Having Control Over and Above Situations: The Influence of Elevated Viewpoints on Risk Taking

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Abstract
This article examines how consumers’ exposure to the viewpoint of high versus low vertical position changes their risk-taking behavior. The author proposes that consumers’ views of scenery from a high physical elevation induce an illusory sense of control, which in turn intensifies risk taking. Multiple studies show that exposure to the viewpoint of high vertical positions increases risk taking in both laboratory settings (Studies 1a, 1b, and 1c) and real settings (Study 4). In addition, the author demonstrates that an illusory sense of control mediates the effect of an elevated viewpoint on risk taking (Study 2) and that the effect of elevation on risk taking is attenuated when people use a low-level mental construal to process visual information (Study 3).

Keywords
elevation, illusory control, risk taking, vertical position, viewpoint

Real-world examples suggest a link between height and risk taking. For example, in the business world, we often find people who are known as “high risk takers” (e.g., innovators, entrepreneurs, top-level executives) working in offices located on the highest floors and living in penthouse apartments or hilltop houses. Moreover, sensation seekers, famous for their high level of risk seeking (Horvath and Zuckerman 1993), tend to enjoy height and often participate in activities performed at high elevations (e.g., skydiving, bungee jumping, rock climbing). I posit that the relationship between risk taking and high elevation is reciprocal, such that the mere exposure to sceneries of high-rise locations increases risk taking. I argue that people’s view of scenery from a high elevation simulates control over the setting and activates an illusory sense of personal control (Langer 1975). A boosted sense of control subsequently lowers the perception of risk associated with a situation and enhances risk-seeking behaviors (Horswill and McKenna 1999; Lerner and Keltner 2001; Thompson 1999).

This article tests the effect of pictures of elevated viewpoints on people’s risk taking in both laboratory and field settings and provides empirical support for my proposed underlying...
mechanism: the mediating role of illusory control on the relationship between elevation and risk taking. I also examine whether an elevated viewpoint changes participants’ level of mental construal. I introduce a boundary condition of the effect, showing that a low-level construal of visual information inhibits holistic processing and seeing the big picture, which subsequently attenuates the effect of an elevated viewpoint on risk taking.

This research extends prior work on consumers’ responses to visual stimuli by showing the link between high-elevation sceneries and risk taking. This study also contributes to the literature on perceived control by highlighting the way “control” is grounded in cognition, so that an elevated viewpoint can trigger mental imagery of having control and boost a sense of control. By developing and testing a theoretical model that predicts both when and why sceneries of high vertical positions influence risk taking, this research contributes to an understanding of how pictures shape consumers’ thoughts and behaviors.

I begin with a review of the literature on consumer risk taking and then examine how people’s interpretations of an elevated viewpoint change their risk perception and risk-taking behavior. Subsequently, I report six studies, including one field experiment testing the effect of elevated viewpoints on risk taking, and the proposed underlying mechanism. Finally, I discuss theoretical and practical implications of this work and directions for future research.

Theoretical Background

Risk Taking and Consumer Behavior

In consumer decision making, risk usually refers to the uncertainty that the decision will satisfy the consumption goals or lead to negative consequences (Cox and Rich 1964). Marketing scholars have extensively studied factors affecting risk taking, given that these factors shape consumers’ decisions and behaviors in risky situations. Table 1 provides a brief summary of prior research on antecedents of risk taking in the consumer decision-making domain.

I categorized antecedents of risk taking into three groups of factors: personal, decisional, and situational. Personal factors relate to the decision maker, including demographic or socioeconomic characteristics, personality variables, thoughts, beliefs, and emotional experiences. For example, Lerner and Keltner (2001) showed that emotions could change individuals’ tendencies to take risk. Specifically, they found that fear reduces risk taking, and anger increases risk taking. Decisional factors are directly related to the decision at hand. They are typically attributes on which individuals evaluate risk and decide how much risk they are willing to take. One decisional factor frequently studied in previous research is the framing of outcomes as gains versus losses. Research has shown that loss framing (compared with gain framing) increases risk taking (Tversky and Kahneman 1981). Temporal framing of risk is another decisional factor highlighted by prior research.

Chandran and Menon (2004) showed that framing health hazards as occurring every day versus every year increases risk perception and individuals’ intentions to avoid the risk. Finally, situational factors are neither related to the decision maker nor directly relevant to the decision at hand. Situational factors are often present when individuals make a judgment that affects risk perception and risk-taking tendencies. For example, Duclos, Wan, and Jiang (2013) showed that social exclusion increases financial risk taking because interpersonal rejection enhances the instrumentality of money as a substitute for popularity.

A major difference between decisional and situational factors is the broadness of their impact. Decisional factors are linked to the decision at hand, and their effect on risk taking is mostly limited to that decision. By contrast, situational factors have a broader impact, and their effect can carry over several decisions as long as the factor is present. Despite this broader impact, previous research has examined these antecedents less frequently than personal and decisional factors. Adding to the body of work on situational antecedents of risk taking, I believe that scenery pictures—specifically, sceneries of elevated viewpoints—have the potential to influence consumers’ risk-taking behavior. Consumers are exposed to images of landscape sceneries in various marketing stimuli such as advertisements, billboards, product packages, websites, and decorative pictures in retail settings. These images facilitate experiencing the depicted scene (Elder and Krishna 2012; Risen and Critcher 2011) and communicate with viewers, subsequently shaping people’s thoughts and behaviors (Scott 1994; Scott and Vargas 2007). Accordingly, I expect sceneries of elevated viewpoints to help individuals experience the sensation of being in high-rise locations, and this experience will shape their thoughts and behaviors. Thus, to better understand how elevated viewpoints shape thoughts and behaviors, this study must examine how people interpret experiencing elevated positions.

How People Interpret an Elevated Viewpoint

People generally have a positive attitude about height and being “on top.” This positive perception can be traced back to literature and everyday life, as the word “up” and an upward direction have been associated with positive figures such as God, heaven, power, and success (Judge and Cable 2004; Meier and Robinson 2004; Schubert 2005). Meier and Robinson (2004) showed that people evaluate positive words faster when they appear on the top of a computer screen and evaluate negative words faster when they appear on the bottom of the screen. Schubert’s (2005) findings demonstrate that the comparative vertical position of two agents influences people’s judgment of their power; the agent in the higher vertical position is judged to be more powerful than the one in the lower position. In summary, research suggests that people perceive height and being on top as an indication of success, power, and fame.
### Table 1. Summary of Past Research on Antecedents of Risk Taking.

