social context in which the risk is taken in relation to the self and others (i.e., prosocial vs. antisocial risk), and the knowledge of the outcome of the risk taken (i.e., success or failure). To justify these hypotheses, it is important to consider and review the literature that speaks to people's lay theory of risk-taking. In the following passages, I review the literature to this effect.

Parameter I: Target Competence

The first proposed parameter is whether the risk-taker observed is perceived to be competent or incompetent. Juxtaposed to warmth, competence is a core dimension of social perception and stereotyping of groups, individuals, and the self (e.g., Abele et al., 2016; Abele & Wojciszke, 2007, 2014; Cuddy, Fiske, & Click, 2007, 2008; Fiske, 2018; Fiske, Cuddy, & Glick, 2007). Sometimes competence is conceptualized in broader terms of the agency (or a sub-component thereof) alongside communion as a fundamental framework of orientations of social behavior (Bakan, 1966). Competence is viewed as the ability to enact intentions and accomplish goals (Fiske, Cuddy, & Glick, 2007). Competence reflects attributes of perceived ability, including intelligence, skill, efficacy, creativity, efficiency, achievement, and leadership.

As reviewed in the earlier section on the relative state model (Mishra et al., 2017), competence is considered to be an embodied capital attribute that is positively associated with ability-based risk-taking but negatively associated with need-based risk-taking. Further, as an

indicator of competence, embodied capital (operationalized as intelligence, dexterity, and attractiveness) positively predicted self-control and willingness to take investment-related risks but negatively predicted impulsivity, problem gambling, and criminal behavior (Refaie & Mishra, 2020). Frey and colleagues (2021) identified correlates indicative of competence (including fluid intelligence, education level, and income) that generally predicted risk preference and aversion depending upon the type of risk measured. For example, years of education predicted a willingness to take social risks (e.g., public speaking, publicly disagreeing with others' opinions, or leadership) and household income predicted a willingness to make financial investments; however, both educated and wealthier people were less likely to gamble money in behavioral risk tasks. This would suggest that people may associate responsible risk-taking with the competence of the risk-taker but conversely view reckless risk-taking to be associated with lacking competence.

Based on this literature, I predict that when observers are attempting to make meaning and disambiguate a risk-taking situation, they look to the competence of the risk-taker to determine whether the risk-taker can successfully navigate the risk behavior and engender a positive outcome (and avoid a negative outcome). For example, if an observer perceives the risk-taker as someone of high competence (e.g., as indicated by their educational attainment or the sophistication of their career), then they may assume that the risk taken must be for a sensible reason. This would be an example of the observer using a responsible understanding of risk-taking to make sense of the risk situation. However, if the risk-taking is obviously low on competence, then the observer could reasonably assume this person is probably making a mistake by taking such a risk as they lack the ability to know better. In this case, the observer would be using beliefs about reckless risk-taking to disambiguate the situation. The first

hypothesized parameter represents a lay belief that the competence of the target is relevant information for observers to interpret the risk-taker and their risk behavior, such that when competent (vs. incompetent) people take risks, observers will perceive them as more responsible (and less reckless), favor their risk-taking, and be more willing to emulate their behavior.

Parameter II: Decision Impulsivity

Another quality proposed to be relevant to observers in making meaning of risk-taking is the level of impulsivity (vs. deliberativeness) the risk-taker engages in the process of making the risk decision. Impulsivity is characterized as the tendency to make decisions without much consideration, often for short-term gains that neglect long-term consequences (Eysenck H. J., & Eysenck, M.W., 1987; Eysenck, S. B., & Eysenck, H. J., 1977; Whiteside & Lynam, 2001). Life history theory suggests that when in harsh and unpredictable ecologies, organisms are more likely to opt for risky options that produce more immediate benefits because they do not have the resources to delay gratification for larger rewards later (Giudice, Gangestad, & Kaplan, 2015). Despite this potential adaptive quality, impulsivity is seen as behaving and making decisions without the necessary deliberation that would potentially foresee negative consequences. In fact, recent work suggests that some people take risks, not for their preference for risk but rather their preference for quick rewards, a perception they have of risky options (Boon-Falleur, Baumard, & Andre, 2021). Horch and Hodgins (2013) examined the stereotype content of gamblers—a specific group that exemplified financial risk-taking—and found that they were stereotyped as impulsive, desperate, irresponsible, and irrational. This work suggests that impulsivity is connected to risk behavior but generally does not have a positive connotation consistent with responsible risk-taking.

Based on this literature, I predict that when risk-takers appear impulsive, observers will view the risk-taker and their behavior as more reckless and less responsible. Specifically, because observers perceive the risk-taker as impulsive with regard to risk-taking, observers will interpret this lack of thoughtful deliberation as likely to lead to costly consequences. For example, if an observer sees that a risk-taker chooses a risky option with little to no deliberation of that decision, then observers are likely to assume the risk-taker chose the risky option that is unworthy because they did not give it enough thought. Conversely, if the risk-taker was observed as highly deliberative and gave a lot of thought to the options before making a decision, the observer could interpret the high processing of the risk options as an ultimately worthy decision to make. In the former case, impulsive beliefs about risk-taking should likely activate a reckless understanding of risk-taking; however, in the latter case, the deliberative approach to risk-taking should prompt observers to view this as an instance of responsible risk-taking. The second hypothesized parameter represents a lay belief that the impulsiveness of the target's decision is relevant information for observers to interpret the risk-taker and their risk behavior, such that when people take impulsive (vs. deliberative) risks, observers should perceive them as more reckless (and less responsible), disfavor their risk-taking, and be less willing to emulate their risk-taking.

Parameter III: Risk Sociality

Although much is known in how people come to make decisions under risk, most of this work focuses on whether individuals are willing to take risks on behalf and at the expense of the self. Many of the risks taken in everyday life are not isolated to the self, but rather can also benefit and cost others. However, the social dynamics of risk-taking can be relevant components to making meaning of the risk-taking. Humans generally favor helping others (prosocial

behavior) over harming others (antisocial behavior) (Batson & Powell, 2003; Dovidio, Piliavin, Schroeder, & Penner, 2017; Penner, Dovidio, Piliavin, & Schroeder, 2005). When considering prosocial behavior in the risk domain, heroism is extolled (Eagly & Becker, 2005; Carlyle, 1891; Franco, Blau, & Zimbardo, 2011). Heroism is defined in terms of great courage and bravery and refers to individuals who voluntarily take risks on behalf of others, despite the possibility of serious physical injury, death, or extreme social sacrifice to the self (Eagly & Becker, 2005; Franco, Blau, & Zimbardo, 2011). What makes heroism interesting to consider with this dissertation is not the extreme amount of risk that is taken on, but rather that heroism is a risk posed to the risk-taker for the benefit of others.

Prosocial risk-taking behavior takes on quite a different meaning than risk-taking simply for one's own benefit, or worse, at the expense of others, the latter of which would be considered to be antisocial behavior (e.g., violence, theft). Indeed, in the realm of risk, antisocial risk-taking is considered a risk that people take for personal gain that is at least partially at the expense of others (Mishra et al., 2017). This sort of antisocial risk-taking is highest in the precarious period of adolescence and emerging adulthood as a rather reckless way to compete for status and mates (Daly & Wilson, 1990, 2001; Mishra, 2014; Wilson & Daly, 1985, 1997). This work suggests risks taken on behalf of others and at the expense of the self would be viewed admirably; however, the opposite—risks taken on behalf of self, at the expense of others—would be viewed with contempt.

Based on this literature, it is reasonable to suggest that observers would use cues of prosociality and antisociality of the risk taken to make meaning of the risk situation as reckless or responsible. Specifically, evidence of prosociality with the risk-taking behavior will likely be interpreted as a positive intention of the risk-taker and one that is socially responsible. For

example, if an observer sees that a risk-taker takes risks wherein the potential payoff benefits others, but the potential costs are primarily to the risk-taker, then observers are likely to assume the risk-taker chose the risky option because they are selfless and altruistic. Conversely, if the risk-taker's decision could only benefit the self but the potential costs are for others, the observer could interpret this decision as a selfish and inconsiderate act of recklessness. In the former case, a prosocial risk taken should likely activate an observer's responsible understanding of risk-taking; however, in the latter case, an antisocial risk taken should cause observers to view this as an instance of reckless risk-taking. The third hypothesized parameter represents a lay belief that the sociality of the risk taken is relevant information for observers to interpret the risk-taker and their risk behavior, such that when people take prosocial (vs. antisocial) risks, observers should perceive them as more responsible (and less reckless), favor their risk-taking, and be more willing to emulate their risk-taking.

Parameter IV: Outcome Knowledge

The final parameter to be examined in this dissertation is the knowledge of the outcome of the decision under risk. Often with measuring risk preferences or decision-making in an economic risk game, the resulting outcome of the proposed risk option is not available. From the perspective of a decision-maker, this makes sense as it is not possible to know the outcome before the decision has been made unless one has supernatural foresight (which, of course, there is not sufficient evidence of). However, from the perspective of a third-party observer, an unknown outcome is not required to make meaning of risk-taking and a risk-taker. That is, meaning can be made with or without the resulting outcome being made known. Seminal work by Baron and Hershey (1988) found that the knowledge of the outcome of risks taken strongly impacted the evaluation of the risk decision. That is, when observing others who made decisions

regarding medical treatments or financial gambles, participants evaluated the decision-makers as more competent, their thinking as better, and thought the success was more likely to occur when the outcome was favorable (vs. unfavorable). This was all found despite that those participants reported that outcome knowledge should not influence the evaluation of the decision.

This "outcome bias" has been further studied and extended to social perception (Allison, Mackie, & Messick, 1996), ethical judgments (Mazzocco, Alicke, & Davis, 2004), management and investments (e.g., Sezer, Zhang, Gino, & Bazerman, 2016), and meta-science and publication decisions (Callaham, Wears, Weber, Barton, & Young, 1998; Francis, 2012). Within the domain of risk, outcome failure from a risk taken without insufficient justification was perceived as reckless and blameworthy (Melburg & Tedeschi, 1981). A related psychological phenomenon—hindsight bias—takes outcome bias further and tends to allow people to erroneously believe that they would have predicted the observed outcome (Hawkins & Hastie, 1990). Taken together, this work finds that knowledge of outcomes can influence their judgments and evaluations of decisions and events that would not be present if the outcomes were unknown. This work might suggest that people may associate responsible risk-taking with more favorable outcomes, but conversely view reckless risk-taking to be associated with more unfavorable outcomes.

Given that knowledge of the outcomes can bias people's evaluation of decisions and decision-makers, I posit that outcome knowledge can influence how people make meaning of risk situations. I predict that when observers are attempting to disambiguate the risk situation, they will use outcome knowledge (successful or failed outcome) as a cue to activate an understanding of risk-taking. For example, if an observer sees that the outcome of the risk taken was successful, then they will assume the risk taken was responsible and bound to evoke success.

This would be an example of the observers using a responsible understanding of risk to make sense of the situation. However, if the outcome was a failure, then the observer could assume that the risk taken was foolish and would likely have yielded failure. In this latter case, the observer would have used a reckless understanding of risk-taking to disambiguate the situation. The fourth hypothesized parameter represents a lay belief that the outcome of risk taken is relevant information for observers to interpret the risk-taker and their risk behavior, such that when people take risks and the outcome was successful (vs. failed), observers should perceive them as more responsible (and less reckless), favor their risk-taking, and be more willing to emulate their risk-taking.

Conclusion

This dissertation proposes that in part due to the ambiguity inherent within risk-taking behavior and the widespread use of lay theories, third-party observers of risk-taking seek information from the context to disambiguate and understand the situation. As a way to easily and efficiently organize and use this contextual information, observers impose meaning on the risk situation by relying on a lay theory of risk-taking. This dissertation proposes that risk-taking is understood primarily in one of two ways depending on the observable parameter information. One understanding of risk-taking sees risk behavior as a reasonable, admirable, and bold way to pursue goals. This is called responsible risk-taking. The other understanding of risk-taking views risk behavior as an irrational, contemptuous, and rash way to pursue goals. This is termed reckless risk-taking. Each understanding is theorized to provide a lens through which to view the risk behavior and the risk-taker and colors their overall perception and evaluation of the target and situation. Table 1 provides an abbreviated overview of the lay theory and the predicted parameters for both of the hypothesized beliefs of risk-taking.

Table 1: Parameter Overview

Observable Parameters	Observer's Interpretation	
	Responsible	Reckless
I. Target Competence	Competent risk-taker	Incompetent risk-taker
II. Decision Impulsivity	Deliberative risk decision	Impulsive risk decision
III. Risk Sociality	Prosocial risk taken	Antisocial risk taken
IV. Outcome Knowledge	Outcome success	Outcome failure

The understanding of risk-taking is proposed to depend on the content of the parameter information provided in the situation. Within this information, four focal parameters are predicted to be relevant. Cues of the target competence, decision deliberativeness, a prosocial risk taken, or outcome success are proposed to activate a view of risk-taking as responsible. Conversely, cues of target foolishness, decision impulsivity, an antisocial risk taken, or outcome failure are proposed to activate a view of risk-taking as reckless.

It is worth noting that this dissertation does not claim to examine all possible or parameters relevant to the model currently proposed. Rather I propose this lay theory and these parameters are interesting and important steps to lay the foundation of research in this area. The significance of such findings would suggest that the meaning and interpretation of risk-taking could be influenced by contextual factors that are not necessarily considered to be important structures of the choice architecture of decisions made under risk in behavioral and decision science research. Further, if such parameter information can influence the observer's own willingness to engage in risk behavior, it would be important information to consider in how to present risk decisions to (dis)encourage risk-taking, similar to the revolutionary framing and loss aversion research by Kahneman and Tversky (1979).

The following chapters of this dissertation detail the current experiments that test whether four hypothesized parameters facilitate understanding risk-taking as responsible or reckless, as

indicated by the perceptions and evaluations of the risk situation and the risk-taker as well as participants' own willingness to take similar risks. Each of the four parameters will be tested independently (expect for outcome knowledge), to determine whether the contextual presence of each parameter dimension influences the perceptions and evaluations of the risk behavior and risk-taking in ways consistent with the hypothesized normative lay theory of risk-taking.

Overview of Experiments

This dissertation is designed to lay a foundation for the proposed lay theory by testing each of the hypothesized parameters that elucidate a normative lay theory of risk-taking. In each experiment, I hypothesize a parameter that would facilitate observers to evaluate risk-taking as unfavorably and construe it as reckless (as opposed to a favorable evaluation and responsible perception): (a) when the risk is taken by an incompetent (vs. competent) target (Experiments 1A and 1B) and when the risk taken in a way that is considered (b) impulsive (vs. deliberative) (Experiment 2A and 2B), and (c) antisocial (vs. prosocial) (Experiment 3A and 3B). The fourth and final parameter—outcome knowledge—will be tested by cross each of the aforementioned parameters with outcome knowledge, such that the effect of target competence, decision impulsivity, and risk sociality will be examined with the outcome unknown (Experiments 1A, 2A, and 3A, respectively) and also with the outcome known as successful or failed (Experiments 1B, 2B, and 3B). This design will allow us to explore whether outcome knowledge has an additive effect independent of the other parameters or has a multiplicative effect depending on said parameters. Given the primacy of outcome bias reported earlier in this dissertation on the influence of decision evaluation, we may anticipate outcome knowledge to interact with the influence of the other parameters, potentially overruling the importance of the other parameters.

Alternatively, the intention behind the other parameters may outweigh the importance of the outcome.

Chapter II: Experiment 1A

The first experiment reported in this dissertation tested whether the competence (vs. incompetence) of the target risk-taker being observed influences the evaluation of the risk behavior, the risk-taker, and the willingness to engage to make the same decision. Because I proposed that target competence will be considered relevant information when interpreting risk-taking, I predicted the risk behavior and risk-taker themselves that are perceived as competent (vs. incompetent) will be evaluated favorably. Favorability will be indicated by participants rating the competent (vs. incompetent) risk-taker target as more responsible and less reckless. Further, the risk behavior of the competent (vs. incompetent) risk-taker will be rated as less risky, less costly, and more beneficial. Lastly, I predicted that participants will be more willing to make the same decision as did the risk-taker who was perceived as competent (vs. incompetent).

Method

Participants and Design

Given the between-subjects design (two-tailed; alpha = .05), I needed 260 participants to have adequate power (.80) to detect a small-to-medium effect ($d = 0.35$). I decided to use this effect size, because I did not have a prior effect size to base this calculation and I wanted to use resources feasibly. I aimed to recruit 260 participants using Qualtrics survey software on the Amazon Mechanical Turk (MTurk) crowdsourcing platform in exchange for $0.75 for compensation. To ensure high data quality, the MTurk sample was collected via the Cloud

Research (formerly TurkPrime) companion platform that screens for high-quality MTurk

workers.

The sample consisted of 260 participants, including 128 women, 130 men, and 3 gender

nonbinary people. The sample was composed of mostly White people (191 White, 37 Asian, 21

Black, 12 Latino/a, 4 Native American, and 4 multiracial people) with ages ranging from 19 to

71 years ($M = 40.13$, $SD = 12.78$). The sample also tended to be well-educated (64% having a

bachelor's degree or higher) and politically somewhat liberal ($M = 3.24$, $SD = 1.82$; 1 = very

liberal, 7 = very conservative).

The study design was a single factor (level of target competence) at two levels:

competent or incompetent. Participants were randomly assigned to one of two conditions via

Qualtrics randomization. Competence level was manipulated by presenting past behaviors the

target ostensibly did that clearly indicate the target is high or low in competence.