<table>
<thead>
<tr>
<th>Research</th>
<th>Antecedent of Risk Taking</th>
<th>Nature of the Factor</th>
<th>Summary of Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locander and Hermann (1979)</td>
<td>Specific self-confidence</td>
<td>Personal</td>
<td>Individuals with high specific self-confidence (confidence with respect to the decision at hand) seek information to reduce risk of purchasing products more than those with low specific self-confidence.</td>
</tr>
<tr>
<td>Tversky and Kahneman (1981)</td>
<td>Gain/loss framing of outcome</td>
<td>Decisional</td>
<td>People are more likely to take risk when outcomes of a risky decision are framed as losses rather than gains.</td>
</tr>
<tr>
<td>Puto (1987)</td>
<td>Shift of the reference point</td>
<td>Decisional</td>
<td>Consumers’ expectations, buying objectives, sales messages, and buying decision justification can shift the reference point of evaluation and subsequently affect risk-taking behavior.</td>
</tr>
<tr>
<td>Krueger and Dickson (1994)</td>
<td>Self-efficacy</td>
<td>Personal</td>
<td>Receiving feedback of being competent at decision making increases risk taking, and receiving feedback of not being competent at decision making reduces risk taking.</td>
</tr>
<tr>
<td>Mittal and Ross (1998)</td>
<td>Positive and negative affect</td>
<td>Personal</td>
<td>Compared to negative mood, positive mood reduces risk taking. The effect of framing on risk taking under negative affect is stronger than the same effect under positive affect.</td>
</tr>
<tr>
<td>Lerner and Keltner (2001)</td>
<td>Fear</td>
<td>Personal</td>
<td>Fearful people have pessimistic risk estimates and are less likely to take risk.</td>
</tr>
<tr>
<td>Mittal, Ross, and Tsiros (2002)</td>
<td>Issue capability</td>
<td>Personal</td>
<td>Angry people have optimistic risk estimates and are more likely to take risk.</td>
</tr>
<tr>
<td>Mittal and Griskevicius (2016)</td>
<td>Childhood socioeconomic status</td>
<td>Personal</td>
<td>Regardless of current socioeconomic status, people who grew up in low socioeconomic status conditions are more willing to take health risks and are less interested in health coverage compared to those who grew up with high socioeconomic status.</td>
</tr>
</tbody>
</table>

(continued)
Research Table 1.

<table>
<thead>
<tr>
<th>Research</th>
<th>Antecedent of Risk Taking</th>
<th>Nature of the Factor</th>
<th>Summary of Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murdock and Rajagopal (2017)</td>
<td>Emphasizing social</td>
<td>Decisional</td>
<td>Highlighting social versus health consequences of a negative health outcome enhances perceived risk of the unhealthy behavior leading to the negative health outcome and increases people's intentions to avoid the unhealthy behavior.</td>
</tr>
<tr>
<td>Kupor, Liu, and Amir (2018)</td>
<td>Interruption</td>
<td>Decisional</td>
<td>A brief interruption during a financial risk decision increases risk taking because the interruption allows a repeat exposure to the decision stimuli and therefore reduces their subjective novelty.</td>
</tr>
<tr>
<td>Long, Fernbach, and De Langhe (2018)</td>
<td>Sense of understanding</td>
<td>Personal</td>
<td>Subjective sense of understanding of what a company does reduces perceived risk of investment in that company. Investors invest in difficult to understand companies for a client with high risk tolerance more than one with low risk tolerance.</td>
</tr>
</tbody>
</table>

Furthermore, being at higher elevations played an important role in human evolution by offering numerous benefits (Jackson and Cormack 2007). Increased visibility provided by elevated surfaces helped humans access targets such as animal prey, water, plant resources, and other humans. It helped humans create large and detailed cognitive maps (Jackson and Cormack 2007). Higher elevations also offered defensive advantages by enabling humans to see approaching threats and escape from predators and other humans, which were a major cause of mortality (Keeley 1996). In summary, throughout history, higher elevation has helped people protect themselves against imminent dangers and access valuable resources, which increased their chance of survival, reduced uncertainty, and provided greater control over life.

The association between vertical position and control is present in many domains. On the one hand, people perceive individuals located at a higher vertical position as more powerful (Schubert 2005), and power is predicated on having control over valuable resources (Fiske 1993; Keltner, Grunenfeld, and Anderson 2003). On the other hand, occupying elevated positions enables individuals to look over objects and people at lower elevations, helping them assume a sense of control. In language, people see control as a mechanism that applies from above. For example, individuals tell each other that they have control “over” situations, that they are “on top of” situations, or that situations are “under” their control (Lakoff and Johnson 1980). Lakoff and Johnson (1980) argued that metaphorical language plays a central role in defining our realities, showing the structure of how we perceive, how we think, and what we do. In summary, a common theme shared across evolutionary and social psychology and linguistics implies that vertical position and being on top is associated with the concept of control.

People are fundamentally motivated to have a sense of control over their surroundings, and the belief that they have an ability to exert control over their environment contributes to both biological and psychological well-being (Fast et al. 2009; Leotti, Iyengar, and Ochsner 2010; Thompson 1999). Indeed, perceived control (along with autonomy and need for belonging) is one of the three basic psychological needs fundamental to human motivation (Baumeister and Leary 1995; Deci and Ryan 1985). Individuals’ perception of control does not necessarily reflect their actual control, and they may overestimate their control (i.e., illusions of control) even in situations governed purely by chance (Langer 1975; Thompson 1999; Thompson, Armstrong, and Thomas 1998). Research has shown that the presence of cues associated with control can induce a sense of illusory control (Fast et al. 2009; Langer 1975; Thompson 1999; Thompson, Armstrong, and Thomas 1998). Given that high-elevation sceneries provide cues associated with the concept of control and that people are strongly motivated to exert control over their environment, I propose that exposure to sceneries observed from a high vertical position triggers an overestimation of one’s control, leading to an illusory sense of control.

In addition to sense of control, when people view from an elevated perspective, they observe objects and people from a distal position, which can prime psychological distance. According to construal-level theory, a psychologically distal position makes people use an abstract processing style (high-level construal), and a proximal position makes them use a concrete processing style (low-level construal) to process information (Trope and Liberman 2010). Thus, it is likely that an elevated viewpoint also leads to an abstract processing style.

The Effect of Control on Risk Taking

In situations perceived as more controllable, people presume that their action will have a positive outcome even if the situation is completely determined by chance (Horswill and McKenna 1999; Weinstein 1980). For example, people believe the odds of a favorable outcome in a dice game are better if they personally roll the dice (Langer 1975). Therefore, experiencing an elevated sense of control leads to optimistic risk perceptions and increases risk-seeking behaviors (Anderson and Galinsky 2006; Horswill and McKenna 1999; Kouchaki, Oveis, and Gino 2014; Lerner and Keltner 2001; Thompson 1999). In a driving simulation, participants chose to drive faster (i.e., take more risk) when they believed they were the driver (i.e., have more control) versus the passenger (i.e., have less control; Horswill and McKenna 1999). Similarly, Lerner and Keltner...
(2001) found that a sense of individual control prompted by anger resulted in optimistic risk assessment and enhanced risk-seeking choices. Moreover, Kouchaki, Oveis, and Gino (2014) showed that individuals experiencing guilt presumed higher levels of control over their environment than did those in a neutral state, which subsequently increased risk-taking tendencies. In summary, prior research has demonstrated that a sense of control leads people to have a lower risk assessment and choose risky options. Accordingly, I predict that exposure to a physically elevated viewpoint enhances risk taking, because the observed sceneries give people an illusory sense of control. Thus, a sense of illusory control mediates the relationship between an elevated visual perspective and risk taking.

As noted previously, an elevated viewpoint can also lead to an abstract processing style. Given that an abstract processing style (high-level construal) has been linked to risk taking (Sagristano, Trope, and Liberman 2002), I also explore the role of construal level in the relationship between an elevated visual perspective and risk taking.

Overview of Studies

In six studies, I examine the effect of pictures of physically elevated viewpoints on levels of mental construal, illusory control, and risk taking. Studies 1a, 1b, and 1c explore the effect across different measures of risk taking. Study 2 directly tests whether an illusory sense of control and/or a high level of mental construal mediates the effect of elevation on risk taking. Study 3 uses different styles of processing visual information as a moderating factor and introduces a boundary condition for the effect. Finally, Study 4 shows that the effect of elevation on risk taking also holds in a real-world consumption setting. Table 2 shows an overview of the six studies and main findings.

Study 1

The main objective of Study 1 was to test the effect of a physically elevated viewpoint on risk taking. I tested this effect in three studies using different dependent variables. Study 1a examines the effect of elevation on risk taking using a behavioral measure. This study also examines whether a high-elevation outlook leads to an abstract processing style, given that such an outlook depicts objects and people at a distal position. Studies 1b and 1c observe the effect of a physically elevated viewpoint on people’s likelihood of purchasing new products and their willingness to pay for insurance.

Study 1a

Method. Two hundred twenty-three (117 men; M_age = 21.5 years, SD = 3.5) students participated in Study 1a for course credit. The study was introduced as a memory game in which participants play a game of chance and must remember the background pictures they see. Participants were told that they would answer a few questions about the background pictures at the end. The game was an edited version of the Balloon Analogue Risk Task (BART; Lejuez et al. 2002). Research has shown that BART scores predict risky behaviors: people who show higher risk-taking tendencies in BART are more likely to engage in real-world risky behaviors, such as substance abuse (Lejuez et al. 2002). In this task, participants went through ten distinct trials. In each trial, they saw a balloon on a computer screen and were asked to use a slider to indicate how much air they would like to pump into the balloon. The balloons had various capacities (unknown to participants) and popped if they were pumped beyond their capacity. After participants decided how much air they wanted to pump, they found out whether they had pumped more or less than the balloon’s capacity. The game was programmed so that it assigned a random capacity between .1 and .5 cubic feet to each balloon. If participants pumped less than the balloon’s capacity, they earned $1 for every .01 cubic feet of air they pumped. If they pumped more than the balloon’s capacity, the balloon popped, and they did not receive any money for that balloon. For example, if someone pumped .30 cubic feet of air into a balloon and it did not pop, $30 would be added to her total balance. The goal of the game was to earn as much money as possible across the ten balloons. Although pumping more air increased the amount of money someone could win on a given balloon, it also increased the chance of popping and earning no money on that balloon. Thus, the pumping amount indicated risk-taking tendency. Participants were informed that at the end of the study, two participants would be randomly selected to receive a portion (i.e., 20%) of their total balance in the form of a gift card.

To manipulate participants’ sense of elevation, a background picture accompanied each trial of the game. Background pictures for half the participants were taken from high vertical positions, and the other half were taken from low vertical positions. Web Appendix A illustrates a sample trial. Participants were randomly assigned to a high- or low-elevation condition. Because the game had ten trials, ten different pictures taken from a high or low elevation (based on the condition) were used as the background. After participants completed all the trials, they received a set of six pictures and were asked if they recognized any of the background pictures in the set. Only two of the six pictures were from the set of background pictures they saw. For the manipulation check, participants were asked to indicate, on a seven-point scale, whether they felt as though they were at a high altitude when they were viewing the background pictures.

After participants completed the game, I measured their construal level using the Behavioral Identification Form (BIF; Slepian, Masicampo, and Ambady 2015; Vallacher and Wegner 1987). The BIF has a list of 25 behaviors; for each behavior, participants chose between two identifications, one from a high-level construal and the other from a low-level construal. For instance, voting might be construed as influencing the election (i.e., high-level construal) or making a ballot (i.e., low-level construal). Participants were asked to choose the option they believed was more appropriate for each behavior. Choosing high-level-construal options more frequently
Table 2. Summary of Results by Study Condition.

Study 1a (BART; N = 223, 52% Male, M<sub>age</sub> = 21.5 Years, Students)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low Elevation (N = 114)</th>
<th>High Elevation (N = 109)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of pumping (cubic foot)</td>
<td>.235 (.09)</td>
<td>.254 (.10)</td>
<td>.03</td>
</tr>
<tr>
<td>Selecting high-level construal options</td>
<td>65.5% (21.1%)</td>
<td>62.6% (20.6%)</td>
<td>.30</td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sceneries of elevated viewpoints increase risk taking measured by how much air participants decided to pump to the balloons. Sceneries of elevated viewpoints did not significantly change construal level.

Study 1b (Likelihood of Purchasing New Products; N = 203, 41% Male, M<sub>age</sub> = 36.4 Years, MTurk)

<table>
<thead>
<tr>
<th>Product</th>
<th>Low Elevation (N = 96)</th>
<th>High Elevation (N = 107)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Blind-Spot Mirror</td>
<td>4.33 (2.01)</td>
<td>4.69 (1.76)</td>
<td>.17</td>
</tr>
<tr>
<td>Lockitron</td>
<td>3.22 (1.94)</td>
<td>3.78 (2.00)</td>
<td>.04</td>
</tr>
<tr>
<td>Self-Stirring Mug</td>
<td>2.88 (1.97)</td>
<td>3.35 (2.12)</td>
<td>.10</td>
</tr>
<tr>
<td>Heated Butter Knife</td>
<td>3.26 (2.01)</td>
<td>3.64 (1.98)</td>
<td>.18</td>
</tr>
<tr>
<td>Overall</td>
<td>3.39 (1.89)</td>
<td>3.87 (1.79)</td>
<td>.02</td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sceneries of elevated viewpoints increase the likelihood of purchasing new products.

Study 1c (Willingness to Pay for Car Insurance; N = 179, 34% Male, M<sub>age</sub> = 37.9 Years, MTurk)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low Elevation (N = 99)</th>
<th>High Elevation (N = 80)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willingness to pay</td>
<td>$1.195 ($1,022)</td>
<td>$922 ($745)</td>
<td>.05</td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sceneries of elevated viewpoints reduce willingness to pay for car insurance.