Procedure and Measures

After providing consent and agreeing to participate in the study, participants were

provided with a set of instructions that orient them to the experiment and provide a context and

cover story for the study's aims. The instructions conveyed that the current study's researchers

are interested in what the general public thinks about and evaluates the decisions that other

people make. Further, participants were told that in the current study they would review some

limited information about an (ostensibly) real person and decisions they made previously

reported. They also read that any identifying information of the person has been masked to

ostensibly maintain the anonymity and confidentiality of the previous participant. Participants

first reviewed the competent (or incompetent) behaviors the person supposedly reported doing at

some point in their adult life. These behaviors were taken from Judd et al. (2005)--a previously

tested way that manipulates the competence of a target (see Table 2 below for the stimuli to manipulate competence). To encourage engagement with and processing of the behaviors, participants were asked to sort the behaviors from most to least important and then write a brief impression of the target. This was followed by rating the competence of the target as a manipulation check.

Table 2: Behaviors to Manipulate Target Competence

	Competent Behaviors
1	worked hard on the extra-credit assignment in linear algebra
2	organized a student group to give feedback to the university administration
3	practiced violin piece 20 times a day; after a month, they had it right
4	published a short story in a literary magazine while still in college
5	travels extensively in Europe and speaks several languages
6	won the yearly award for the employee who contribute most the company's profits
7	wrote a little computer program that solved a tough calculus integration problem
8	is very careful when it comes to savings so that buying that first house will be possible

	Incompetent Behaviors
1	their electricity was turned off because the bill hadn't been paid
2	when called upon by the professor, they were confused and unable to answer the question in a coherent way
3	considered dropping out of school because of failing introductory psychology
4	their bicycle was stolen several times because they forgot to set the lock
5	did poorly on the exam because of mixing up the chapters that needed to be studied
6	had trouble finding work because they were always late for job interviews
7	coworkers have learned not to ask them to organize projects since they rarely get things done on time
8	took almost an hour find their car after parking it in a huge shopping mall

Participants then read that the target inherited a lump sum of money (the amount unspecified) and was presented the option to invest it in a new business venture. Participants further read that the U.S. Bureau of Labor Statistics estimates that approximately half of all new businesses succeed, and half fail within the first five years. Lastly, participants read that with the potential to double or lose this monetary inheritance, the target decided to invest in the new business venture (see Table 3 for the exact vignette). After reviewing this decision, participants were prompted to briefly write their thoughts on the decision to encourage engagement. For the remainder of the study, participants provided ratings of risk-taker, risk behavior, completed a brief demographic questionnaire, and then were debriefed and compensated.

Table 3: Experiment 1A Vignette

J.S. further reported unexpectedly inheriting a lump sum of money. When deciding what to do with this newfound money, J.S. was presented with the option of investing it into a new business venture. According to the U.S. Bureau of Labor Statistics, approximately half of all new businesses succeed, and the other half fail within the first five years. With the potential to either double or lose this money, J.S. decided to move forward and invest this money into a new business venture.

The measures consisted of a series of rating scales developed for this experiment. The following passages describe these measures.

Target Evaluations. Using 9-point semantic differential scales, participants rated the target on recklessness/responsibility using the following attributes: (a) irresponsible/responsible, (b) reckless/cautious, (c) careless/careful, (d) thoughtless/thoughtful, and (e) imprudent/prudent. These items were averaged into a single composite score (McDonald's Omega = .97), with higher scores indicating more responsibility and less reckless perceptions. To confirm the manipulation was effective, participants used the same scaling format to rate the target on

competence using the following attributes: (a) incompetent/competent, (b)

disorganized/organized, (c) incapable/capable, (d) unskilled/skilled, and (e) lazy/hard-working.

Items were averaged into a single composite score with higher scores indicating greater

perceptions of competence (McDonald's Omega = .98).

Behavior Evaluation. Using 7-point Likert-type scales, participants rated the [target]'s

risk behavior using the following items: (a) "Please indicate how risky you perceive the [target]'s

decision" (from *Not at all Risky* to *Extremely Risky*), (b) "how beneficial you perceive the

[target]'s decision" (from *Not at all Beneficial* to *Extremely Beneficial*), and (c) "how costly you

perceive the [target]'s decision" (from *Not at all Costly* to *Extremely Costly*).

Risk-taking Willingness. Using a 7-point Likert-type likelihood scale, participants rated

their own willingness to take the same presented risk as the target using the following item: "If

you were provided with the same options as [the target], please indicate the likelihood you would

make the same decision as [the target] from *Extremely Unlikely* to *Extremely Likely*."

Results

In addition to reporting the inferential statistics comparing group means, I have reported

the descriptive statistics (means, standard deviations, correlation matrix), the effect estimates and

corresponding 95% confidence intervals, and Cohen's *d* effect sizes for all of the analyses. All *t*-

tests are two-tailed and the alpha = .05.

Target Evaluations

Confirming the effectiveness of the manipulation, participants who reviewed the

competent target rated the risk-taker as more competent than the participants who reviewed the

incompetent target, M_{diff} = 5.24 (*SE* = .16), CI$_{95}$ [4.93, 5.55], $t(256)$ = 33.32, $p < .001$, d = 4.15.

See Table 4 for condition means and standard deviations. Importantly, participants who reviewed the competent target in light of their risky financial decision rated the risk-taker higher on the responsible attributes than the participants who reviewed the incompetent target who took the same risk, $M_{diff} = 2.53$ ($SE = .23$), CI$_{95}$ [2.08, 2.99], $t(256) = 11.00$, $p < .001$, $d = 1.37$. The correlations reported in Table 4 indicate that target ratings of competence were strongly and positively correlated with the target ratings of responsibility in light of the risk decision made.

Table 4: Experiment 1A Descriptive Statistics

Variables	Condition M (SD)		1	2	3	4	5
	Competent	Incompetent					
1. Target Competence	8.35 (1.12)	3.11 (1.39)					
2. Target Responsibility	5.77 (1.87)	3.24 (1.83)	.61*				
3. Risk Perception	4.78 (1.24)	5.82 (1.15)	-.43*	-.68*			
4. Benefit Perception	4.28 (1.51)	2.74 (1.50)	.45*	.77*	-.56*		
5. Cost Perception	4.30 (1.32)	5.25 (1.28)	-.38*	-.55*	.69*	-.47*	
6. Risk Willingness	3.59 (2.06)	2.46 (1.64)	.26*	.53*	-.46*	.59*	-.37*

Note. Ms indicate condition means, SDs indicate standard deviations, and matrix values indicate Pearson's r correlation coefficients and statistical significance notations.

* $p < .001$

Behavior Evaluation

As expected, participants who reviewed the competent (vs. incompetent) target evaluated their risky decision as less risky ($M_{diff} = -1.03$ ($SE = .15$), CI$_{95}$ [-1.33, -0.74], $t(256) = -6.97$, $p < .001$, $d = 0.87$), less costly ($M_{diff} = -0.94$ ($SE = .16$), CI$_{95}$ [-1.26, -0.62], $t(256) = -5.81$, $p < .001$, $d = 0.72$), and more beneficial ($M_{diff} = 1.54$ ($SE = .19$), CI$_{95}$ [1.17, 1.91], $t(256) = 8.24$, $p < .001$, d

= 1.03). As anticipated, risk perceptions of the risky decision positively correlated with cost

perceptions of the decision but negatively correlated with benefit perceptions. Further, both

target competence and responsibility perceptions were negatively correlated with risk and cost

perceptions but positively correlated benefit perceptions.

Risk-taking Willingness

As predicted, participants who reviewed the competent target indicated a greater

willingness to take the same risk as the target than those who reviewed the incompetent target,

$M_{diff} = 1.12$ ($SE = .23$), CI_{95} [0.67, 1.58], $t(256) = 4.86$, $p < .001$, $d = 0.61$. Risk-taking

willingness was positively correlated with target competence and responsibility perceptions as

well as benefit perceptions of the decision; however, risk-taking willingness was negatively

correlated with perceptions of the target's decision as risky and costly.

Discussion

Hypotheses were confirmed in the direction predicted, such that the target competence of

the risk-taker influenced evaluations of risk-taking favorably. Specifically, relative to the

incompetent risk-taker, the competent risk-taker was evaluated as more responsible and their

risk-taking behavior was perceived as less risky, less costly, and more beneficial. Further,

participants who reviewed the competent (vs. incompetent) risk-taker were more willing to take

the same risk as the target. This study provides initial evidence that risk-taking can be

disambiguated from other features of the risk situation, particularly regarding the competence of

the risk-taker. Such an influence is consistent with the idea that observers are using a risk

mindset to make sense of the risk-taking behavior. Perhaps most interesting, these findings

suggest that observing a person varying in competence can influence the perceiver's own

willingness to take a similar risk, providing evidence that the observation of risk-takers could influence risk-taking behavior itself.

Chapter III: Experiment 1B

The second experiment reported in this dissertation tested whether target competence (vs. incompetence) crossed with outcome knowledge influences the evaluation of the risk behavior, the risk-taker, outcome attributions, and the willingness to engage to make the same decision. Because I proposed that target competence and outcome knowledge will be considered relevant information when interpreting risk-taking, I predicted competent (vs. incompetent) and successful (vs. failed) risk-takers will be evaluated favorably. Favorability will be indicated by participants rating the competent and successful risk-taker as more responsible and less reckless. Further, the risk behavior of the competent and successful risk-taker will be rated as less risky, less costly, and more beneficial. I predicted that participants will be more willing to make the same decision as did the risk-taker who was perceived as competent and successful. This experiment also explores how participants attribute the observed outcomes as a function of outcome success/failure and target competence/incompetence. Lastly, this experiment explores the role outcome knowledge plays juxtaposed to target competence in understanding risk-taking.

Method

Participants and Design

Given the 2 × 2 between-subjects factorial design (two-tailed; alpha = .05), I needed 210 participants to have robust power (.95) to detect a medium effect and interaction (Cohen's f = 0.25; partial η^2 = 0.06). I decided to use this effect size, because I did not have a prior effect size

to base this calculation and I wanted to use resources feasibly. I aimed to recruit 300 participants using Qualtrics survey software on MTurk in exchange for $0.75 for compensation. To ensure high data quality, the MTurk sample was collected via the Cloud Research companion platform that screens for high-quality workers.

The sample consisted of 300 participants, including 137 women, 161 men, 2 transgender people, and 1 gender nonbinary person. The sample was composed of mostly White people (228 White, 26 Asian, 26 Black, 24 Latino/a, and 6 multiracial people) with ages ranging from 19 to 80 years ($M = 40.53$, $SD = 12.54$). The sample also tended to be well-educated (60% having a bachelor's degree or higher) and politically somewhat liberal to moderate ($M = 3.47$, $SD = 1.77$; 1 = very liberal, 7 = very conservative).

The study design was a 2 (target competence: competent, incompetent) × 2 (outcome knowledge: success, failure). Participants were randomly assigned to condition via Qualtrics randomization. Target competence was manipulated by presenting past behaviors the target ostensibly did that indicate the target is (in)competent. Outcome knowledge was manipulated by disclosing within the vignette whether the risk taken was a profitable success or total loss.

Procedure and Measures

The procedure and measures were identical to Experiment 1A except for the following details. In addition to manipulating target competence (the same procedure as Experiment 1A), the current experiment crossed target competence with the manipulation of outcome knowledge of risk decision made (the outcome of the risk decision in Experiment 1A was left unknown). To manipulate outcome knowledge, a final sentence of the vignette used in Experiment 1A was added that disclosed whether the risk taken successfully yielded a profit (doubling the investment) or failed (resulting in total loss). See Table 5.

Table 5: Experiment 1B Vignette

J.S. further reported unexpectedly inheriting a lump sum of money. When deciding what to do with this newfound money, J.S. was presented with the option of investing it into a new business venture. According to the U.S. Bureau of Labor Statistics, approximately half of all new businesses succeed, and the other half fail within the first five years. With the potential to either double or lose this money, J.S. decided to move forward and invest this money into a new business venture. As it turned out, the new business venture [*succeeded/failed*] in making a profit, and J.S.'s investment was [*doubled/completely lost*].

All of the same measures from Experiment 1A were used in the current experiment along with four additional items assessing participants' attributions of the observed outcome. The internal reliability of the scale ratings of competence (McDonald's Omega = .98) and of responsibility/recklessness (McDonald's Omega = .97) was strong.

Outcome Attribution. These items were based on Wiener's (1974) four distinct categories of how people generally make attributes for decision outcomes: ability, effort, task difficulty, and luck (including outcomes of risk-taking; Forgas, 1982). Participants were prompted to indicate to what extent did each of the following attributes contribute to the successful/failed outcome of the target's investment decision (1 = *None at all*, 7 = *A great deal*): (1) the target's "intelligence and ability to make the smart decision," (2) the target's "diligence and effort to think through the decision carefully," (3) "the inherent difficulty of making this kind of decision," and (4) "the pure luck involved in making this kind of decision." Each category of outcome attribution was analyzed and reported separately.

Results

Target Evaluations

Confirming the effectiveness of the competence manipulation, participants who reviewed the competent target rated the risk-taker as more competent than the participants who reviewed the incompetent target, $F(1, 296) = 1105.82$, $p < .001$, partial $\eta^2 = 0.79$. There was no main effect of outcome knowledge, $F(1, 296) = 0.70$, $p = .405$, or a competence by outcome interaction, $F(1, 296) = 3.91$, $p = .049$, on perceptions of competence. See Table 6 for condition means and standard deviations for all outcomes in the current study.

There was a main effect of target competence on responsibility/recklessness perceptions. Participants who reviewed the competent target rated the risk-taker higher on the responsible attributes than the participants who reviewed the incompetent target who took the same risk, $F(1, 296) = 68.95$, $p < .001$, partial $\eta^2 = 0.19$. There was also a main effect of outcome knowledge on perceptions of responsibility/recklessness. Participants who reviewed the successful outcome rated the risk-taker higher on the responsible attributes than the participants who reviewed the failed outcome of the same, $F(1, 296) = 47.43$, $p < .001$, partial $\eta^2 = 0.14$. These main effects were not qualified by a significant interaction, $F(1, 296) = 0.45$, $p = .505$.

Behavior Evaluation

Participants who reviewed the competent (vs. incompetent) target ($F(1, 296) = 18.71$, $p < .001$, partial $\eta^2 = 0.06$) and the success (vs. failure) outcome ($F(1, 296) = 9.99$, $p = .002$, partial $\eta^2 = 0.03$) evaluated the decision as less risky. These main effects were not qualified by a significant interaction, $F(1, 296) = 0.01$, $p = .940$.

There were not significant main effects of target competence on perceived cost ($F(1, 296) = 2.54$, $p = .112$) or perceived benefit ($F(1, 296) = 1.85$, $p = .175$). However, participants who

reviewed success (vs. failure) outcome viewed the decision to be less costly ($F(1, 296) = 200.93$, $p < .001$, partial $\eta^2 = 0.40$) and more beneficial ($F(1, 296) = 529.72$, $p < .001$, partial $\eta^2 = 0.64$). Though there was a competence by outcome interaction for perceived cost ($F(1, 296) = 5.79$, $p = .017$, partial $\eta^2 = 0.02$), there was not an interaction for perceived benefit ($F(1, 296) = 2.58$, $p = .109$). Bonferroni bias-corrected pairwise comparisons revealed that perceived cost did not differ by target competence when the outcome was successful ($M_{diff} = 0.15$, $SE = .26$, $p = 1.00$); however, the decision of the incompetent (vs. competent) target was viewed as more costly when the outcome was failure ($M_{diff} = 0.73$, $SE = .26$, $p = .028$). To help interpret the interactions, condition means have been visualized for outcomes with significant interactions. See Figure 1.

Figure 1: Cost Perception Means from Target Competence by Outcome Knowledge
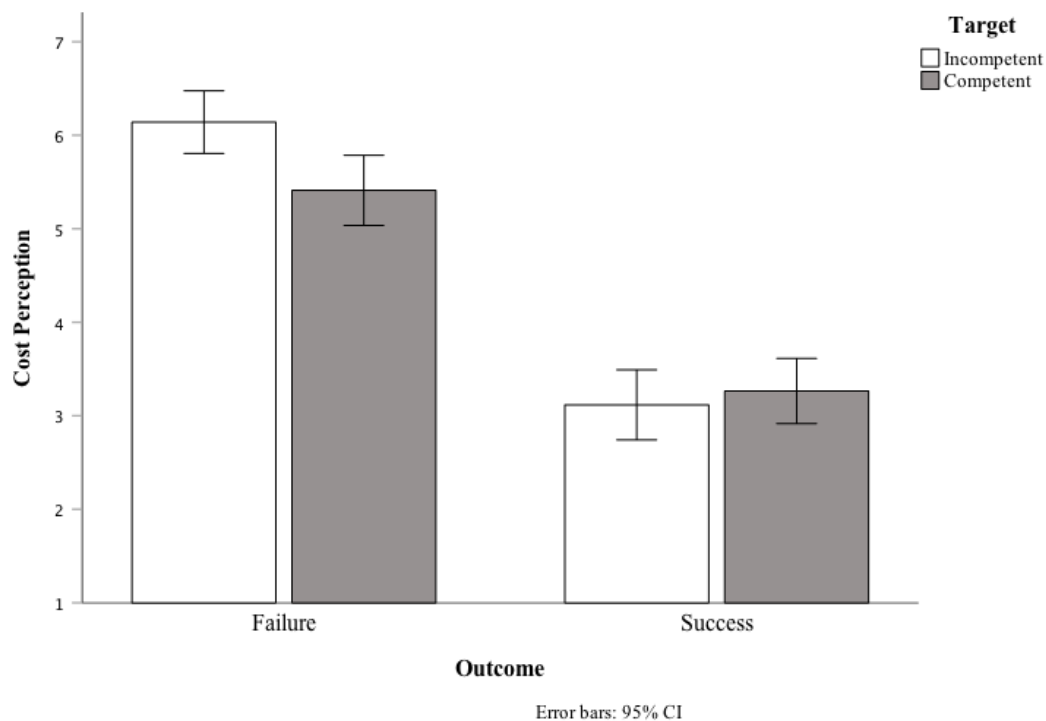
Error bars: 95% CI

Outcome Attribution

There was a main effect of target competence on attribution of the target's ability on the observed outcome, $F(1, 296) = 16.32$, $p < .001$, partial $\eta^2 = 0.05$, such that the target's ability was attributed more when the target was competent (vs. incompetent); however, there was no main effect of outcome knowledge, $F(1, 296) = 0.42$, $p = .516$. There was a target competence by outcome knowledge interaction, $F(1, 296) = 73.56$, $p < .001$, partial $\eta^2 = 0.20$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed ability to the successful outcome more for the competent (vs. incompetent) target ($M_{diff} = 2.52$, $SE = .29$, $p < .001$); conversely, participants attributed ability to the failure outcome less for the competent (vs. incompetent) target ($M_{diff} = -0.91$, $SE = .28$, $p = .008$). Participants also attributed ability more to the competent target when successful than when failed ($M_{diff} = 1.84$, $SE = .29$, $p < .001$); whereas participants attributed ability less to the incompetent target when successful than when failed ($M_{diff} = -1.58$, $SE = .28$, $p < .001$). See Figure 2.