Study 2 (Card Game: Betting on Guessing a Randomly Selected Card; N = 188, 52% Male, M<sub>age</sub> = 22.2 Years, Students)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low Elevation (N = 94)</th>
<th>High Elevation (N = 94)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of betting</td>
<td>Only suit = 75.2%</td>
<td>Only suit = 68.2%</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>Only rank = 13.8%</td>
<td>Only rank = 14.5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Both suit and rank = 11.0%</td>
<td>Both suit and rank = 17.3%</td>
<td>.03</td>
</tr>
<tr>
<td>Perceived control</td>
<td>2.49 (1.3)</td>
<td>2.95 (1.6)</td>
<td>.90</td>
</tr>
<tr>
<td>Selecting high-level construal options</td>
<td>57%</td>
<td>57%</td>
<td>.02</td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Perceived control mediates the effect of elevation on risk taking but construal level does not mediate this effect.

Study 3 (Choosing Between a Sure Gain and a Probabilistic Gain Presented as a Game of Chance with the Same Expected Value [i.e., Taking Risk]; N = 743, 38% Male, M<sub>age</sub> = 38.2 Years, MTurk)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low Elevation (N = 365)</th>
<th>High Elevation (N = 378)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of People Who Chose to Play the Game (Risk Takers)</td>
<td>65%</td>
<td>78%</td>
<td>.02</td>
</tr>
<tr>
<td>High-level processing (N = 241)</td>
<td>69%</td>
<td>80%</td>
<td>.04</td>
</tr>
<tr>
<td>Neutral (N = 242)</td>
<td>74%</td>
<td>70%</td>
<td>.46</td>
</tr>
<tr>
<td>Low-level processing (N = 260)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Low-level processing attenuates the effect of elevation on risk taking.

Study 4: Field Experiment (Purchase of Lottery Tickets; N = 913, 71% Male, Customers of a Convenience Store)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Low Elevation (N = 455)</th>
<th>High Elevation (N = 458)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural logarithm of the amount spent on lottery tickets</td>
<td>1.83 (1.01)</td>
<td>2.03 (0.97)</td>
<td>.003</td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exposure to scenery of an elevated viewpoint increases makes customers of a convenience store to take more risk by spending more on lottery tickets.

The Relative Standing Study (Web Appendix D; Six Hypothetical Choices Between a Sure and a Probabilistic Gain; N = 284, 49% Male, M<sub>age</sub> = 35.2 Years, MTurk)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Down (N = 96)</th>
<th>Middle/Near the Top (N = 93)</th>
<th>Up (N = 95)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of time participants selected probabilistic gain</td>
<td>1.17 (1.46)</td>
<td>1.63 (1.64)</td>
<td>1.68 (1.77)</td>
<td>.055</td>
</tr>
<tr>
<td>Main finding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Providing information about participants’ relative standing does not change the effect of elevated viewpoint on risk taking.
shows an abstract processing style. The study ended with a few demographic questions and a debriefing statement. The debriefing statement highlighted that participants’ responses were not linked to their name or contact information and that the randomly selected participants could not be compensated based on their total balance in the BART. Instead, two participants were randomly selected through the sign-in sheets, and each of them received a $50 gift card. Note that for 98% of the participants, 20% of their total balance amounted to less than $50.

Results. Participants who viewed the high-elevation pictures agreed more than those who viewed the low-elevation pictures that they felt as though they were at a high altitude (M<sub>high</sub> = 4.50, SD = 1.84 vs. M<sub>low</sub> = 3.21, SD = 1.74; t(221) = 5.40, p < .001). I ran a repeated-measures analysis of variance using the number of pumps across ten trials. Results show that participants who viewed the high-elevation pictures pumped the balloons more (M = .254, SD = .10) than those who saw the low-elevation pictures (M = .235, SD = .09; F(1, 221) = 4.73, p = .031, partial η<sup>2</sup> = .021). The results confirm that being exposed to high-elevation sceneries increases risk taking.

Next, I analyzed participants’ responses to the BIF. Results show that the frequency of selecting high-level-construal options was not significantly different between the high-elevation (62.60%, SD = 20.59) and the low-elevation (65.51%, SD = 21.08; t(221) = 1.04, p = .299) conditions. Moreover, I also examined a subset of actions (ten items) that were studied in Slepian, Masicampo, and Ambady (2015). The results show no significant difference in the frequency of selecting high-level-construal options between the high- (61.64%, SD = 24.69) and the low- (65.61%, SD = 26.21; t(221) = 1.16, p = .246) elevation conditions. Thus, I was unable to show that exposure to high-elevation pictures induces abstract thinking. There might have been a confounding factor in using balloons with the manipulation of elevation, given that increasing the volume of the balloons is consistent with higher elevation. To resolve this issue, I used other measures of risk taking in subsequent studies. In the next two studies, I tested the effect of physically elevated viewpoints on risk taking in consumer decision-making domains.

Study 1b
Study 1b examines the effect of physically elevated viewpoints on purchasing new products. Research has shown that people consider purchasing new products a risky decision. When the risk increases, the diffusion rate and adoption level decrease (Ram and Sheth 1989; Rogers 1995; Sheth 1981). Thus, companies usually offer incentives (e.g., free product trial, free samples, money-back guarantees) to alleviate the risk associated with the new offerings and to encourage people to test and purchase new products. Because an elevated perspective increases risk taking, I expect people exposed to high-elevation sceneries to be more willing to purchase new products than people exposed to low-elevation images.

Method. I recruited 203 (84 men; M<sub>age</sub> = 36.4 years, SD = 11.4) people from Amazon Mechanical Turk (MTurk) to participate in this study. Participants were randomly assigned to the high- and low-elevation conditions. To manipulate participants’ sense of elevation, I asked them to observe five pictures of scenery on their computer screen. The pictures for half the participants were taken from high vertical positions, and the other half from low vertical positions. Each picture was presented on one page, and participants were asked to imagine themselves in the scenery and describe their feelings in a few sentences. In a pretest, participants who viewed the high-elevation pictures agreed more than those who viewed the low-elevation pictures that they felt as though they were at a high altitude (p < .001).

Next, participants were asked to complete an unrelated task about new product evaluation. I used four new products that were developed recently and were available for purchase online or in stores. Web Appendix B shows a list of these products and the descriptions used in the study. Products were randomly presented to participants, who were asked to read the description of each product and then indicate on a seven-point scale (1 = “extremely unlikely,” and 7 = “extremely likely”) their likelihood of purchasing the product for the given price. The study ended with a few demographic questions and a debriefing statement.