Figure 2: Ability Attribution Means from Target Competence by Outcome Knowledge
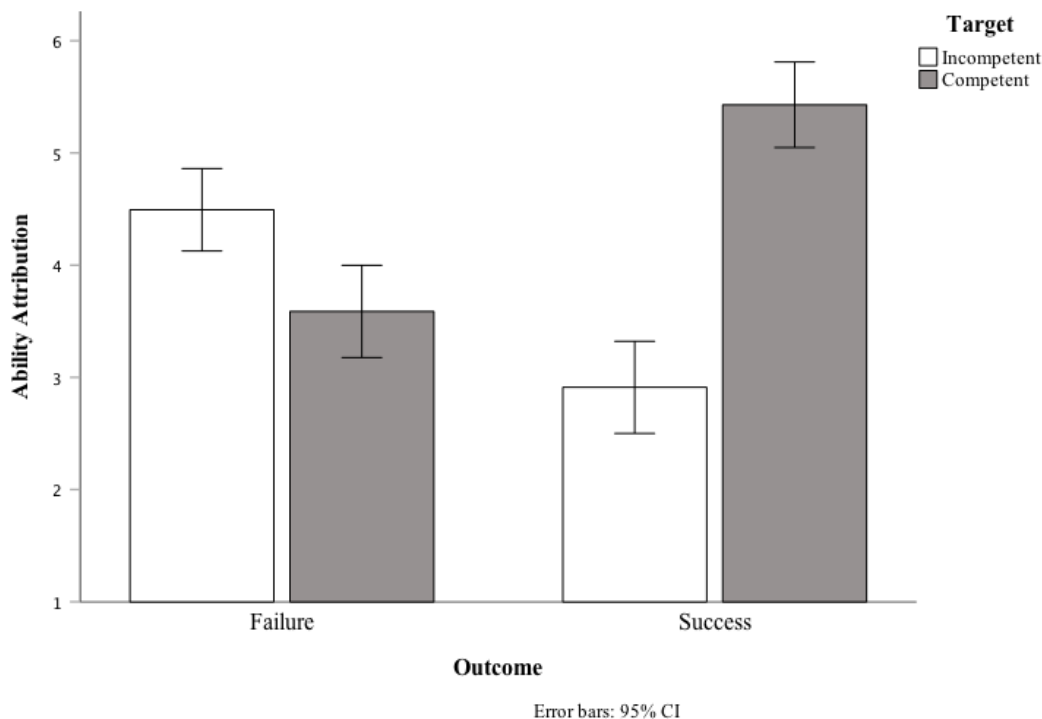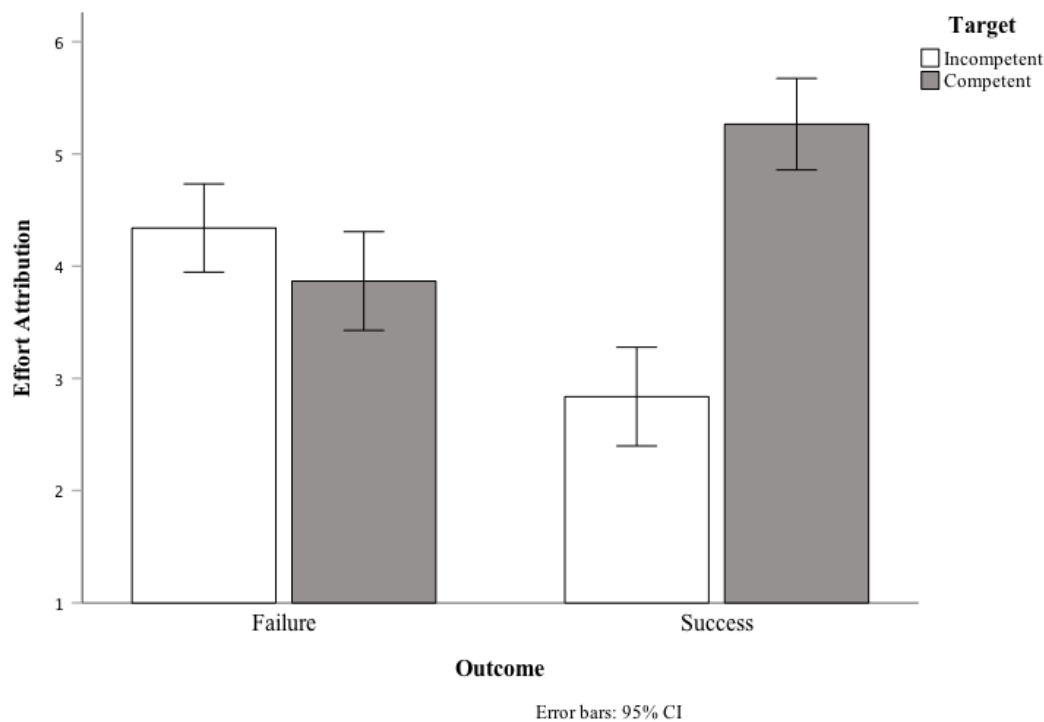

Error bars: 95% CI

There was a main effect of target competence on attribution of the target's effort on the observed outcome, $F(1, 296) = 20.88$, $p < .001$, partial $\eta^2 = 0.07$, such that the target's effort was attributed more to the outcome when the target was competent (vs. incompetent); however, there was no main effect of outcome knowledge, $F(1, 296) = 0.06$, $p = .807$. There was a target competence by outcome knowledge interaction, $F(1, 296) = 46.02$, $p < .001$, partial $\eta^2 = 0.14$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed effort to the successful outcome more for the competent (vs. incompetent) target ($M_{diff} = 2.43$, $SE = .31$, $p < .001$); however, participants attributed effort equivalently to competent and incompetent targets when the outcome failed ($M_{diff} = -0.47$, $SE = .30$, $p = .692$). Participants also attributed effort more to the competent target when successful than when failed ($M_{diff} = 1.40$, $SE = .31$, $p < .001$);

whereas participants attributed effort less to the incompetent target when successful than when failed (M_{diff} = -1.50, SE = .30, p < .001). See Figure 3.

Figure 3: Effort Attribution Means from Target Competence by Outcome Knowledge

Error bars: 95% CI

There was a main effect of target competence on the attribution of task difficulty on the observed outcome, $F(1, 296)$ = 6.33, p = .012, partial η^2 = 0.02, such that task difficulty was attributed more to the outcome when the target was competent (vs. incompetent). There was a main effect of outcome knowledge, $F(1, 296)$ = 28.26, p < .001, partial η^2 = 0.09, such that task difficulty was attributed more to the outcome when failed than when successful. There was a target competence by outcome knowledge interaction, $F(1, 296)$ = 6.62, p = .011, partial η^2 = 0.02. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed task difficulty to the successful outcome more for the competent (vs. incompetent) target (M_{diff} = 1.05, SE = .30, p = .003); however, participants attributed task difficulty equivalently to

competent and incompetent targets when the outcome failed ($M_{diff} = -0.01$, $SE = .29$, $p = 1.00$).

Participants attributed task difficulty to the competent target equivalently when successful and

failed ($M_{diff} = -0.57$, $SE = .30$, $p = .332$); however, participants attributed task difficulty less to

the incompetent target when successful than when failed ($M_{diff} = -1.63$, $SE = .29$, $p < .001$). See

Figure 4.

Figure 4: Task Difficulty Attribution Means from Target Competence by Outcome
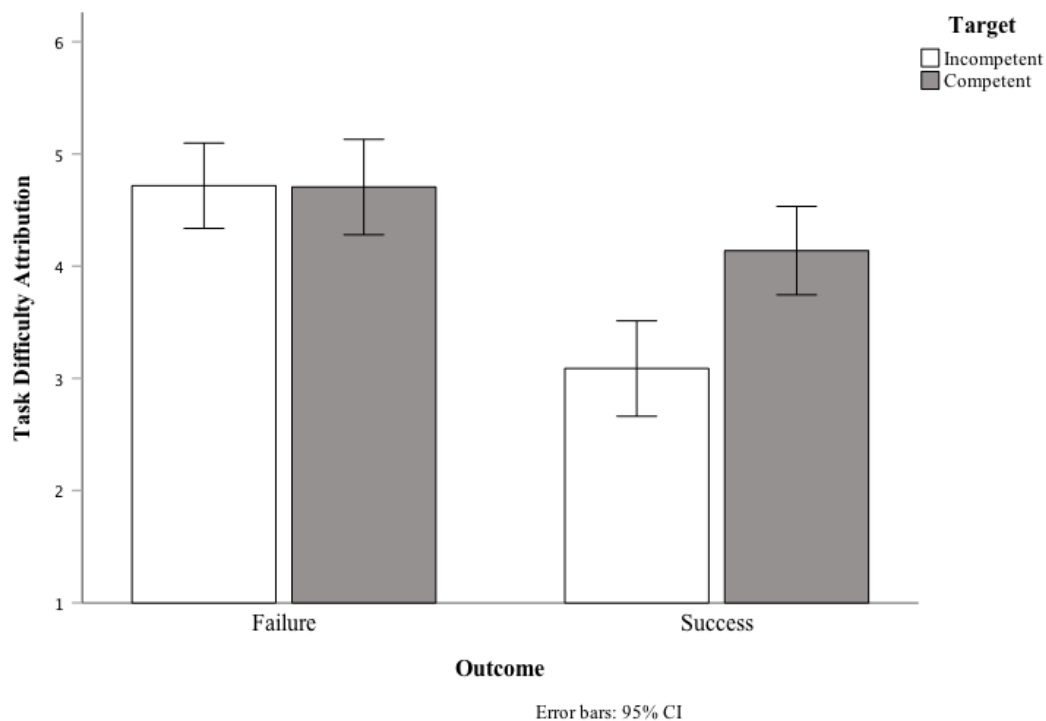
Knowledge

Error bars: 95% CI

There was a main effect of target competence on attribution of luck on the observed

outcome, $F(1, 296) = 7.01$, $p = .009$, partial $\eta^2 = 0.02$, such that luck was attributed less to the

outcome when the target was competent (vs. incompetent). There was a main effect of outcome

knowledge, $F(1, 296) = 28.45$, $p < .001$, partial $\eta^2 = 0.09$, such that luck was attributed more to

the outcome when successful than when failed. There was a target competence by outcome

knowledge interaction, $F(1, 296) = 18.01$, $p < .001$, partial $\eta^2 = 0.06$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed luck to the successful outcome less for the competent (vs. incompetent) target ($M_{diff} = -1.45$, $SE = .30$, $p < .001$); however, participants attributed luck equivalently to competent and incompetent targets when the outcome failed ($M_{diff} = 0.34$, $SE = .30$, $p = 1.00$). Participants attributed luck to the competent target equivalently when successful and failed ($M_{diff} = 0.23$, $SE = .30$, $p = 1.00$); however, participants attributed luck more to the incompetent target when successful than when failed ($M_{diff} = 2.01$, $SE = .30$, $p < .001$). See Figure 5.

Figure 5: Luck Attribution Means from Target Competence by Outcome Knowledge
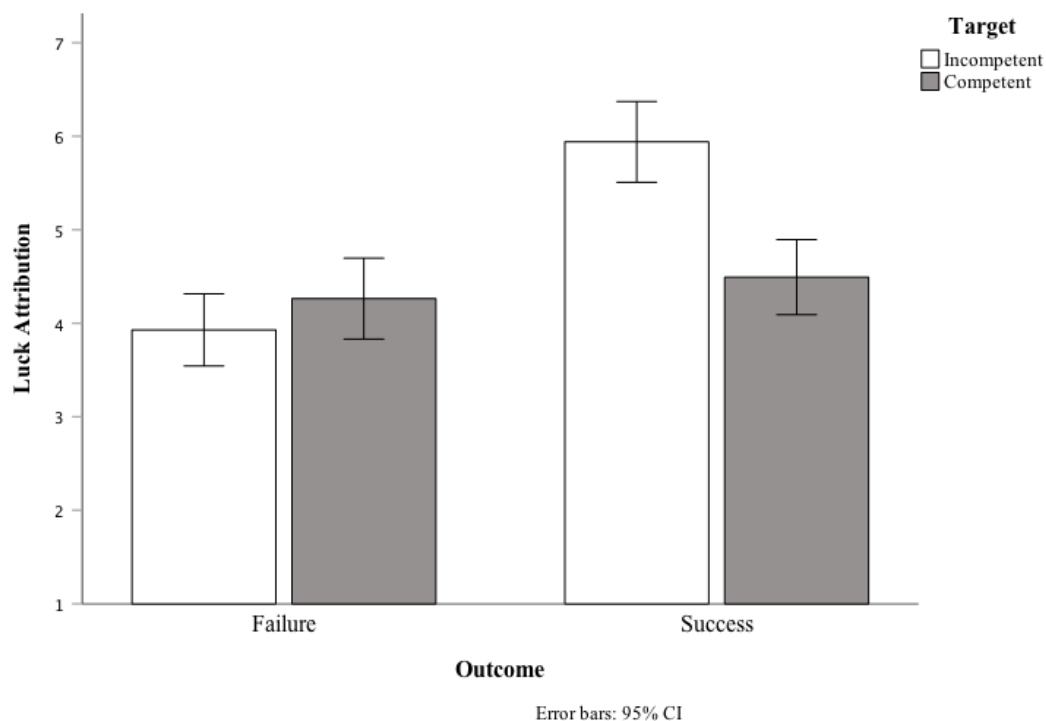

Error bars: 95% CI

Risk-taking Willingness

Participants who reviewed the competent target indicated a greater willingness to take the same risk as the target than those who reviewed the incompetent target, $F(1, 296) = 4.70$, $p =$

.031, partial $\eta^2 = 0.02$. There was also a main effect of outcome knowledge, $F(1, 296) = 6.56$, p = .011, partial $\eta^2 = 0.02$, such that participants who reviewed the successful outcome were more likely to take the same risk as the target than those who reviewed the failed outcome. These main effects were not qualified by a significant interaction, $F(1, 296) = 0.01$, $p = .916$.

Table 6: Experiment 1B Descriptive Statistics

	Incompetent Target		Competent Target	
	Outcome Failure	Outcome Success	Outcome Failure	Outcome Success
Competence Perception	2.86 (1.40)	3.30 (1.76)	8.42 (0.92)	8.24 (1.23)
Responsibility Perception	2.97 (1.78)	4.27 (1.82)	4.57 (1.87)	6.15 (1.76)
Risk Perception	5.96 (1.10)	5.51 (1.18)	5.35 (1.26)	4.92 (1.27)
Cost Perception	6.14 (1.03)	3.12 (1.97)	5.41 (1.37)	3.27 (1.81)
Benefit Perception	1.72 (1.31)	5.65 (1.24)	2.19 (1.70)	5.61 (1.24)
Ability Attribution	4.49 (1.96)	2.91 (1.65)	3.59 (1.81)	5.43 (1.41)
Effort Attribution	4.34 (2.15)	2.84 (1.74)	3.87 (1.71)	5.27 (1.67)
Task Difficulty Attribution	4.72 (1.87)	3.09 (1.96)	4.71 (1.54)	4.14 (1.71)
Luck Attribution	3.93 (1.95)	5.94 (1.31)	4.26 (1.76)	4.49 (2.05)
Risk-taking Willingness	2.61 (1.89)	3.16 (1.89)	3.07 (2.03)	3.67 (1.92)

Note. Condition means (standard deviations are in parentheses).

Discussion

Confirming the hypothesis and replicating Experiment 1A, target competence of the risk-taker consistently influenced evaluations of risk-taking and the risk-taker favorably. Specifically, relative to the incompetent risk-taker, the competent risk-taker was evaluated as more responsible (and less reckless) and their risk-taking behavior was perceived as less risky. Participants who reviewed the competent (vs. incompetent) risk-taker were more willing to take the same risk as the target. Further, participants tended to attribute more ability, more effort, more task difficulty, and less luck to the resulting outcome to the competent (vs. incompetent) risk-taker. As anticipated and unlike Experiment 1A, target competence did not influence cost

and benefit perceptions (as main effects), suggesting that once the outcome of the risk taken is known, the uncertainty involved with cost and benefit perceptions is resolved.

Outcome knowledge generally played a role in the majority of the outcomes. Successful (vs. failed) outcomes yielded more favorable perceptions of responsibility/recklessness, risk, and cost/benefit. Further, participants attributed more difficulty and luck to failed (vs. successful) outcomes. Participants were also more willing to take the presented risk if the outcome was successful (vs. failed).

Importantly, I observed a series of significant interactions, primarily regarding what participants attribute to the observed outcome. Ability and effort were strongly attributed to the outcome when successfully pursued by the competent risk-taker; however, ability and effort were least attributed to a successful outcome if the risk-taker was incompetent. Moreover, the success of an incompetent risk-taker appears to be credited to an easy task and pure luck, as task difficulty and luck attributions did not differ much between the other failed conditions and competent success condition.

This study provides further evidence that risk-taking can be disambiguated from other features of the risk situation, particularly regarding the competence of the risk-taker and the resulting outcome observed from the risk taken. Such influences are consistent with the idea that observers are using a normative lay theory to make sense of the risk-taking behavior. Further, when the outcome is known, an interesting pattern emerges in how participants explain the outcome: attributions of success are more sensitive to how competent the target is perceived than attributions of failure, with competent successes admired for overcoming a difficult feat without luck and incompetent successes derogated and their success trivialized as easy and lucky. These results taken together with the results of Experiment 1A suggest that target competence and

outcome knowledge influence target and behavior perceptions (and risk-taking willingness) in a rather additive (rather than hierarchical) fashion. However, the attributions participants make for such outcomes, depend on a multiplicative effect of target competence and outcome knowledge.

Chapter IV: Experiment 2A

The third experiment reported in this dissertation tested whether the impulsivity of the target's approach to risk-taking being observed influences the evaluation of the risk behavior, the risk-taker, prediction of the outcome, and the willingness to engage to make the same decision. I predicted the risk behavior and the risk-taker that is perceived as impulsive (vs. deliberative) would be evaluated unfavorably. Specifically, I anticipated participants to rate the impulsive (vs. deliberative) risk-taker target as less responsible and more reckless. Further, the risk behavior of the impulsive (vs. deliberative) risk-taker will be rated as less beneficial, more costly, and more risky. I also hypothesized that participants would rate the impulsive (vs. deliberative) risk-taker as more regretful and less successful. Lastly, I predicted that participants will be less willing to make the same decision as did the risk-taker who was perceived as impulsive (vs. deliberative).

The study design will be a single factor (level of target impulsiveness) at two levels: impulsive or deliberative. Participants will be randomly assigned to one of two conditions. Impulsivity level will be manipulated by disclosing within the vignette ostensibly how much time and effort was taken and thought given by the target that indicates the target is high or low in impulsivity with the decision made.

Method

Participants and Design

Given the between-subjects design (two-tailed; alpha = .05), I needed 128 participants to have adequate power (.80) to detect a medium effect ($d = 0.50$). I aimed to recruit 160 participants using Qualtrics survey software on MTurk in exchange for $0.65 for compensation. To ensure high data quality, the MTurk sample was collected via the Cloud Research companion platform that screens for high-quality workers.

The sample consisted of 160 participants, including 85 women, 74 men, and 1 gender nonbinary person. The sample was composed of mostly White people (123 White, 18 Asian, 12 Black, 6 Latino/a, 1 Native American, and 3 multiracial people) with ages ranging from 19 to 75 years ($M = 40.09$, $SD = 12.75$). The sample also was majority well-educated (56% having a bachelor's degree or higher) and politically somewhat liberal ($M = 3.40$, $SD = 1.74$; 1 = very liberal, 7 = very conservative).

The study design was a single factor (level of decision impulsivity) at two levels: impulsive or deliberative. Participants were randomly assigned to one of two conditions via Qualtrics randomization. Decision impulsivity was manipulated by indicating how the target made the risk decision in the provided vignette.

Procedure and Measures

The directions and cover story provided to participants were identical to Experiment 1A, except for the competence manipulation. Like Experiment 1A, participants will read the same scenario that the target was presented with and make a risky investment decision in a new business venture with 50/50 odds of success or failure. To manipulate decision impulsivity, however, participants were given information on how much the target processed the option

before making a decision at the end of the vignette. In the impulsive condition, participants will

read that when making the decision, the risk-taker "impulsively acted and completely neglected

the potential downsides involved." In the deliberative condition, participants will read that when

making the decision, the risk-taker "extensively deliberated and fully considered the potential

downsides involved." See Table 7 for the full vignette. For the remainder of the study,

participants were provided ratings of the risk situation, completed a brief demographic

questionnaire, and then were debriefed and compensated. The target evaluation, behavior

evaluation, and risk-taking willingness were measured the same way as it was in Experiment 1A.

The internal reliability of the scale ratings of competence (McDonald's Omega = .97) and of

responsibility/recklessness (McDonald's Omega = .97) was strong. Two new items were created

to measure participants' prediction of the outcome success ("How likely is the target's decision

to be successful?") and the regret of the target ("How likely is the target to regret the decision?")

using a 7-point scale (1 = *extremely unlikely*, 7 = *extremely likely*).

Table 7: Experiment 2A Vignette

J.S. unexpectedly inherited a lump sum of money. When deciding what to do with this newfound money, J.S. was presented with the option of investing it into a new business venture. According to the U.S. Bureau of Labor Statistics, approximately half of all new businesses succeed, and the other half fail within the first five years. With the potential to either double or lose this money, J.S. decided to move forward and invest this money into a new business venture. When making this decision, J.S. [*impulsively acted and completely neglected / extensively deliberated and fully considered*] the potential downsides involved.

Results

Target Evaluations

Participants who reviewed the impulsive decision rated the risk-taker lower on the

responsible attributes than the participants who reviewed the deliberative decision, M_{diff} = -3.12

(SE = .26), CI$_{95}$ [-3.63, -2.61], $t(158)$ = -12.02, p < .001, d = 1.90. Participants who reviewed the

impulsive decision also rated the risk-taker as less competent than the participants who reviewed

the deliberative decision, M_{diff} = -2.58 (SE = .24), CI$_{95}$ [-3.06, -2.11], $t(158)$ = -10.76, p < .001, d

= 1.70. See Table 8 for all condition means and standard deviations of the current study.

Table 8: Experiment 2A Descriptive Statistics

Variables	Condition M (SD)		1	2	3	4	5	6	7
	Impulsive	Deliberate							
1. Responsibility	2.45 (1.39)	5.57 (1.87)							
2. Competence	3.84 (1.55)	6.42 (1.48)	.81*						
3. Risk Perception	5.91 (1.00)	5.22 (1.21)	-.56*	-.45*					
4. Benefit Perception	2.35 (1.29)	4.14 (1.58)	.66*	.62*	-.33*				
5. Cost Perception	5.56 (1.10)	4.55 (1.30)	-.53*	-.43*	.68*	-.29*			
6. Regret Prediction	5.40 (0.94)	4.08 (1.24)	-.65*	-.60*	.56*	-.54*	.54*		
7. Success Prediction	3.38 (1.35)	4.47 (1.09)	.58*	.60*	-.40*	.59*	-.42*	-.65*	
8. Risk Willingness	2.12 (1.49)	3.09 (2.03)	.57*	.52*	-.61*	.54*	-.46*	-.57*	.47*

Note. Ms indicate condition means, SDs indicate standard deviations, and matrix values indicate

Pearson's r correlation coefficients and statistical significance notations.

* p < .001

Behavior Evaluation

As expected, participants who reviewed the impulsive (vs. deliberative) decision

evaluated the risky decision as more risky (M_{diff} = 0.70 (SE = .18), CI$_{95}$ [0.35, 1.04], $t(158)$ =

3.98, p < .001, d = 0.63), more costly (M_{diff} = 1.01 (SE = .19), CI$_{95}$ [0.64, 1.39], $t(158)$ = 5.32, p

< .001, d = 0.84), and less beneficial (M_{diff} = -1.79 (SE = .23), CI$_{95}$ [-2.24, -1.34], $t(158)$ = -7.87,

p < .001, d = 1.24).

Outcome Prediction

As expected, participants who reviewed the impulsive (vs. deliberative) decision predicted the risk-taker would be more regretful ($M_{diff} = 1.33$ ($SE = .17$), CI_{95} [0.98, 1.67], $t(158) = 7.66$, $p < .001$, $d = 1.21$) and the outcome less successful ($M_{diff} = -1.10$ ($SE = .19$), CI_{95} [-1.48, -0.71], $t(158) = -5.64$, $p < .001$, $d = 0.89$).

Risk-taking Willingness

As predicted, participants who reviewed the impulsive decision indicated a decreased willingness to take the same risk as the target than those who reviewed the deliberative decision, $M_{diff} = -0.97$ ($SE = .28$), CI_{95} [-1.52, -0.42], $t(158) = -3.46$, $p = .001$, $d = 0.55$.

Discussion

My hypotheses were confirmed, such that target impulsivity of the risk-taker influences evaluations of risk-taking unfavorably. When the outcome is unknown, the impulsive (vs. deliberative) risk-taking was viewed as more reckless (less responsible), incompetent, risky, and costly (less beneficial). The impulsive risk-taker was predicted to be more regretful of their decision and less likely to succeed than the deliberative risk-taker. Further, participants were less likely to indicate their willingness to invest in a new business venture after seeing it done impulsively relative to deliberately. This is additional evidence that risk-taking can be disambiguated from parameter features of the risk situation—namely the impulsivity of the decision being made.

Chapter V: Experiment 2B

The fourth experiment reported in this dissertation tested whether decision impulsivity (vs. deliberativeness) crossed with outcome knowledge influences the evaluation of the risk behavior, the risk-taker, outcome attributions, and the willingness to engage to make the same decision. Because I proposed that decision impulsivity and outcome knowledge will be considered relevant information when interpreting risk-taking, I predicted impulsive (vs. deliberative) and failed (vs. successful) risk-takers will be evaluated unfavorably. Favorability will be indicated by participants rating the impulsive and failed risk-taker as less responsible and more reckless. Further, the risk behavior of the impulsive and failed risk-taker will be rated as more risky, more costly, and less beneficial. I predicted that participants will be less willing to make the same decision as did the risk-taker who was perceived as impulsive and failed. This experiment also explores how participants attribute the observed outcomes as a function of outcome success/failure and decision impulsivity/deliberativeness. Lastly, this experiment explores the role outcome knowledge plays juxtaposed to decision impulsivity in understanding risk-taking.

Method

Participants and Design

Given the 2×2 between-subjects factorial design (two-tailed; alpha = .05), I needed 210 participants to have robust power (.95) to detect a medium effect and interaction (Cohen's $f =$ 0.25; partial $\eta^2 = 0.06$). I aimed to recruit at least 320 participants using Qualtrics survey software on MTurk in exchange for $0.65 for compensation. To ensure high data quality, the

MTurk sample was collected via the Cloud Research companion platform that screens for high-quality workers.

The sample consisted of 320 participants, including 166 women, 150 men, 1 transgender person, and 5 gender nonbinary people. The sample was composed of mostly White people (254 White, 20 Asian, 28 Black, 14 Latino/a, 3 Native American, and 8 multiracial people) with ages ranging from 19 to 78 years ($M = 41.39$, $SD = 12.16$). The sample also tended to be well-educated (61% having a bachelor's degree or higher) and politically somewhat liberal to moderate ($M = 3.56$, $SD = 1.74$; 1 = very liberal, 7 = very conservative).

The study design was a 2 (decision: impulsive, deliberative) × 2 (outcome knowledge: success, failure). Participants were randomly assigned to condition via Qualtrics randomization. Decision impulsivity was manipulated indicating how the risk-taker approach making the decision within the vignette. Outcome knowledge was manipulated by disclosing within the vignette whether the risk taken was a profitable success or total loss.

Procedure and Measures

The procedure and measures were identical to Experiment 2A except for the following details. In addition to manipulating decision impulsivity (the same procedure as Experiment 2A), the current experiment crossed decision impulsivity with the manipulation of outcome knowledge of risk decision made (the outcome of the risk decision in Experiment 2A was left unknown). To manipulate outcome knowledge, a final sentence of the vignette used in Experiment 2A was added that disclosed whether the risk taken successfully yielded a profit (doubling the investment) or failed resulting in total loss (see Table 9). All of the same measures from Experiment 1B were used for the current experiment. The scale reliability statistics of the

target ratings of competence (McDonald's Omega = .95) and of responsibility/recklessness

(McDonald's Omega = .97) were strong.

Table 9: Experiment 2B Vignette

J.S. unexpectedly inherited a lump sum of money. When deciding what to do with this newfound money, J.S. was presented with the option of investing it into a new business venture. According to the U.S. Bureau of Labor Statistics, approximately half of all new businesses succeed, and the other half fail within the first five years. With the potential to either double or lose this money, J.S. decided to move forward and invest this money into a new business venture. When making this decision, J.S. [*impulsively acted and completely neglected / extensively deliberated and fully considered*] the potential downsides involved. As it turned out, the new business venture [*succeeded/failed*] in making a profit, and J.S.'s investment was [*doubled/completely lost*].

Results

Target Evaluations

There was a main effect of decision impulsivity on responsibility/recklessness

perceptions. Participants who reviewed the impulsive decision rated the risk-taker lower on the

responsible attributes than the participants who reviewed the deliberate decision, $F(1, 316) =$

172.13, $p < .001$, partial $\eta^2 = 0.35$. There was also a main effect of outcome knowledge on

perceptions of responsibility/recklessness. Participants who reviewed the successful outcome

rated the risk-taker higher on the responsible attributes than the participants who reviewed the

failed outcome, $F(1, 316) = 27.65$, $p < .001$, partial $\eta^2 = 0.08$. These main effects were not

qualified by a significant interaction, $F(1, 316) = 0.14$, $p = .710$. See Table 10 for all of the

condition means/SDs reported in the current study.

Participants who reviewed the impulsive decision rated the risk-taker as more competent

than the participants who reviewed the deliberative decision, $F(1, 315) = 106.77$, $p < .001$, partial

$\eta^2 = 0.25$. Participants who reviewed the successful outcome rated the risk-taker higher on

competence than the participants who reviewed the failed outcome, $F(1, 316) = 48.21$, $p < .001$,

partial $\eta^2 = 0.13$. These main effects were not qualified by a significant interaction, $F(1, 315) = 1.46$, $p = .228$.

Behavior Evaluation

Participants who reviewed the impulsive (vs. deliberative) decision ($F(1, 316) = 26.56$, $p < .001$, partial $\eta^2 = 0.08$) and the success (vs. failure) outcome ($F(1, 316) = 17.99$, $p < .001$, partial $\eta^2 = 0.05$) evaluated the decision as less risky. These main effects were qualified by a significant interaction, $F(1, 316) = 7.84$, $p = .005$, partial $\eta^2 = 0.02$. Bonferroni bias-corrected pairwise comparisons revealed that perceived risk did not differ by decision impulsivity when the outcome was failure ($M_{diff} = 0.30$, $SE = .18$, $p = .578$); however, the impulsive (vs. deliberate) decision was viewed as more risky when the outcome was successful ($M_{diff} = 1.00$, $SE = .18$, $p < .001$). See Figure 6.

Figure 6: Risk Perception Means from Decision Impulsivity by Outcome Knowledge


Error bars: 95% CI
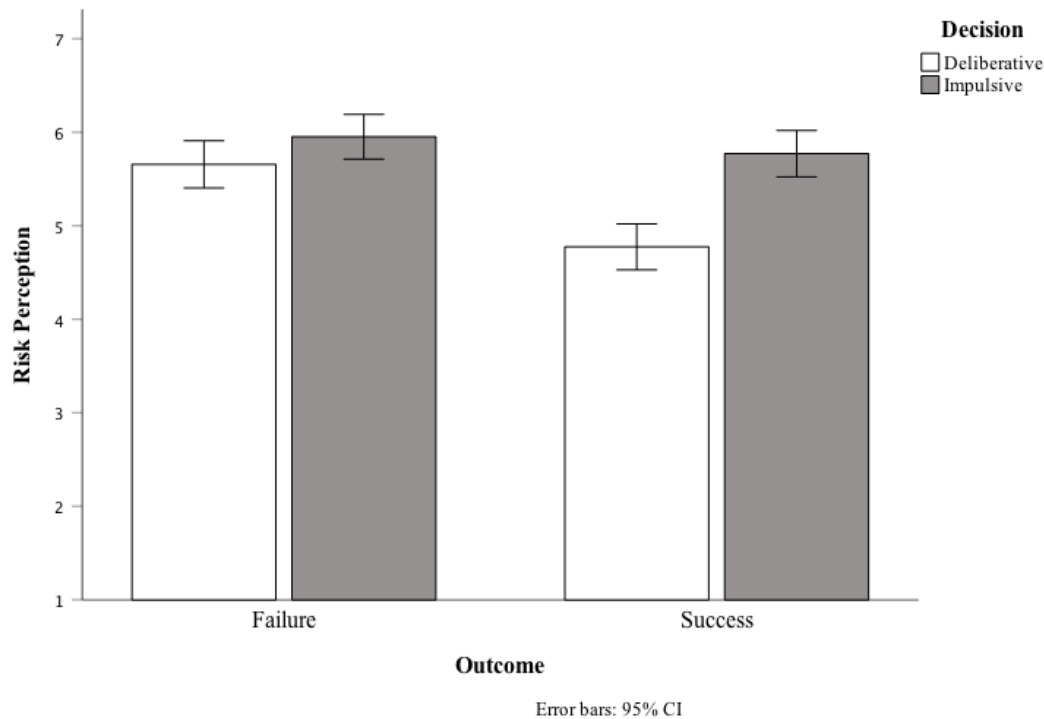
There was not a significant main effect of decision impulsivity on perceived cost ($F(1, 316) = 2.54$, $p = .303$); however, there was for perceived benefit ($F(1, 316) = 5.57$, $p = .019$, partial $\eta^2 = 0.02$), such that success (vs. failure) was viewed as more beneficial. Participants who reviewed the success (vs. failure) outcome viewed the decision to be less costly ($F(1, 316) = 230.91$, $p < .001$, partial $\eta^2 = 0.42$) and more beneficial ($F(1, 316) = 600.00$, $p < .001$, partial $\eta^2 = 0.66$). These main effects were not qualified by an interaction for perceived benefit ($F(1, 316) = 0.64$, $p = .423$) or for perceived cost ($F(1, 316) = 0.05$, $p = .825$).
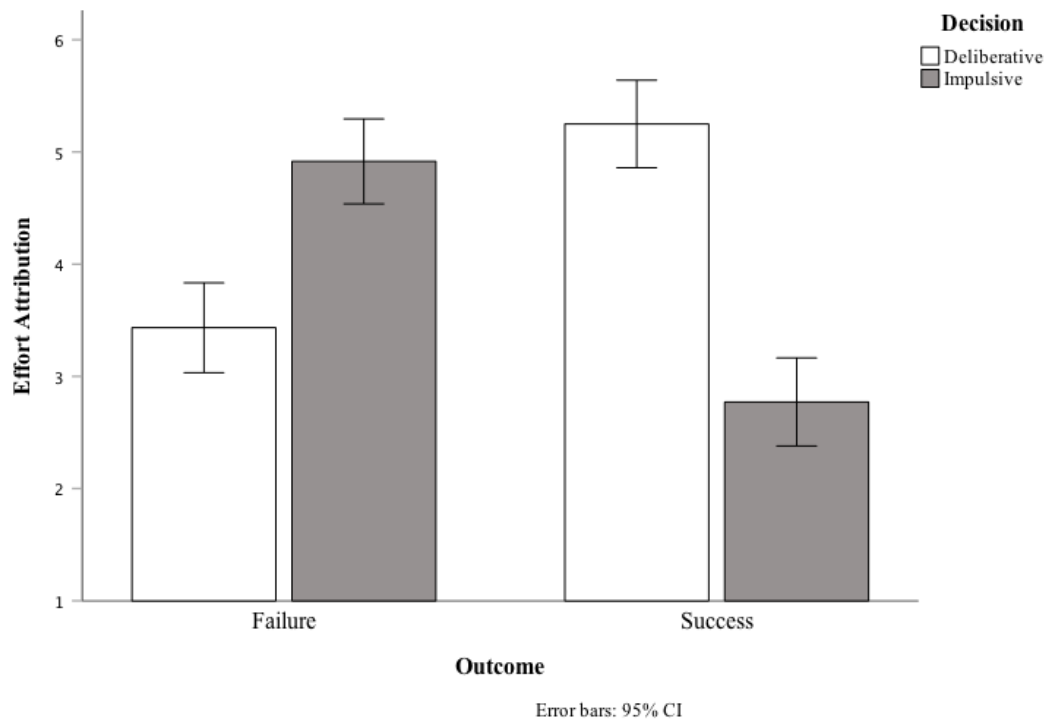
Outcome Attribution