Results. I conducted a repeated-measures analysis of variance using the likelihood of purchasing the four products as the repeated measures and elevation conditions as the between-participants factor. Results confirm a significant main effect of elevation on the likelihood of purchasing the new products (F(1, 201) = 5.92, p = .016, partial η<sup>2</sup> = .029), showing that participants in the high-elevation condition, on average, were more likely (M = 3.87, SD = 1.79) to purchase the new products than those in the low-elevation condition (M = 3.39, SD = 1.89). I found no significant interaction between products and elevation conditions (F(3, 199) < 1).

Study 1c
Study 1c examines the effect of an elevated perspective on purchasing insurance. When consumers face a significant probabilistic loss, they decide to purchase insurance to avoid the loss and be compensated if the loss occurs (Johnson et al. 1993). The more risk averse consumers are, the higher premium they are willing to pay to purchase insurance. Because an elevated perspective increases risk taking, I expect people exposed to high-elevation images to be willing to pay a lower premium than people exposed to low-elevation images.

Method. I recruited 179 (60 men; M<sub>age</sub> = 37.9 years, SD = 12.7) individuals from MTurk to participate in this study. Participants were randomly assigned to the high- and low-elevation conditions. I used the same procedure as Study 1b to manipulate elevation. After participants described the pictures, they were asked to complete an unrelated task about
purchasing car insurance (adapted from Johnson et al. [1993]). On the computer screen, participants read the following:

Imagine that you have just bought a new $15,000 car and are buying insurance for your car. The insurance package described below includes all coverage mandated by the state including comprehensive and collision insurance. Suppose you are offered this policy. This policy has a deductible of $600, which will be subtracted from the total claims against the policy. In other words, if you make any claims against the policy, the company will give you the total amount of the claims minus the deductible. If your claims in one year total less than $600, the company will pay nothing. If your claims exceed $600, the company will pay the entire amount above $600.

Then participants answered how much they were willing to pay for one year of this coverage. The study concluded with a few demographic questions and a debriefing statement.

**Results.** Participants in the high-elevation condition were willing to pay a lower premium (M = $922.00, SD = $745.50) to purchase the insurance than those in the low-elevation condition (M = $1,195.50, SD = $1,021.80; t(177) = 2.00, p = .047, Cohen’s d = .30). I checked the distribution of participants’ willingness-to-pay data, and because it was positively skewed, I also ran the analysis using the log-transformed data. Results were the same, showing that people in the high-elevation condition were willing to pay a lower premium (M = 6.51, SD = .90) to purchase the insurance than those in the low-elevation condition (M = 6.80, SD = .81; t(177) = 2.19, p = .030, Cohen’s d = .33).

**Discussion**

Study 1 supports my proposed effect of elevation on risk taking across three different measures. Specifically, Study 1a shows that participants who were exposed to high-elevation images had higher risk-taking tendencies because they pumped the balloon more than those in the low-elevation condition. However, I was unable to show that an elevated perspective leads to an abstract processing style. In Study 1b, participants in the high- versus low-elevation condition took more risk by indicating a higher likelihood of purchasing new products. Similarly, in Study 1c, participants in the high- versus low-elevation condition took more risk, because they were willing to pay less for the car insurance. Next, in Study 2, I examine the effect of vertical-position sceneries on illusory control and tested the proposed underlying mechanism.

**Study 2**

I propose that a physically elevated viewpoint enhances risk taking by giving individuals an illusory sense of control. I believe that sceneries of high elevation provide the mental simulation necessary to retrieve an illusory sense of control, because they often help people see a greater horizontal distance, observe objects and people at lower elevations, and feel in control. Illusory control subsequently increases the likelihood of taking risk and engaging in risky behaviors (Horswill and McKenna 1999; Lerner and Keltner 2001; Thompson 1999). Therefore, I expect the effect of elevation on risk taking to be mediated by illusory control.

**Method**

One hundred eighty-eight undergraduate students (97 men; Mage = 22.2 years, SD = 4.8) participated in this study for course credit. I used a procedure similar to Study 1a. Accordingly, the study was introduced as a memory game in which participants would play a game of chance and be asked to remember the background pictures shown in the game. Participants were told that they would be asked a few questions about the background pictures at the end of the game. I created a new task similar to the BART to measure risk taking. In this task, participants went through 12 distinct trials, including two practice trials. In each trial, the computer randomly selected a card from a deck of playing cards, and participants had to guess what the selected card was. Participants had three betting options for their guess: they could guess only the suit of the card, only the rank of the card, or both the suit and the rank of the card. If they guessed the randomly selected card correctly, they received a prize; if incorrect, they received nothing in that trial.

The probability of guessing only the suit, only the rank, and both the suit and the rank of the card correctly is, respectively, 25% (1-in-4 chance of being right), 7.7% (1-in-13 chance of being right), and 1.9% (1-in-52 chance of being right). I wanted all three betting options to have the same expected value. Accordingly, the prize for a correct guess of only the suit was set at $60, only the rank at $195, and both the suit and the rank at $780. To make the game more similar to a real-world gambling game, participants were told that playing each trial cost $10, and they received a $100 balance to start the game. After participants selected their betting option, they guessed either the suit, the rank, or both, based on the betting option they selected. Subsequently, they saw the randomly selected card and whether their guess was correct. If they guessed correctly, the prize amount was added to their total balance. Otherwise, they received no money on that trial. The goal of the game was to get as much money as possible across the ten trials. Correctly guessing both the suit and rank earned the highest prize, and guessing the rank earned a higher prize than guessing only the suit. However, guessing both the suit and rank also had the lowest chance of being correct, and guessing the rank had a lower chance of being correct than guessing only the suit. Therefore, increased rewards indicated an increased chance of an incorrect guess and earning no money on that trial. In a set of options with the same expected value, those with higher outcome variance are riskier (Mishra 2014). Thus, selecting a higher-priced betting option shows a higher risk-taking tendency. Participants’ total balance in the game was presumably hypothetical, and they did not receive any information regarding actual monetary compensation based on the total balance.
Participants were randomly assigned to the high- or low-elevation condition. To manipulate elevation, each trial included a background picture taken from either a high or low vertical position. Participants were told that the first two trials were for practice and the outcome of those trials would not affect their total balance. No background pictures were provided in the practice trials. After the practice trials, the game had ten trials. Thus, ten different pictures taken from high or low elevation (based on the condition) were used as the background in each condition. Web Appendix C shows screenshots of a sample trial in which a participant chose to guess both the rank and suit of the randomly selected card.

After participants completed five trials, I measured their perceived control over the game by asking two questions: “How much control do you have on guessing the randomly selected card correctly?” and “How much control do you have on the amount of money you win in each trial?” Both measured an illusory sense of control, because they asked about participants’ control over a chance-determined situation (Langer 1975). Participants answered these questions on a seven-point scale (1 = “very little control,” and 7 = “a great deal of control”). Then they completed the five remaining trials.

Immediately after the game, I measured participants’ construal level using the subset of the BIF suggested by Slepian, Masicampo, and Ambady (2015). Next, as a filler task, participants were provided a set of six pictures and asked if they recognized any of the background pictures in the set. Then, for the manipulation check, participants were asked to indicate, on a seven-point scale, whether they felt as though they were at a high altitude when they were viewing the background pictures. The study ended with a few demographic questions and a debriefing statement.

Results and Discussion

Participants who viewed the high-elevation pictures agreed that they felt as if they were at a high altitude more than those who viewed the low-elevation pictures ($M_{high} = 5.06, SD = 1.82$ vs. $M_{low} = 3.67, SD = 1.56; t(186) = 5.64, p < .001$). I ran repeated-measures ordered logistic regressions using the generalized estimating equations function of SPSS to analyze the data. I used participants’ betting choice across ten trials as the repeated measures and their response to the two practice trials as covariates. Because practice trials did not have any background pictures, participants’ responses to these trials could not significantly differ between the high-elevation (57.34%, SD = 23.65) and the low-elevation (56.91%, SD = 23.69; $t(186) = .12, p = .902$) conditions.

I then examined the relationship between participants’ perceived control and risk taking, and between their level of mental construal and risk taking across two different repeated-measures ordered logistic regressions. Results show that perceived control explains participants’ risk taking ($b = .19, Wald \chi^2(1) = 6.09, p = .014$), whereas construal level does not ($b = -.67, Wald \chi^2(1) = 2.52, p = .112$). Next, I examined whether participants’ perceived control over the game and/or their construal level mediated the effect of elevation on risk taking. I ran a repeated-measures ordered logistic regression including all three variables (i.e., elevation, perceived control, and construal level). Results show that perceived control significantly explains participants’ risk taking ($b = .16, Wald \chi^2(1) = 5.06, p = .025$), but construal level does not ($b = -.63, Wald \chi^2(1) = 2.45, p = .117$). Moreover, after controlling for perceived control and construal level, the effect of elevation on risk taking dropped to a marginal level ($b = .34, Wald \chi^2(1) = 3.24, p = .072$). The results show that perceived control partially mediates the effect of elevation on risk taking, but the evidence for the mediating role of construal level is inconclusive.

In summary, results from Study 2 show that an elevated perspective provides cues necessary to induce a sense of control. In addition, the results provide empirical support for the proposed underlying mechanism, showing that illusionary control mediates the effect of elevation on risk taking. However, I was not able to show that construal level mediates the effect of elevation on risk taking. After I controlled for perceived control, the effect of elevation on risk taking was marginally significant, so other psychological processes might have also contributed to the link between an elevated perspective and risk taking.

Seeing the Forest or Focusing on the Trees

Individuals can process information, including visual information, from different levels of perceptual construal (Trope and Liberman 2010). High-level processing of visual information helps people envision the big picture and global patterns (i.e., “see the forest”), whereas low-level processing facilitates attending to details (i.e., “see the trees”). For example, in the Gestalt Completion Task, individuals can better perceive the gestalt in a visual array when they use high-level visual processing rather than low-level mental construal (Trope and Liberman 2010). In line with these findings, I believe that the way people perceive and process a physically elevated perspective also affects whether such an outlook can provide the mental simulation necessary to retrieve a sense of control. Specifically,
I believe that a feeling of being “on top” requires seeing the big picture, and high-level processing would facilitate that. However, low-level processing shifts the attention away from the big picture toward the details and thus impedes the perception of being on top and the mental simulation of control. Accordingly, I expect low-level processing to attenuate the effect of an elevated viewpoint on risk taking. Study 3 examines this prediction.

**Study 3**

This study examines the moderating role of people’s level of processing on the effect of elevation on risk taking. In this study, I manipulated participants’ level of processing and their sense of elevation and then used a behavioral measure to gauge their risk-taking tendencies.

**Method**

I recruited 743 (281 men; Mage = 38.2 years, SD = 12.3) individuals from MTurk to participate in this study. The study had a 3 (processing level: high, neutral, and low) × 2 (elevation: high vs. low) design and randomly assigned participants to conditions. I used the categories versus examples task (adapted from Fujita et al. [2006]) to manipulate high- and low-level processing. In this task, participants received a list of 20 words (e.g., “dog”). In the high-level-processing condition, participants were asked to indicate the category each word exemplified (e.g., “Dog is an example of an animal”). In the low-level-processing condition, they had to generate an example for each given word (e.g., “Poodle is an example of a dog”). A similar procedure was used for the neutral condition, in which participants were provided the list of words and asked to write down the first word that came to their mind when they read each word. Next, for the manipulation check, I used the category-inclusiveness task (Isen and Daubman 1984; Slepian, Masicampo, and Ambady 2015). In this task, participants saw examples of four different categories of objects (i.e., clothing, furniture, vegetable, and vehicle) and, for each example, they had to indicate the degree to which the example belonged to the category using a ten-point scale (1 = “definitely does not belong,” and 10 = “definitely belongs”). Each category had three strong, three moderately strong, and three weak examples. I expect high-level processing to lead to higher ratings of the weak examples’ belongingness to the categories.

Next, I manipulated participants’ perceived elevation using the same procedure as Study 1b. Accordingly, participants observed five pictures of scenery taken from either high or low vertical positions and were asked to imagine themselves in the scenery and describe their feelings in a few sentences. Subsequently, participants completed a behavioral measure of risk taking in which they played a game of chance and could receive a monetary prize as bonus payment. The game was a simplified version of the game used in Study 2. Participants were told that the game was about guessing the suit of a randomly selected card, and they could win the prize if they guessed correctly. If the guess was correct, they would receive $0.10; if not, they would not receive any prize. The game had a total of four rounds, and participants could earn up to $0.40 as bonus payment (i.e., if they guessed the suit correctly in all four rounds). However, participants had to pay $0.10 to play the game. Thus, participants were provided an initial $0.10 and asked whether they wanted to play the game. Those who decided to play the game received their total winning prizes across the four rounds as bonus payment, and those who decided not to play the game received their initial $0.10 as bonus payment in their MTurk account. Thus, participants decided between a sure gain of $0.10 and a probabilistic gain of between $0.00 and $0.40. The expected value of playing the game is $0.10, given that in each round, participants had only a 25% chance (one in four) of correctly guessing the suit of the card. Choosing to play the game showed higher risk taking, because participants forwent a sure gain of $0.10 for a probabilistic gain of the same expected value. Accordingly, the risk-taking variable had two values (0 = choose not to play the game, and 1 = choose to play the game).

**Results and Discussion**

The manipulation check confirms that processing level was successfully manipulated, because participants’ ratings of the weak examples’ belongingness to the categories was higher in the high-level-processing condition (M = 3.81, SD = 1.66) than in the low-level-processing condition (M = 3.35, SD = 1.52; t(499) = 3.25, p = .001, Cohen’s d = .29). Yet ratings of the weak examples were not significantly different between the high-level-processing and the neutral conditions (M = 3.68, SD = 1.55; t(489) = .90, p = .37). Ratings of the weak examples in the low-level-processing condition were lower than in the neutral condition (t(500) = 2.41, p = .016, Cohen’s d = .21).