There was a main effect of decision impulsivity on the attribution of the target's ability on the observed outcome, $F(1, 316) = 5.54$, $p = .019$, partial $\eta^2 = 0.02$, such that the target's ability was attributed less when the decision was impulsive (vs. deliberative). There was also a

main effect of outcome knowledge, $F(1, 316) = 4.92$, $p = .027$, partial $\eta^2 = 0.02$, such that the target's ability was attributed more when the outcome was successful (vs. failed). There was a decision impulsivity by outcome knowledge interaction, $F(1, 316) = 64.63$, $p < .001$, partial $\eta^2 = 0.17$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed ability to the successful outcome less for the impulsive (vs. deliberative) decision ($M_{diff} = -1.83$, $SE = .25$, $p < .001$); conversely, participants attributed ability to the failure outcome more for the impulsive (vs. deliberative) decision ($M_{diff} = 1.00$, $SE = .25$, $p < .001$). Participants also attributed ability less to the impulsive decision when successful than when failed ($M_{diff} = -1.03$, $SE = .25$, $p < .001$); however, participants attributed ability more to the deliberative decision when successful than when failed ($M_{diff} = 1.81$, $SE = .25$, $p < .001$). See Figure 7.

Figure 7: Ability Attribution Means from Decision Impulsivity by Outcome Knowledge
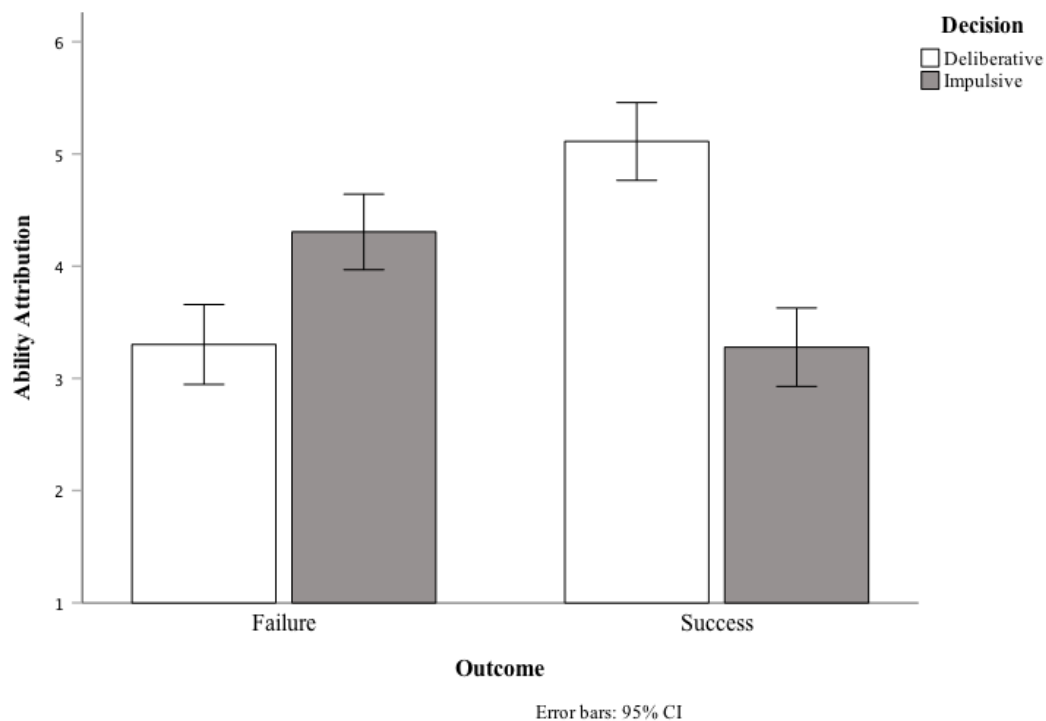
Error bars: 95% CI

There was a main effect of decision impulsivity on attribution of the target's effort on the observed outcome, $F(1, 316) = 6.28$, $p = .013$, partial $\eta^2 = 0.02$, such that the target's effort was attributed less to the outcome when the decision was impulsive (vs. deliberative); however, there was no main effect of outcome knowledge, $F(1, 316) = 0.69$, $p = .407$. There was a decision impulsivity by outcome knowledge interaction, $F(1, 316) = 99.61$, $p < .001$, partial $\eta^2 = 0.24$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed effort to the successful outcome less for the impulsive (vs. deliberative) decision ($M_{diff} = -2.48$, $SE = .28$, $p < .001$); participants attributed effort more to the impulsive (vs. deliberative) decision when the outcome failed ($M_{diff} = 1.48$, $SE = .28$, $p < .001$). Participants also attributed effort less to the impulsive decision when successful than when failed ($M_{diff} = -2.15$, $SE = .28$, $p < .001$); however, participants attributed effort more to the deliberative decision when successful than when failed ($M_{diff} = 1.82$, $SE = .28$, $p < .001$). See Figure 8.

Figure 8: Effort Attribution Means from Decision Impulsivity by Outcome Knowledge

Error bars: 95% CI

There was a main effect of decision impulsivity on attribution of task difficulty on the observed outcome, $F(1, 316) = 23.03$, $p < .001$, partial $\eta^2 = 0.07$, such that task difficulty was attributed less to the outcome when the decision was impulsive (vs. deliberative). There was a main effect of outcome knowledge, $F(1, 316) = 15.17$, $p < .001$, partial $\eta^2 = 0.05$, such that task difficulty was attributed more to the outcome when failed than when successful. There was not a decision impulsivity by outcome knowledge interaction, $F(1, 316) = 0.002$, $p = .961$.

Though I did not find a main effect of decision impulsivity on attribution of luck on the observed outcome, $F(1, 316) = 0.13$, $p = .719$, there was a main effect of outcome knowledge, $F(1, 316) = 58.99$, $p < .001$, partial $\eta^2 = 0.16$, such that luck was attributed more to the outcome when successful than when failed. There was a decision impulsivity by outcome knowledge interaction, $F(1, 316) = 52.71$, $p < .001$, partial $\eta^2 = 0.14$. Bonferroni bias-corrected pairwise

comparisons revealed that participants attributed luck to the successful outcome more for the impulsive (vs. deliberative) decision (M_{diff} = 1.31, SE = .24, p < .001); however, participants attributed luck less to the impulsive (vs. deliberative) decision when the outcome failed (M_{diff} = -1.19, SE = .24, p < .001). Participants attributed luck more to the impulsive decision when successful than when failed (M_{diff} = 2.57, SE = .24, p < .001); however, participants attributed luck equivalently to the deliberative decision when successful and failed (M_{diff} = 0.07, SE = .25, p = 1.00). See Figure 9.

Figure 9: Luck Attribution Means from Decision Impulsivity by Outcome Knowledge
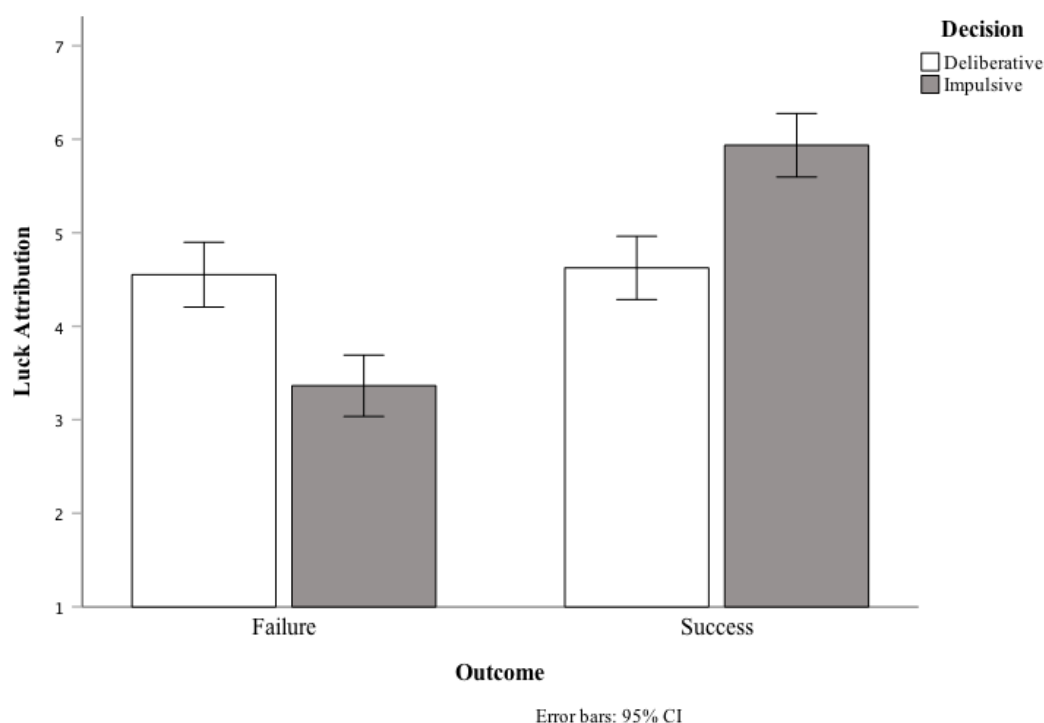
Error bars: 95% CI

Risk-taking Willingness

Participants who reviewed the impulsive decision indicated a decreased willingness to take the same risk as the target than those who reviewed the deliberative decision, $F(1, 316)$ = 11.99, p = .001, partial η^2 = 0.04. There was also a main effect of outcome knowledge, $F(1, 316)$

$= 23.75$, $p < .001$, partial $\eta^2 = 0.07$, such that participants who reviewed the successful outcome were more likely to take the same risk as the target than those who reviewed the failed outcome. These main effects were not qualified by a significant interaction, $F(1, 316) = 0.35$, $p = .557$.

Table 10: Experiment 2B Descriptive Statistics

	Impulsive Decision		Deliberate Decision	
	Outcome Failure	Outcome Success	Outcome Failure	Outcome Success
Responsibility Perception	2.60 (1.52)	3.65 (1.61)	5.12 (2.02)	6.04 (1.51)
Competence Perception	3.90 (1.48)	5.28 (1.71)	5.86 (1.61)	6.83 (1.21)
Risk Perception	5.95 (1.07)	5.77 (1.23)	5.66 (1.01)	4.78 (1.16)
Cost Perception	5.94 (1.19)	3.27 (1.93)	5.72 (1.32)	3.13 (1.67)
Benefit Perception	1.65 (1.15)	5.42 (1.41)	2.12 (1.58)	5.65 (1.16)
Ability Attribution	4.31 (1.65)	3.28 (1.82)	3.30 (1.46)	5.11 (1.33)
Effort Attribution	4.92 (2.13)	2.77 (1.84)	3.43 (1.63)	5.25 (1.38)
Task Difficulty Attribution	3.86 (1.77)	3.15 (1.54)	4.75 (1.58)	4.03 (1.65)
Luck Attribution	3.36 (1.61)	5.94 (1.27)	4.55 (1.62)	4.63 (1.62)
Risk-taking Willingness	2.13 (1.45)	2.94 (1.85)	2.67 (1.70)	3.70 (1.72)

Note. Condition means (standard deviations are in parentheses).

Discussion

Hypotheses were confirmed in the direction predicted, such that the impulsivity of the risk-taker's decision influenced evaluations of risk-taking unfavorably. Specifically, relative to the deliberative risk-taker, the impulsive risk-taker was evaluated as more reckless (less responsible) and their risk-taking behavior was perceived as more risky and less beneficial. Further, participants who reviewed the impulsive (vs. deliberative) risk-taker were less willing to take the same risk as the target.

Outcome knowledge had a consistent influence on the perception of risk-taking. Successful (vs. failed) risk-taking was viewed as less competent, responsible, beneficial, and more reckless, risky, and costly. Further, participants who reviewed the successful (vs. failed) risk-taker were more willing to take the same risk as the target. Risk perceptions were primarily

decreased by the deliberative risk-taker who was successful relative to the failure conditions and impulsive success.

When making attributions for the observed outcome, participants attributed ability, effort, and task difficulty less to the impulsive (vs. deliberative) risk-taker; participants attributed success (vs. failure) more to ability and luck and less to task difficulty. Interestingly, participants attributed the success of the impulsive (vs. deliberative) risk-taker more to luck and less to ability and effort. Conversely, participants attributed the failure of the impulsive (vs. deliberative) risk-taker less to luck and more to ability and effort.

This study provides further evidence that risk-taking can be disambiguated from other features of the risk situation, particularly regarding the impulsivity of the risk-taker and outcome knowledge of the risk taken in ways consistent with the hypothesized normative lay theory of risk-taking. Outcome knowledge plays a largely additive role in relation to decision impulsivity in the perceptions of risk-taking. Findings suggest that decision impulsivity and outcome knowledge not only influence how people perceive risk-taking, but also people make sense of the outcomes of risk-taking they observe: impulsivity and outcomes are interactive in explaining outcome attribution. That is, ability and effort tend to be denied to impulsive risk-takers who are successful; however, a lack of ability and effort are to blame for impulsive risk-takers who fail. Rather impulsive risk-takers who find success are mainly viewed as lucky, while failed deliberative risk-takers are seen as unlucky. These findings further support the idea that observing an impulsive (vs. deliberative) and successful (vs. failed) risk-taker can influence the perceiver's own willingness to take a similar risk, providing more evidence that the observation of risk-takers could potentially influence risk-taking behavior itself.

Chapter VI: Experiment 3A

The fifth experiment reported in this dissertation tested whether the sociality of the target's risk behavior being observed influences the evaluation of the risk behavior, the risk-taker, prediction of the outcome, and the willingness to engage to make the same decision. I predicted the risk behavior and the risk-taker that is perceived as prosocial (vs. antisocial) would be evaluated favorably. Specifically, I anticipated participants to rate the prosocial (vs. antisocial) risk-taker target as more responsible and less reckless. Further, the risk behavior of the prosocial (vs. antisocial) risk-taker will be rated as more beneficial, less costly, less risky, less regretful, and more successful. Lastly, I predicted that participants will be more willing to make the same decision as did the risk-taker who was perceived as prosocial (vs. antisocial).

The study design will be a single factor (sociality of the risk taken) at two levels: prosocial or antisocial. Participants will be randomly assigned to one of two conditions. Sociality will be manipulated by disclosing the ostensible impact the decision involves: helping or harming through environmental (de)contamination.

Method

Participants and Design

Given the between-subjects design (two-tailed; alpha = .05), I needed 128 participants to have adequate power (.80) to detect a medium effect ($d = 0.50$). I aimed to recruit 160 participants using Qualtrics survey software on MTurk in exchange for $0.65 for compensation. To ensure high data quality, the MTurk sample was collected via the Cloud Research companion platform that screens for high-quality workers.

The sample consisted of 158 participants, including 92 women, 67 men, and 1 transgender person. The sample was composed of mostly White people (127 White, 10 Asian, 14 Black, 11 Latino/a, and 3 multiracial people) with ages ranging from 20 to 73 years ($M = 40.61$, $SD = 12.35$). The sample was also majority well-educated (57% having a bachelor's degree or higher) and politically somewhat liberal ($M = 3.54$, $SD = 1.83$; 1 = very liberal, 7 = very conservative).

The study design was a single factor (risk sociality) at two levels: prosocial or antisocial. Participants were randomly assigned to one of two conditions via Qualtrics randomization. Risk sociality was manipulated by indicating the potential impact of the decision in the vignette.

Procedure and Measures

The directions and cover story provided to participants were identical to Experiment 2A, except for the impulsivity manipulation. Like Experiment 2A, participants will read the same scenario that the target was presented with and make a risky investment decision in a new business venture with 50/50 odds of success or failure. To manipulate risk sociality, however, participants will be given information on the potential environmental impact of the risky endeavor on others. In the prosocial condition, participants will read that the business venture "would involve helping vulnerable communities by decontaminating their air and drinking water from industrial pollution." In the antisocial condition, participants will read that the business venture "would involve harming vulnerable communities by contaminating their air and drinking water with industrial pollution" (see Table 11 for full vignette). For the remainder of the study, participants were provided ratings of the risk situation, completed a brief demographic questionnaire, and then were debriefed and compensated. The target evaluation, behavior evaluation, outcome predictions, and risk-taking willingness was measured the same way as it

was in Experiment 2A. The scale reliability of the competence (McDonald's Omega = .94) and

responsibility/recklessness (McDonald's Omega = .98) ratings was strong. A new measure of

target warmth (as a manipulated check) was created using the following 9-point semantic

differential items (composite score): cold/warm, uncaring/caring, unfriendly/friendly, not

empathetic/empathetic, and greedy/generous (McDonald's Omega = .99).

Table 11: Experiment 3A Vignette

J.S. unexpectedly inherited a lump sum of money. When deciding what to do with this newfound money, J.S. was presented with the option of investing it into a new business venture. This business would involve [*helping/harming*] vulnerable communities by [decontaminating/contaminating] their air and drinking water [*from/with*] industrial pollution. According to the U.S. Bureau of Labor Statistics, approximately half of all new businesses succeed, and the other half fail within the first five years. With the potential to either double or lose this money, J.S. decided to move forward and invest this money into a new business venture.

Results

Target Evaluations

As predicted, participants who reviewed the prosocial risk rated the risk-taker higher on

the responsible attributes than the participants who reviewed the antisocial risk, M_{diff} = 3.96 (SE

= .27), CI_{95} [3.43, 4.48], $t(156)$ = 14.83, $p < .001$, d = 2.36. As anticipated, participants who

reviewed the prosocial decision also rated the risk-taker as more competent (M_{diff} = 2.22 (SE =

.27), CI_{95} [1.69, 2.75], $t(156)$ = 8.22, $p < .001$, d = 1.31) and more warm (M_{diff} = 5.61 (SE = .25),

CI_{95} [5.13, 6.10], $t(156)$ = 22.79, $p < .001$, d = 3.63) than the participants who reviewed the

antisocial risk. See Table 12 for all of the condition means/SDs of the current study.

Table 12: Experiment 3A Descriptive Statistics

Variables	Condition M (SD)		1	2	3	4	5	6	7	8
	Prosocial	Antisocial								
1. Responsibility	5.76 (1.87)	1.80 (1.47)								
2. Competence	6.30 (1.49)	4.08 (1.86)	.76*							
3. Warmth	7.56 (1.37)	1.94 (1.69)	.85*	.71*						
3. Risk Perception	4.93 (1.27)	5.99 (1.18)	-.59*	-.50*	-.46*					
4. Benefit Perception	5.00 (1.43)	1.80 (1.55)	.81*	.62*	.80*	-.43*				
5. Cost Perception	4.54 (1.31)	5.72 (1.35)	-.54*	-.45*	-.50*	.63*	-.46*			
6. Regret Prediction	3.88 (1.42)	5.18 (1.54)	-.60*	-.55*	-.51*	.49*	-.50*	.47*		
7. Success Prediction	4.29 (1.24)	3.32 (1.38)	.57*	.57*	.44*	-.46*	.52*	-.26*	-.51*	
8. Risk Willingness	3.61 (1.99)	1.39 (1.17)	.85*	.66*	.67*	-.60*	.69*	-.49*	-.58*	.57*

Note. *M*s indicate condition means, *SD*s indicate standard deviations, and matrix values indicate Pearson's *r* correlation coefficients and statistical significance notations.

* $p < .001$

Behavior Evaluation

As expected, participants who reviewed the prosocial (vs. antisocial) risk evaluated the decision as less risky (M_{diff} = -1.05 (SE = .20), CI$_{95}$ [-1.44, -0.67], $t(156)$ = -5.41, $p < .001$, d = 0.86), less costly (M_{diff} = -1.18 (SE = .21), CI$_{95}$ [-1.60, -0.76], $t(156)$ = -5.56, $p < .001$, d = 0.89), and more beneficial (M_{diff} = 3.20 (SE = .24), CI$_{95}$ [2.73, 3.67], $t(156)$ = 13.42, $p < .001$, d = 2.14).

Outcome Prediction

As expected, participants who reviewed the prosocial (vs. antisocial) risk predicted the risk-taker would be less regretful (M_{diff} = -1.30 (SE = .24), CI$_{95}$ [-1.77, -0.83], $t(156)$ = -5.50, $p < .001$, d = 0.88) and the outcome more successful (M_{diff} = 0.97 (SE = .21), CI$_{95}$ [0.56, 1.39], $t(156)$ = 4.65, $p < .001$, d = 0.74).

Risk-taking Willingness

As predicted, participants who reviewed the prosocial risk indicated a decreased willingness to take the same risk as the target than those who reviewed the antisocial risk, $M_{diff} =$ 2.22 ($SE = .26$), CI$_{95}$ [1.71, 2.72], $t(156) = 8.61$, $p < .001$, $d = 1.37$.

Discussion

My hypotheses were confirmed, such that the sociality of the risk taken influences evaluations of risk-taking. Findings provide additional evidence that risk-taking can be disambiguated from parameter features of the risk situation. When the outcome is unknown, the prosocial (vs. antisocial) risk-taking was viewed as more responsible (less reckless), more competent, more warm, less risky, less costly (and more beneficial). The prosocial risk-taker was predicted to be less regretful of their decision and more likely to succeed than the antisocial risk-taker. Further, participants were less likely to indicate their willingness to invest in a new business venture after seeing it done with a potential prosocial (vs. antisocial) impact. This is additional evidence that risk-taking can be disambiguated from parameter features of the risk situation—namely the sociality of the decision being made.

Chapter VII: Experiment 3B

The sixth and final experiment reported in this dissertation tested whether risk sociality crossed with outcome knowledge influences the evaluation of the risk behavior, the risk-taker, outcome attributions, and the willingness to engage to make the same decision. Because I proposed that risk sociality and outcome knowledge will be considered relevant information when interpreting risk-taking, I predicted prosocial (vs. antisocial) and successful (vs. failed)

risk-takers will be evaluated favorably. Favorability will be indicated by participants rating the prosocial and successful risk-taker as more responsible and less reckless. Further, the risk behavior of the prosocial and successful risk-taker will be rated as less risky, less costly, and more beneficial. I predicted that participants will be more willing to make the same decision as did the risk-taker who was perceived as prosocial and successful. This experiment also explores how participants attribute the observed outcomes as a function of outcome success/failure and target prosociality/antisociality. Lastly, this experiment explores the role outcome knowledge plays juxtaposed to risk sociality in understanding risk-taking.

Method

Participants and Design

Given the 2×2 between-subjects factorial design (two-tailed; alpha = .05), I needed 210 participants to have robust power (.95) to detect a medium effect and interaction (Cohen's $f =$ 0.25; partial $\eta^2 = 0.06$). I decided to use this effect size, because I did not have a prior effect size to base this calculation and I wanted to use resources feasibly. I aimed to recruit 320 participants using Qualtrics survey software on MTurk in exchange for $0.65 for compensation. To ensure high data quality, the MTurk sample was collected via the Cloud Research companion platform that screens for high-quality workers.

The sample consisted of 319 participants, including 174 women, 139 men, 2 transgender people, and 6 gender nonbinary people. The sample was composed of mostly White people (230 White, 36 Asian, 32 Black, 17 Latino/a, 7 Native Americans, and 7 multiracial people) with ages ranging from 19 to 90 years ($M = 39.87$, $SD = 14.05$). The sample also tended to be well-

educated (58% having a bachelor's degree or higher) and politically somewhat liberal to moderate ($M = 3.41$, $SD = 1.77$; 1 = very liberal, 7 = very conservative).

The study design was a 2 (risk sociality: prosocial, antisocial) × 2 (outcome knowledge: success, failure). Participants were randomly assigned to condition via Qualtrics randomization. Risk sociality was manipulated by disclosing within the vignette that the risk decision made by the target would ostensibly help or help vulnerable communities environmentally. Outcome knowledge was manipulated by disclosing within the vignette whether the risk taken was a profitable success or total loss.

Procedure and Measures

The procedure and measures were identical to Experiment 3A except for the following details. In addition to manipulating risk sociality (the same procedure as Experiment 3A), the current experiment crossed risk sociality with the manipulation of outcome knowledge of risk decision made (the outcome of the risk decision in Experiment 3A was left unknown). To manipulate outcome knowledge, a final sentence of the vignette used in Experiment 3A was added that disclosed whether the risk taken successfully yielded a profit (doubling the investment) or failed resulting in total loss (See Table 13). All of the same measures from Experiment 2B were used in the current experiment along with the measurement of target warmth created in Experiment 3A. The scale reliability statistics of the target ratings of competence (McDonald's Omega = .96), of warmth (McDonald's Omega = .98), and of responsibility/recklessness (McDonald's Omega = .96) were strong.

Table 13: Experiment 3B Vignette

J.S. unexpectedly inherited a lump sum of money. When deciding what to do with this newfound money, J.S. was presented with the option of investing it into a new business venture. This business would involve [*helping/harming*] vulnerable communities by [*decontaminating/contaminating*] their air and drinking water [*from/with*] industrial pollution. According to the U.S. Bureau of Labor Statistics, approximately half of all new businesses succeed and the other half fail within the first five years. J.S. decided to move forward and invest this money into the new business venture. As it turned out, the new business venture [*succeeded/failed*] in making a profit, and J.S.'s investment was [*doubled/completely lost*].

Results

Target Evaluations

There was a main effect of risk sociality on responsibility (recklessness) perceptions. Participants who reviewed the prosocial risk rated the risk-taker as more responsible (less reckless) than the participants who reviewed the antisocial risk, $F(1, 315) = 174.79$, $p < .001$, partial $\eta^2 = 0.36$. There was also a main effect of outcome knowledge, $F(1, 315) = 36.14$, $p < .001$, partial $\eta^2 = 0.10$, such that participants who reviewed the successful (vs. failed) outcome rated the risk-taker as more responsible. These main effects were qualified by a risk sociality by outcome knowledge interaction, $F(1, 315) = 25.45$, $p < .001$, partial $\eta^2 = 0.08$. Bonferroni bias-corrected pairwise comparisons revealed that the prosocial target was perceived as more responsible (less reckless) when the outcome was successful rather than failed ($M_{diff} = 2.24$, $SE = .29$, $p < .001$); however, responsibility/recklessness perceptions of the antisocial target did not differ by outcome success/failure ($M_{diff} = 0.20$, $SE = .29$, $p = 1.00$). The prosocial (vs. antisocial) target was perceived as more responsible (less reckless) when the outcome was both successful ($M_{diff} = 3.71$, $SE = .29$, $p < .001$) and failed ($M_{diff} = 1.66$, $SE = .29$, $p < .001$); however, this difference was larger with the success outcome. See Figure 10. See Table 14 for all of the condition means/SDs reported for the current study.

Figure 10: Responsibility/Recklessness Perception Means from Risk Sociality by Outcome Knowledge


Error bars: 95% CI
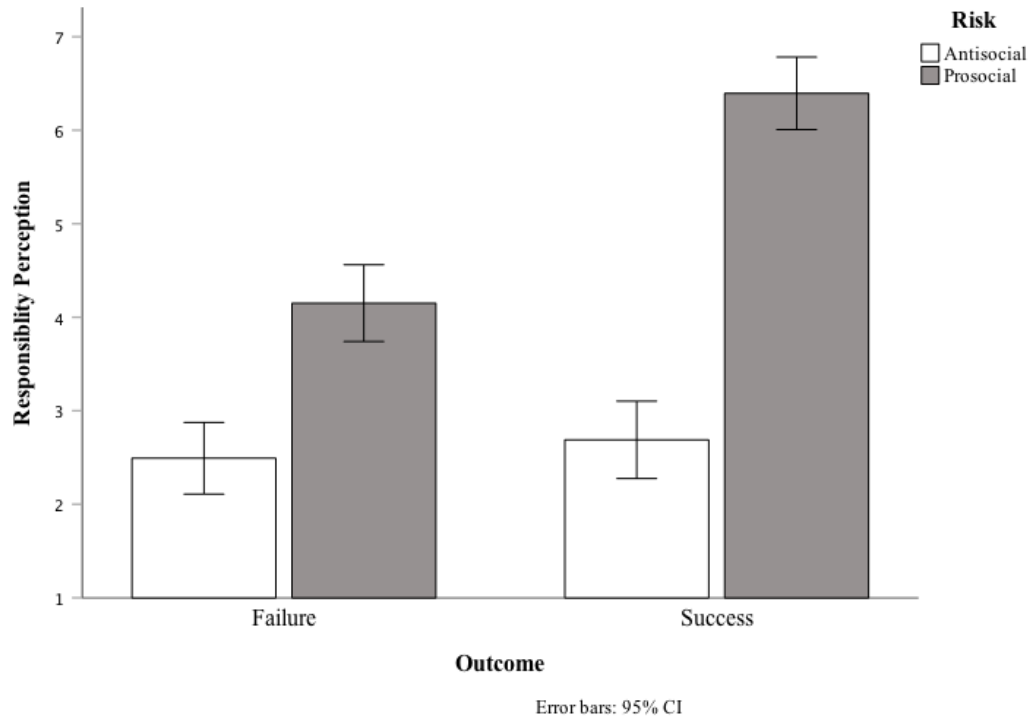
There was a main effect of risk sociality on competence perceptions. Participants who reviewed the prosocial target rated the risk-taker higher on competence than the participants who reviewed the antisocial target, $F(1, 315) = 77.32$, $p < .001$, partial $\eta^2 = 0.20$. There was also a main effect of outcome knowledge on competence perceptions. Participants who reviewed the successful outcome rated the risk-taker higher on competence than the participants who reviewed the failed outcome, $F(1, 315) = 77.12$, $p < .001$, partial $\eta^2 = 0.20$. These main effects were not qualified by a significant interaction, $F(1, 315) = 2.98$, $p = .085$.

There was a main effect of risk sociality on warmth perceptions. Participants who reviewed the prosocial target rated the risk-taker higher on warmth than the participants who reviewed the antisocial target, $F(1, 315) = 510.02$, $p < .001$, partial $\eta^2 = 0.62$. However, there

was not a main effect of outcome knowledge, $F(1, 315) = 0.59$, $p = .445$. These main effects were qualified by a significant interaction, $F(1, 315) = 7.62$, $p = .006$, partial $\eta^2 = 0.02$. Bonferroni bias-corrected pairwise comparisons revealed that the prosocial (vs. antisocial) target was perceived as more warm when the outcome was both successful ($M_{diff} = 4.98$, $SE = .28$, $p < .001$) and failed ($M_{diff} = 3.90$, $SE = .28$, $p < .001$); however, this difference appears larger with the success outcome. Warmth did not significantly differ between outcome conditions for the prosocial or antisocial targets (p's $> .080$). See Figure 11.

Figure 11: Warmth Perception Means from Risk Sociality by Outcome Knowledge
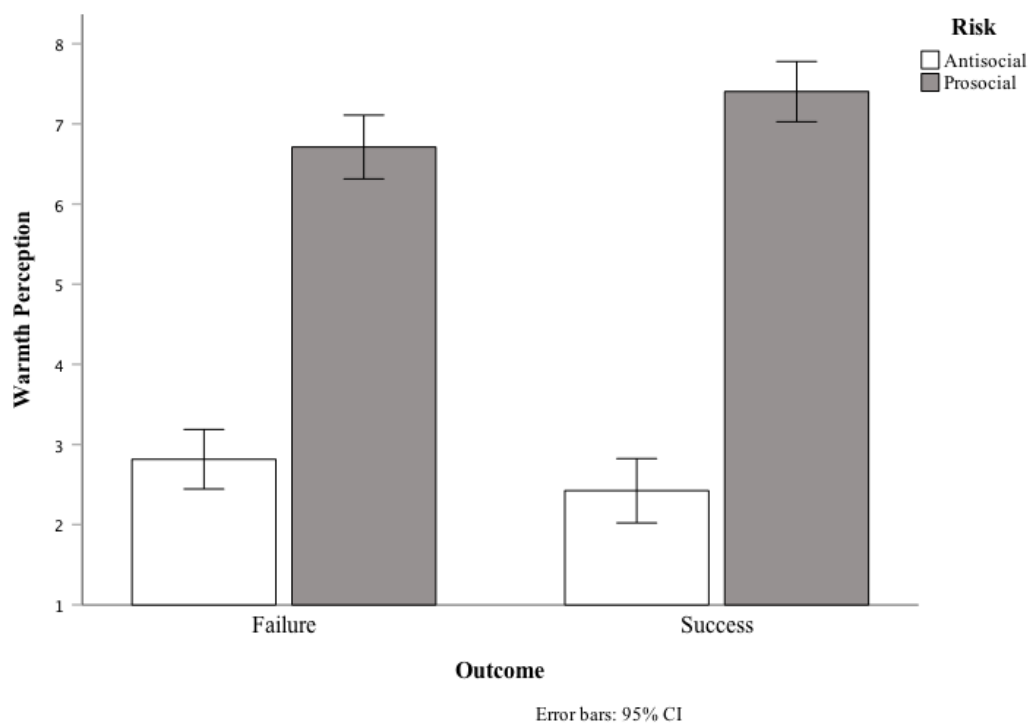
Error bars: 95% CI

Behavior Evaluation

Participants who reviewed the prosocial (vs. antisocial) target ($F(1, 315) = 4.02$, $p = .046$, partial $\eta^2 = 0.01$) and the success (vs. failure) outcome ($F(1, 315) = 33.87$, $p < .001$, partial $\eta^2 =$

0.10) evaluated the decision as less risky. These main effects were not qualified by a significant interaction, $F(1, 315) = 2.28, p = .132$.