Next, I ran a generalized linear model with a binary logistic dependent variable, using the processing levels, elevation conditions, and their interaction as predictors. Results show a significant main effect of the elevation conditions (Wald χ²(1) = 4.58, p = .032) and an interaction between the elevation and the processing level (Wald χ²(2) = 5.90, p = .052). The main effect of processing level was not significant (Wald χ²(2) = .62, p = .73). Figure 1 shows the proportion of participants who decided to play the game across different conditions.

I relied on pairwise comparisons to interpret the interaction between elevation and processing level. Results show when participants used high-level processing, and when the level of processing was not manipulated (i.e., neutral condition), the effect of elevation on risk taking was replicated because more people in the high-elevation condition chose to play the game (Mhigh-level = 78.2%, Mneutral = 80.2%) than in the low-elevation condition (Mhigh-level = 65.0%, Mneutral = 68.6%, Wald χ²(1) = 5.30, p = .021; Mneutral = 68.6%, Wald χ²(1) = 4.33, p = .038). However, when participants used low-level processing, the proportion of people who chose to play the game was not significantly different between the high- (M = 69.9%) and low- (M = 74.0%) elevation conditions (Wald χ²(1) = .54, p = .46). The results confirmed our expectation, showing that seeing the
big picture for the effect of elevation on risk taking is necessary given that the high-level-processing and neutral conditions replicated the effect, but the low-level-processing condition attenuated it. Study 4 examines the effect of elevated viewpoint on risk taking in a real-world retail setting.

Study 4

Study 4 was a field experiment to examine the effect of elevated viewpoint on real-world consumption decisions. In this study, customers of a local convenience store in a large metropolitan area in the U.S. Midwest were exposed to high- or low-elevation pictures. Then, I examined their expenditure on lottery tickets.

Method

The data were collected for 34 consecutive days. This time was divided into four periods. In the first (seven days) and the fourth (ten days) periods, customers were exposed to a perspective of low elevation, and in the second (seven days) and third (ten days) periods, they were exposed to an elevated viewpoint. The order of showing high- and low-elevation pictures was switched to control for the possible effect of order. To purchase lottery tickets, customers had to approach the salesperson and ask for the ticket. Thus, elevation was manipulated through a scenery poster (5 feet long by 3 feet tall) showing a high or low vertical position hung from the ceiling behind the sales counter.

The lottery tickets sold at the store were a combination of nationwide and statewide jackpot lotteries and instant games. I designed a data sheet and trained the store employees to collect data. Each row of the data sheet represented one customer. The employee was asked to mark the customer’s gender and the total amount of purchased lottery tickets (in U.S. dollars). I expect exposure to high- versus low-elevation pictures to increase customers’ spending on lottery tickets.

Results and Discussion

Over the 34 days, 913 customers (647 men) purchased lottery tickets; on average, they spent $12.15 (SD = $20.99). Customers were almost equally distributed between the high- (n = 458) and low- (n = 455) elevation conditions (χ²(1) = .01, p = .92). Four customers who spent extremely high amounts (i.e., more than four standard deviations above the mean) on lottery tickets were removed from the analysis. In addition, the distribution of customers’ spending on lottery tickets was highly skewed to the right, so I used the natural logarithm of each individual’s spending for the analysis. Moreover, the logarithmic transformation removed the heteroskedasticity in the residuals of spending amounts.

Prior research has shown that customers’ expenditure on lottery tickets is correlated with gender and the amount of jackpot (Kearney 2005); thus, I used these two variables as covariates. The jackpot value for three lotteries (i.e., Mega Millions, Powerball, and Lotto) were displayed on an outward-facing sign close to the store’s entrance. The jackpot for these lotteries was highly correlated during the time of this study. Therefore, using all three as covariates was not possible, because this would create a multicollinearity issue. Therefore, I ran a bivariate correlation between the jackpots and the lottery spending and used the jackpot with the highest correlation with spending (r = .11, p = .001) as a covariate. I ran a linear regression analysis using the gender, jackpot prize, and elevation conditions as predictors, and log-transformed spending on lottery tickets as a dependent variable. Table 3 shows the coefficients of the covariates and the independent variable and their p-values.

Results show that all three variables significantly predict variations in customers’ expenditure on lottery tickets. Specifically, men spend more on lottery tickets than women, and a boost in the jackpot prize increases customers’ spending on lottery tickets. Moreover, the results confirm the proposed effect of elevated perspective on risk taking, showing that when the high-elevation poster was used in the store, customers spent more on lottery tickets than when the low-elevation poster was displayed (b = .20, t(905) = 2.99, p = .003).

In summary, the results of Study 4 show the effect of elevation on risk taking holds in real consumption settings. The subtle presence of a high-elevation poster in a retail setting

![Figure 1. The proportion of participants who took risk (i.e., chose to play the game) across processing level and elevation conditions.](image)

Table 3. Coefficients and p-Values of the Variables Affecting Customers’ Expenditure on Lottery Tickets.

<table>
<thead>
<tr>
<th>Variables</th>
<th>b</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation</td>
<td>.20</td>
<td>.003</td>
</tr>
<tr>
<td>Gender</td>
<td>-.28</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Jackpot prize (in million dollars)</td>
<td>.12</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
increases consumers’ risk taking, captured by higher spending on lottery tickets.

General Discussion

Summary of Findings

In this research, I study the impact of high- versus low-vertical-position scenery on consumer behavior by examining individuals’ perceived sense of control and their risk-taking tendencies. Six studies showed that people who saw high-elevation images took more risk in both lab (Studies 1a, 1b, and 1c) and real settings (Study 4) than those who saw low-elevation images. Moreover, in Study 2, I showed that exposure to high- versus low-elevation pictures induced an illusory sense of control that subsequently enhanced risk taking. Finally, Study 3 examined a boundary condition of the effect and showed that a low-level processing of visual stimuli attenuated the effect of elevated viewpoint on risk taking.

Elevated Viewpoint and Construal Level Theory

Prior research has suggested that experiencing high elevation could induce a high-level mental construal (Aggarwal and Min 2015; Slepian, Masicampo, and Ambady 2015); however, the reasoning for this effect varies. According to Slepian, Masicampo, and Ambady (2015), experiences of verticality give viewers a greater sense of coherence, which subsequently induces a high-level mental construal. Alternatively, Aggarwal and Min (2015) argued that over time, people frequently experience that “being physically higher usually leads to a wider physical view from one’s vantage point” (p. 122). Thus, this experience has created a link between the concept of height and high-level construal so that activating the concept of height can induce high-level construal. I examined the effect of elevation on mental construal in two studies (Studies 1a and 2), but the results were not supportive. I believe the main reason for these results is that the sceneries we used to manipulate high and low elevation depict physical distance in the form of either a horizontal or a vertical distance. Unlike Slepian, Masicampo, and Ambady (2015) and Aggarwal and Min’s (2015) manipulations of low verticality, most of the low-elevation sceneries used provide a wide physical view from one’s vantage point and can offer the viewer a sense of coherence. Thus, my findings do not refute the link between elevated viewpoint and construal level theory shown by previous research.