There were significant main effects of risk sociality on perceived cost ($F(1, 315) = 28.12$, $p < .001$, partial $\eta^2 = 0.08$) and perceived benefit ($F(1, 315) = 187.80, p < .001$, partial $\eta^2 = 0.37$), such that prosocial (vs. antisocial) risks were perceived as less costly and more beneficial. Participants who reviewed success (vs. failure) outcomes viewed the decision to be less costly ($F(1, 315) = 77.00, p < .001$, partial $\eta^2 = 0.20$) and more beneficial ($F(1, 315) = 117.27, p < .001$, partial $\eta^2 = 0.27$). There was a significant interaction for perceived cost ($F(1, 315) = 11.17, p = .001$, partial $\eta^2 = 0.03$) and for perceived benefit ($F(1, 315) = 27.92, p < .001$, partial $\eta^2 = 0.08$). Bonferroni bias-corrected pairwise comparisons revealed that perceived cost did not differ by risk sociality when the outcome was failed ($M_{diff} = -0.34, SE = .24, p = 0.987$); however, the decision of the prosocial (vs. antisocial) target was viewed as less costly when the outcome was successful ($M_{diff} = -1.49, SE = .24, p < .001$). The decision of the prosocial target ($M_{diff} = 2.87, SE = .28, p < .001$) and antisocial target ($M_{diff} = 0.99, SE = .25, p < .001$) was viewed as more beneficial when the outcome was successful than when failed; however, the gap between prosocial and antisocial is larger for the success (vs. failed) outcome. See Figures 12-13.

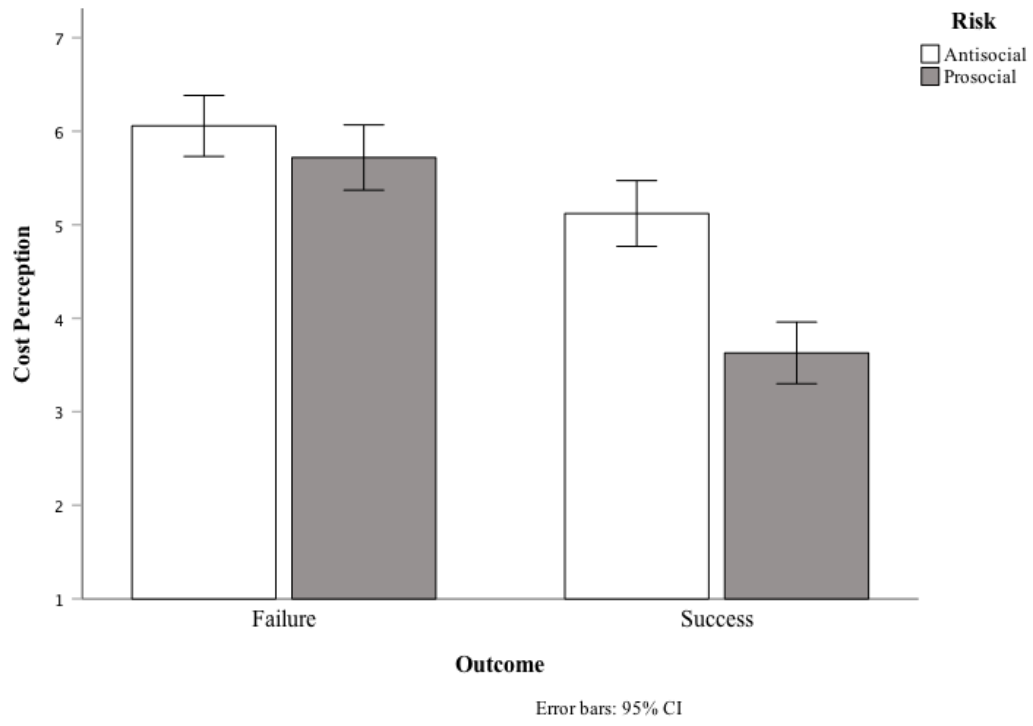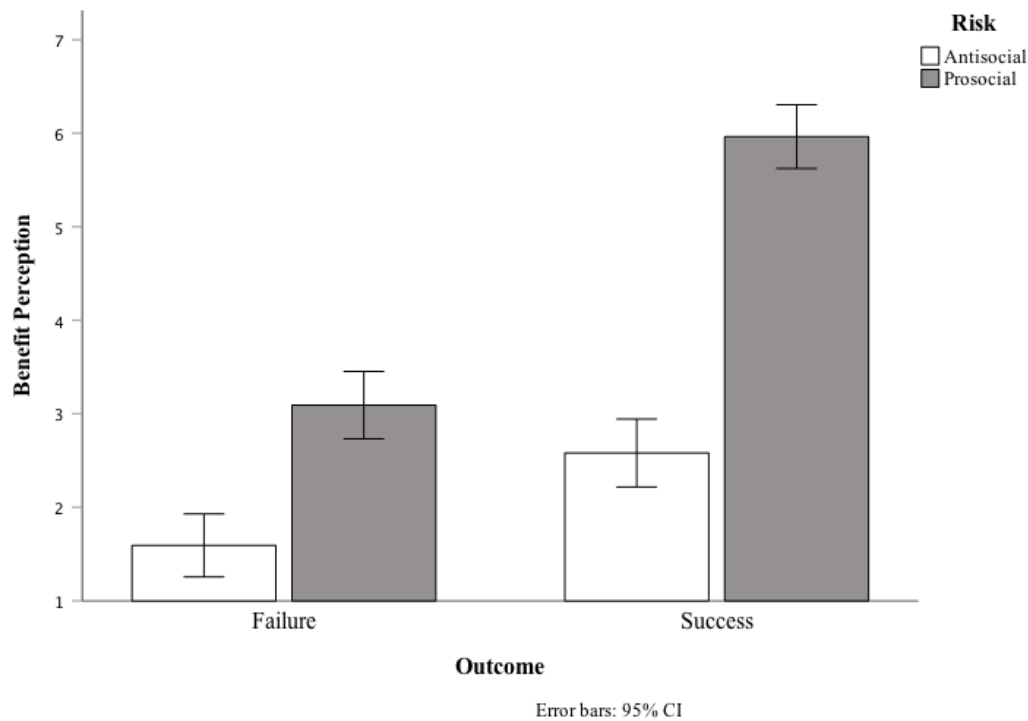**Figure 12: Cost Perception Means from Risk Sociality by Outcome Knowledge**

Error bars: 95% CI

Figure 13: Benefit Perception Means from Risk Sociality by Outcome Knowledge
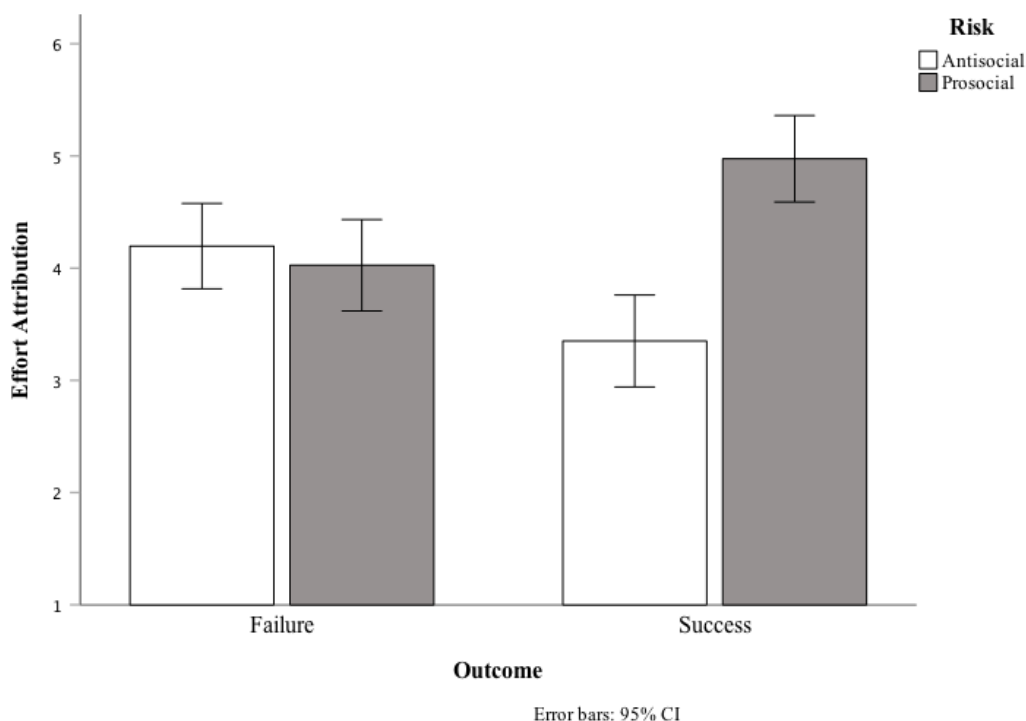

Error bars: 95% CI

Outcome Attribution

There was a main effect of risk sociality on attribution of the target's ability on the observed outcome, $F(1, 315) = 10.89$, $p = .001$, partial $\eta^2 = 0.03$, such that the target's ability was attributed more when the target was prosocial (vs. antisocial); however, there was no main effect of outcome knowledge, $F(1, 315) = 1.34$, $p = .248$. There was a risk sociality by outcome knowledge interaction, $F(1, 315) = 19.31$, $p < .001$, partial $\eta^2 = 0.06$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed ability to the successful prosocial target more than the successful antisocial target ($M_{diff} = 2.52$, $SE = .29$, $p < .001$), the failed prosocial target ($M_{diff} = 2.52$, $SE = .29$, $p < .001$), and failed antisocial target ($M_{diff} = 2.52$, $SE = .29$, $p < .001$). The failed targets and successful antisocial target did not significantly differ from one another (p's $> .135$). See Figure 14.

Figure 14: Ability Attribution Means from Risk Sociality by Outcome Knowledge
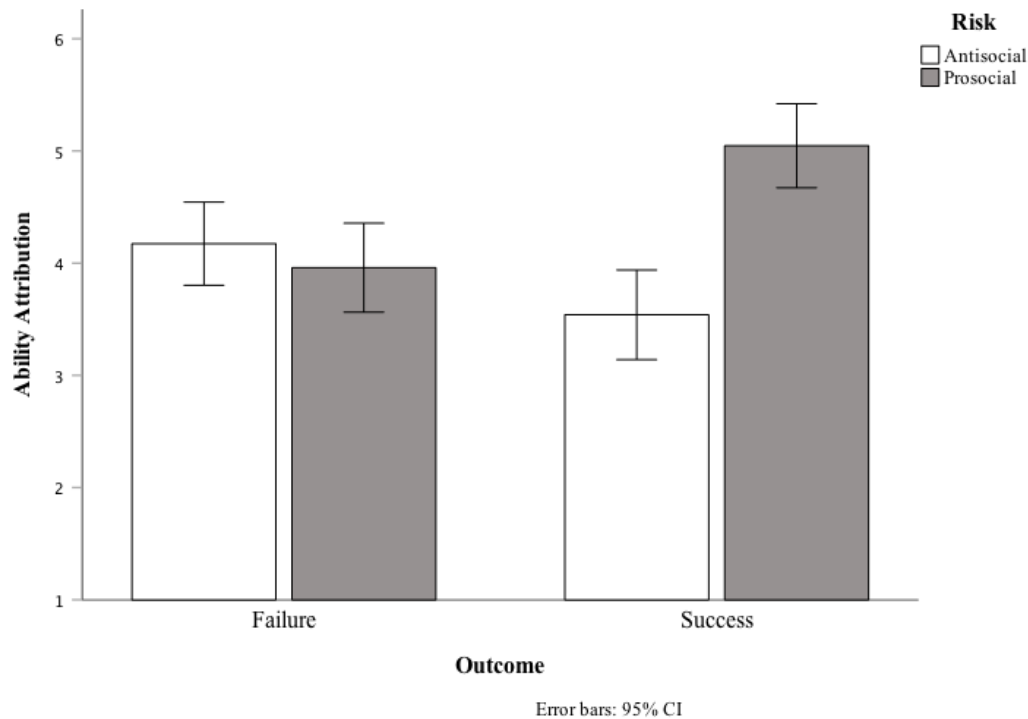
Error bars: 95% CI

There was a main effect of risk sociality on attribution of the target's effort on the observed outcome, $F(1, 315) = 13.05$, $p < .001$, partial $\eta^2 = 0.04$, such that the target's effort was attributed more to the outcome when the target was prosocial (vs. antisocial); however, there was no main effect of outcome knowledge, $F(1, 315) = 0.07$, $p = .798$. There was a risk sociality by outcome knowledge interaction, $F(1, 315) = 19.92$, $p < .001$, partial $\eta^2 = 0.06$. Bonferroni bias-corrected pairwise comparisons revealed that participants attributed effort to the successful outcome more for the prosocial (vs. antisocial) target ($M_{diff} = 1.62$, $SE = .29$, $p < .001$); however, participants attributed effort equivalently to prosocial and antisocial targets when the outcome failed ($M_{diff} = -0.17$, $SE = .28$, $p = 1.00$). Participants also attributed effort more to the prosocial target when successful than when failed ($M_{diff} = 0.95$, $SE = .29$, $p = .006$); whereas participants

attributed effort less to the antisocial target when successful than when failed (M_{diff} = -0.85, SE = .28, p = .019). See Figure 15.

Figure 15: Effort Attribution Means from Risk Sociality by Outcome Knowledge


Error bars: 95% CI

There was a main effect of risk sociality on attribution of task difficulty on the observed outcome, $F(1, 315) = 7.03$, $p = .008$, partial $\eta^2 = 0.02$, such that task difficulty was attributed more to the outcome when the target was prosocial (vs. antisocial). There was a main effect of outcome knowledge, $F(1, 315) = 6.64$, $p = .010$, partial $\eta^2 = 0.02$, such that task difficulty was attributed more to the outcome when failed than when successful. There was no risk sociality by outcome knowledge interaction, $F(1, 315) = 1.51$, $p = .220$.

There was not a significant main effect of risk sociality on the attribution of luck on the observed outcome, $F(1, 315) = 3.16$, $p = .08$; however, there was a main effect of outcome knowledge, $F(1, 315) = 17.98$, $p < .001$, partial $\eta^2 = 0.05$, such that luck was attributed more to

the outcome when successful than when failed. There was no risk sociality by outcome

knowledge interaction, $F(1, 315) = 2.14$, $p = .145$.

Risk-taking Willingness

Participants who reviewed the prosocial risk indicated a greater willingness to take the

same risk as the target than those who reviewed the antisocial target, $F(1, 315) = 52.43$, $p < .001$,

partial $\eta^2 = 0.14$. There was also a main effect of outcome knowledge, $F(1, 315) = 6.56$, $p =$

.001, partial $\eta^2 = 0.04$, such that participants who reviewed the successful outcome were more

likely to take the same risk when the target than those who reviewed the failed outcome. These

main effects were qualified by a significant interaction, $F(1, 315) = 6.12$, $p = .014$, partial $\eta^2 =$

0.02. Bonferroni bias-corrected pairwise comparisons revealed that participants indicated being

unlikely to take the antisocial risk regardless of the outcome ($M_{diff} = 0.18$, $SE = .26$, $p = 1.00$);

however, participants indicated being more likely to take the prosocial risk if the outcome was

successful rather than failed ($M_{diff} = 1.11$, $SE = .26$, $p < .001$). See Figure 16.

Figure 16: Risk-taking Willingness Means from Risk Sociality by Outcome Knowledge

Error bars: 95% CI
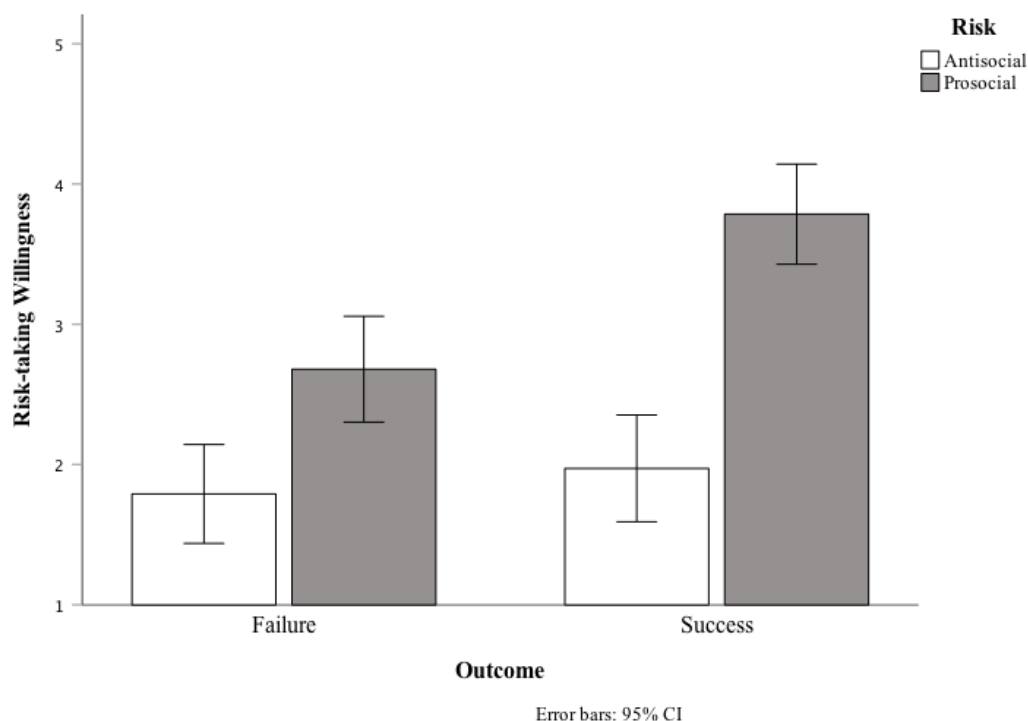
Table 14: Experiment 3B Descriptive Statistics

	Antisocial Risk		Prosocial Risk	
	Outcome Failure	Outcome Success	Outcome Failure	Outcome Success
Responsibility Perception	2.49 (1.79)	2.69 (2.09)	4.15 (1.85)	6.40 (1.50)
Competence Perception	3.82 (1.80)	5.23 (2.09)	5.23 (1.72)	7.32 (1.48)
Warmth Perception	2.82 (1.91)	2.42 (1.80)	6.71 (1.76)	7.40 (1.52)
Risk Perception	5.77 (1.23)	5.12 (1.53)	5.69 (1.23)	4.60 (1.34)
Cost Perception	6.06 (1.23)	5.12 (1.95)	5.72 (1.39)	3.63 (1.53)
Benefit Perception	1.59 (1.29)	2.58 (1.99)	3.09 (1.90)	5.96 (1.08)
Ability Attribution	4.17 (1.85)	3.54 (1.95)	3.96 (1.80)	5.05 (1.34)
Effort Attribution	4.20 (1.99)	3.35 (1.72)	4.03 (1.90)	4.98 (1.52)
Task Difficulty Attribution	4.13 (1.85)	3.36 (1.82)	4.41 (1.75)	4.14 (1.72)
Luck Attribution	3.50 (1.86)	4.66 (1.96)	4.16 (1.83)	4.73 (1.62)
Risk-taking Willingness	1.79 (1.51)	1.97 (1.48)	2.68 (1.85)	3.79 (1.78)

Note. Condition means (standard deviations are in parentheses).

Discussion

Hypotheses were confirmed in the direction predicted, such that the sociality of the risk-taker's impact influenced evaluations of risk-taking. Specifically, relative to the antisocial risk-taker, the prosocial risk-taker was evaluated as more responsible (less reckless) and their risk-taking behavior was perceived as less risky, less beneficial, and more costly. Further, participants who reviewed the prosocial (vs. antisocial) risk-taker were more willing to take the same risk as the target.

Outcome knowledge had a relatively consistent but weaker influence on the perception of risk-taking compared to Experiments 1B and 2B. Successful (vs. failed) risk-taking was viewed as more competent, warm, responsible, beneficial, and less reckless, risky, and costly; however, importantly, this seems to be primarily driven by the prosocial risk-taker as the antisocial risk-taker was rated equivalently unfavorably regardless of the outcome. Further, participants who reviewed the successful (vs. failed) risk-taker were more willing to take the same risk as the target, but again this was driven by the prosocial risk-taker.

When making attributions for the observed outcome, participants attributed ability, effort, and task difficulty more to the prosocial (vs. antisocial) risk-taker; participants attributed success (vs. failure) more to luck and less to task difficulty. Interestingly, participants attributed the success of the prosocial (vs. antisocial) risk-taker more to ability and effort. However, participants attributed ability and effort to the failed risk equivalent to the prosocial and antisocial risk-taker.

This study provides further evidence that risk-taking can be disambiguated from other features of the risk situation, particularly regarding the sociality of the risk-taker and outcome knowledge of the risk taken in ways consistent with the hypothesized normative lay theory of

risk-taking. Outcome knowledge appears to play a largely additive role in relation to risk sociality in the perceptions of risk-taking. Findings suggest that risk sociality and outcome knowledge not only influence how people perceive risk-taking, but also people make sense of the outcomes of risk-taking they observe: risk sociality and outcomes are interactive in explaining outcome attribution, at least for attributions of ability and effort. That is, ability and effort tend to be granted to prosocial risk-takers who are successful; however, a lack of ability and effort are undifferentiated for prosocial and antisocial risk-takers who fail. These findings further support the idea that observing a prosocial (vs. antisocial) and successful (vs. failed) risk-taker can influence the perceiver's own willingness to take the risk, namely a successful prosocial risk.

Chapter VIII: General Discussion

Storytellers, thinkers, and scientists have long been curious about the nature of risk-taking and how to interpret it. Aristotle (2000) claimed a moderate willingness to face risk is courageous and admired, but an excess of risk-taking is foolish and disparaged. But what does a moderate or excess amount of risk-taking really mean? This dissertation attempts to address this question and suggests the answer is at least partially about the people who take the risk, how those people approach the risk, how others are impacted by the risk, and whether taking the risk results in a fulfilled goal. Despite this extensive and longstanding interest in risk-taking, little empirical work in psychology has focused on how everyday people come to make meaning of risk-taking, the specific features relevant to form those meanings, and how such meanings influence perceptions, attitudes, and behaviors. This dissertation attempts to address this gap in the psychological literature and empirically test whether people make meaning of risk-taking

using a normative lay theory of risk-taking that posits that risk behavior is understood by lay persons with a sense of responsibility or recklessness.

My model, called the normative lay theory of risk-taking, proposes the following central assumptions: (a) Risk-taking is generally ambiguous and can be disambiguated from at least a few key parameters; (b) Seeing these parameters can enact beliefs about risk-taking to make meaning of the risk and risk-taker; (c) This lay theory broadly reflect risk-taking in a bold and favorably connoted form (*responsible risk-taking*) or in a rash and unfavorably connoted form (*reckless risk-taking*). These beliefs, in turn, can facilitate distinct sets of perceptions, attitudes, and behaviors. The hypothesized key parameters of interest include perceptions of target competence, decision impulsivity, risk sociality, and outcome knowledge. In three pairs of experiments, I tested whether responsible (vs. reckless) interpretations of risk-taking were activated when an observed risk-taker is competent (vs. incompetent) and the risk-taking is deliberative (vs. impulsive), prosocial (vs. antisocial), and successful (vs. failed).

I found that competent risk-takers were clearly favored and admired relative to incompetent risk-takers, when the outcome of the risk was unknown (Experiment 1A). Specifically, the competent (vs. incompetent) risk-taker was evaluated as more responsible (and less reckless) and their risk-taking behavior was perceived as less risky, less costly, more beneficial, and more likely a risk that participants would take. The results of the second parameter tested—decision impulsivity—mirrored that of target competence (Experiment 2A). When the outcome was unknown, impulsive (vs. deliberative) risk-taking was viewed as more reckless (less responsible), more incompetent, more risky, more costly, less beneficial, and less likely a risk that participants were willing to take. The impulsive (vs. deliberative) risk-taker was also predicted to be more regretful of their decision and less likely to succeed. The third

parameter—risk sociality—was found to have an effect consistent with that of target competence and decision impulsivity (Experiment 3A). When the outcome is unknown, prosocial (vs. antisocial) risk-taking was viewed as more responsible (less reckless), more competent, more warm, less risky, less costly, more beneficial, and more likely a risk that participants were willing to take. Further, the prosocial risk-taker was predicted to be less regretful of their decision and more likely to succeed than the antisocial risk-taker.

The results from Experiments 1A, 2A, and 3A clearly indicate that people's perceptions of risk-taking, the risk-taker, and their hypothetical engagement with risk are mutable depending upon whether the risk-taker was competent or not, whether the risk-taker approached the decision carefully or impulsively, or whether the risk could potentially help or harm others. Despite the odds of success/failure were standard across experiments (every risk taken had a 50/50 probability of doubling the investment or total loss) and participants did not know the outcome of the risk taken, the proposed parameters not only influenced the subjective understanding of the risk as reckless/responsible but also changed the perception of risk, cost, and benefit possible as well as their own willingness to take such a risk. This implies that the provided probabilities of success were altered given the additional parameter information provided. These findings suggest that these parameters are important considerations in risk perceptions and useful components of the mental calculus of determining whether a risk is "good" or "bad" and worthy of taking.

The fourth and final parameter—outcome knowledge—was tested in relation to the other parameters. Across all three experiments (Experiments 1B, 2B, and 3B), outcome knowledge generally played a role in the majority of the outcomes, consistent with the other parameters. Successful (vs. failed) outcomes tended to yield views of the risk-taking as more responsible

(less reckless), less risky, less costly, more beneficial, and more likely a risk that participants were willing to take. However, an important caveat for risk sociality (Experiment 3B) is that the effect of outcome knowledge was primarily driven by the prosocial risk-taker who was successful as antisocial risk-taking tended to be disparaged regardless of the outcome. This finding suggests that the moral violation of potentially harming others nulls the value of considering whether the outcome was successful/failed. Although outcome knowledge was generally found to be an influential parameter in the understanding of risk-taking, outcome knowledge appears to carry an independent, additive effect except for when the content of the risk involves helping or harming others.

Although exploratory, the outcome knowledge experiments allowed for the study of what attributions participants make for the observed outcomes. In Experiment 1B, participants tended to attribute outcomes of competent risk-taking to target ability and effort and incompetent risk-taking to task difficulty and luck. Ability and effort were strongly attributed to the outcome when successfully pursued by the competent risk-taker; however, ability and effort were least attributed to a successful outcome if the risk-taker was incompetent. The success of an incompetent risk-taker appeared to be credited to an easy task and pure luck. In Experiment 2B, ability and effort tended to be denied to the outcome of impulsive risk-takers who were successful. Impulsive risk-takers who found success are mainly viewed as lucky, while failed deliberative risk-takers are seen as unlucky. In Experiment 3B, participants tended to attribute ability, effort, and task difficulty more to the prosocial (vs. antisocial) risk-taker; participants attributed success (vs. failure) more to luck and less to task difficulty. However, ability and effort tended to be granted to prosocial risk-takers who were successful; however, a lack of ability and effort are undifferentiated for prosocial and antisocial risk-takers who failed.

Across the experiments, I did not observe many clearly consistent patterns in outcome attributions; however, I did find a few interesting patterns to note. First, ability and effort attributions tended to be correlated and operate similarly for these studies. This makes sense as ability and effort could be considered to be a part of a broader category of agency (Bakan, 1966). Second, ability/effort tended to be inversely related to luck, particularly with regard to successful outcomes. Perhaps this is because when a risk-taker is successful, it is because they are assumed to have the ability and effort needed for success as with the case of a competent or deliberative risk-taker; however, if an incompetent or impulsive risk-taker succeeds, it may be assumed that they must have just been lucky. Lastly, failed outcomes tend to be attributed to task difficulty, especially when the risk-taker is competent or deliberative. If a skilled or thoughtful risk-taker fails, participants must be assuming the task was too difficult to reasonably succeed.

In summary, these experiments provide foundational and compelling evidence that risk-taking can be disambiguated from parameter features of the risk situation in ways consistent with the hypothesized normative lay theory of risk-taking. Findings suggest that the tested parameters not only influence how people perceive risk-taking, but also people make sense of the outcomes of risk-taking they observe. This set of findings further support the idea that observing said parameters of another risk-taker can influence the perceiver's own willingness to take a similar risk. These findings contribute to the social perception, lay theories, and risk-taking literatures by suggesting that (a) risk-taking is an interesting and nuanced object of social perception, (b) social stimuli influence how people make meaning of risk-taking, and (c) social stimuli influence risk perceptions and engagement.

Theoretical and Practical Implications

These findings support that people use responsible and reckless understandings as a lay theory of risk-taking. Though risk-taking is predominantly studied from a decision-making or public health perspective, little work approaches risk-taking from a social perception perspective. This dissertation attempts to address this gap and finds that risk-taking is a potentially theoretically rich object of social perception to consider. The present dissertation also lays a foundation to study how people make meaning of risk-taking. Given the utility and interest in documents lay persons' intuitive understanding of psychological phenomena and risk-taking is an arguably ubiquitous and ambiguous concept that people engage in, risk-taking represents an attractive candidate concept to apply the lay theories approach. Lastly, this dissertation contributes to risk-taking and decision-making literatures, by suggesting that people hold lay beliefs of risk-taking that contribute to their understanding of risk-taking. Such beliefs may influence how people perceive and engage with risky decisions or economic games presented to them in research studies and real life. Moreover, the observation of others taking risks appears to be influential in whether observers would be willing to take such a risk as well.

The findings also have practical significance. As lay theories help disambiguate complex phenomena and guide behavior, holding a lay theory of risk-taking could impact engagement with risk behavior that potentially promotes or compromises health and prosperity. For example, the coronavirus pandemic has forced humanity to face, among other things, attention to risk. Most people are attempting to understand the risk of transmitting infection, severe illness, and death from going to work, wearing a mask, attending public gatherings, getting the vaccine, etc. In the U.S., large sections of the country—especially in the South—have very low vaccination rates, which increases the local risk of infection and death, because many people in those areas

are refusing to be vaccinated (CDC, 2021). This sets up a situation in which many people are viewing vaccine refusers who are taking a big risk to their health and ultimately the health of their communities. In this example, the content of the risk is antisocial, which suggests that people would likely view them as reckless and incompetent regardless of whether the target gets sick or not; however, based on the current findings, observers should also be less likely to refuse the vaccine as well. This is consistent with the sequence of recent events in which the widely reported rise in coronavirus cases and hospitalizations (particularly in Arkansas and Missouri) was soon followed by a rapid increase in vaccinations in that region after a long plateau of vaccination rates (CDC, 2021), potentially implying that seeing reckless risk-taking lead many people to refuse to take the same risk of refusing the vaccine. If this is the case, then it is practically important to know this to help save lives. The decision to accept or refuse the coronavirus vaccine amid a prolonged global pandemic with millions of deaths is just one of many sorts of risk-taking in which this research could be practically applied and extended.

Limitations and Future Directions

Though the current findings are interesting and confirm predictions, this research is not without limitations. First, only a narrow operationalization of risk-taking—financially investing in a new business venture with unexpected inheritance—was used with a variation of cleaning or polluting environmental resources of vulnerable communities for the risk sociality experiments. Coming into an inheritance and potentially investing in new business ventures may give participants the idea that the target was high socioeconomic status, White, and/or male (given social inequalities in intergenerational wealth and investment power), which would potentially somewhat limit findings to perceptions of those groups. Also, the risk sociality context is rooted

in environmental pollution in which the results may also capture (anti-)environmental attitudes. Further, there are a variety of other risks in other domains worth testing to see if these findings extend to other sorts of risk, especially ones that have broader social group associations.

The second limitation concerns the sample characteristics. Though the sample comprises a wide range of adult ages from residents across the U.S., ethnic and cultural minorities outside of the U.S. were not strongly represented. It is worth seeking a more ethnically and culturally diverse sample given that risk perceptions and risk-taking have been found to differ between East and West cultures and ethnic groups.

Lastly, this dissertation tests four key parameters hypothesized to reflect a normative lay theory of risk-taking as reckless or responsible. There are potentially more parameters worthy of consideration when studying risk-taking as well as other lay theories that may exist. In other research, the most nominated traits for reckless and responsible risk-taking were "impulsive" and "intelligent," respectively (Wages et al., in press). This research is consistent with my lay theory of risk-taking, because we found that decision impulsivity is a feature of reckless risk-taking and target competence is a feature of responsible risk-taking. Further, other top traits nominated for reckless risk-taking included "arrogant," "aggressive," and "quick-tempered," (Wages et al., in press), which all have antisocial connotations. Conversely, other top traits nominated for responsible risk-taking included "passionate," "straightforward," and "patient," all traits consistent with prosocial meanings. Again, this research supports our findings that prosociality and antisociality are features of responsible and reckless risk-taking, respectively.

Beyond direct replications, a future direction of this research should seek to confirm the proposed lay theory of risk-taking by testing with different methods. For example, researchers should ask participants open questions about their beliefs about what risk-taking is and content

code the responses for themes consistent with conceptualizing risk-taking as reckless or responsible. Further, researchers should seek to further falsify my theory by testing whether reckless versus responsible understandings are not simply reducible to valence. One way to test this is to frame reckless risk-taking in a positive light and responsible risk-taking negatively confirm that participants react to the risk-taking in similar ways as they did without the valence framing. Another direction to take this research is to test the extent to which these understandings of risk-taking potentiate actual risk-taking behavior rather than only willingness.

Conclusion

The present dissertation proposes and finds evidence for a normative lay theory of risk-taking. This lay theory broadly reflects risk-taking in a bold but ideal form—responsible risk-taking—or a rash and inferior form—reckless risk-taking. In turn, these concepts can facilitate distinct sets of perceptions, attitudes, and behavioral intentions. The first chapter of this dissertation reviews the nature of risk-taking and the power of lay theories, and explains the structure and function of the proposed normative lay theory of risk-taking. Subsequent chapters describe a series of empirical tests of each parameter proposed by this lay theory. Six experiments test and find evidence for the primacy of four parameters that facilitate observers to evaluate risk-taking as responsible or reckless and potentiate a willingness to personally take risks. Risk-taking was generally perceived as responsible (vs. reckless) and personally worthy of imitation when the risk-taker was competent (vs. incompetent), deliberative (vs. impulsive), prosocial (vs. antisocial), and successful (vs. failed). Knowing whether the outcome of the risk taken was successful or failed tended to be a parameter independent from the other parameters.

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