Research has investigated the effect of construal level on people’s reactions to probabilistic events, but the results are mixed. Sagristano, Trope, and Liberman (2002) showed that temporal distance increases the influence of payoff and decreases the influence of probability on preferences in a game of chance. Thus, if the expected value of outcomes is kept the same, people at a temporal distance would prefer a larger, less probable (i.e., riskier) outcome to a smaller, more probable (i.e., less risky) outcome. However, Wakslak and Trope (2009) showed that “participants led to adopt a high-level-construal mind-set made lower probability assessments than did those led to adopt a low-level-construal mind-set” (p. 52). Thus, in a game of chance, people would overestimate the probability of winning in a low-level construal compared with a high-level construal. This finding suggests that in a choice between two probabilistic options with the same expected value, people with a low-level construal should prefer the less probable (i.e., riskier) option more than people with a high-level construal. Similarly, Hong, Longoni, and Morwitz (2018) show that people believe a positive event (e.g., winning a lottery) is more likely to happen in a physically proximal versus distal condition and a negative event is more likely to happen in a physically distal versus proximal condition. In summary, the theoretical path between construal level and risk taking is not very clear. The empirical findings also failed to support the notion that construal-level theory explains the relationship between elevated viewpoints and risk taking. In Study 2, I measured both construal level and risk taking but found no significant relation between the two variables. In conclusion, I believe that construal-level theory does not explain the effect of elevated viewpoints on risk taking.

Although construal level does not explain the relationship between elevation and risk taking, it moderates this effect by changing the way people process visual information. Results of Study 3 show that high-level mental construal is necessary to see the big picture in a high-elevation scenery and to subsequently increase risk taking, whereas low-level construal impedes this process and eliminates the effect of elevation on risk taking.

Theoretical Contributions and Practical Implications

From a theoretical perspective, this research sheds light on cognitive and behavioral responses to visual stimuli, showing that the way people interpret high-elevation sceneries triggers optimistic thoughts of having control, which subsequently increases risk taking. The findings also contribute to prior research on antecedents of risk taking by introducing sceneries of elevated viewpoints as a situational antecedent of risk taking.

Previous research has recognized several factors that induce illusory control, such as personal involvement, familiarity, and foreknowledge of the desired outcome (Langer 1975; Thompson, Armstrong, and Thomas 1998). These factors often change the attributes of a task (e.g., playing with familiar cards, having choice, knowing about the outcomes), which consequently induces illusory control exclusively over that task. However, an elevated viewpoint induces illusory control through a different mechanism. Specifically, such an outlook activates the way the concept of control is grounded in human cognition. Thus, the felt control is not exclusive to a given task and can carry over to other tasks as long as the high-elevation outlook is present. This research contributes to the literature on perceived control by introducing sceneries of high elevation as contextual cues that induce a general sense of illusory control.
Theories of grounded cognition argue that cognition is grounded in perceptions shaped by bodily experiences or mental simulations (Barsalou 2008). This work provides further empirical support for theories of grounded cognition by showing that high-elevation sceneries provide the mental simulation necessary to retrieve a sense of control. In other words, this research shows that conceptual control is grounded in a physically elevated viewpoint.

Marketing practitioners have commonly used pictures across various marketing stimuli (e.g., print advertisements, billboards, product packaging, website design, retail interior design) to communicate with consumers and subsequently shape their thoughts and behaviors. This research has practical implications for consumption settings where risk plays an important role in consumer decisions. The findings suggest that, similar to Study 4, marketers can use pictures of high-elevation sceneries as decorative artifacts in consumption settings to increase sales of risky products. Yet one should avoid such sceneries when offering risk-alleviating products (e.g., insurance and extended warranties).

Companies constantly develop new products and services to gain a competitive advantage and boost their market share. Consumers often perceive new products to be risky, and a higher perceived risk reduces the diffusion rate and adoption level of new products (Ram and Sheth 1989; Rogers 1995; Sheth 1981). Thus, companies usually offer risk-alleviating incentives (e.g., free product trial, free samples, money-back guarantees) to encourage people to test and purchase new products. This article shows that high-elevation pictures increase the likelihood of purchasing new products. Thus, marketers could use such images in advertisements, packaging, and websites of new products as a relatively inexpensive method to boost the effectiveness of other risk-alleviating incentives and elevate the likelihood of new-product trials.

Today, many products are introduced, evaluated, and sold in online settings. The availability of internet-enabled devices such as smartphones and tablets has facilitated the shift from physical consumption settings to online settings. Moreover, virtual reality and augmented reality accessories provide a more realistic experience for consumers, and these technologies can shape the future of online retailing. Sceneries of high elevation can be easily combined with the design of virtual settings, and practitioners offering risky products can benefit from incorporating these sceneries into their online settings.

Directions for Future Research

I show that perceived control explains the effect of elevated viewpoint on risk taking. However, I do not argue that perceived control is the only mechanism. Other factors can also play a role in the effect of elevation on risk taking. One could argue that an elevated viewpoint induces arousal, which subsequently increases the desire to take risks. Similarly, high-elevation pictures could lead to a positive affect, given that people have a general positive attitude toward height and being on top, because they associate “up” and an upward direction with positive figures (Judge and Cable 2004; Lakoff and Johnson 1980; Meier and Robinson 2004; Schubert 2005). In my studies, I tried to control for the possible effect of affect by selecting visually appealing images (i.e., presumably strong in inducing positive affect) in both high- and low-elevation conditions. However, future research is encouraged to investigate the role of arousal, positive affect, and other potential mechanisms for the effect of elevation on risk taking.

In my studies, I measured risk taking either while manipulating elevation or with a short delay. One wonders how quickly the effect of elevation would fade over time. In addition, examining whether the effect holds for people with constant exposure to sceneries of high elevation is worthwhile (e.g., those who live or work on top floors of a high-rise building). Moreover, individuals’ dispositional characteristics could attenuate or intensify the effect of elevation on risk taking. For example, fear of heights could alleviate or possibly reverse the effect in extreme cases, because previous research has shown fearful people are more likely to select risk-averse choices (Lerner and Keltner 2001). Future research should examine dispositional characteristics and other potential moderators of the effect of elevation on risk taking.

Acknowledgments

The author gratefully acknowledges comments and helpful suggestions from Himanshu Mishra and William L. Moore on earlier drafts of this article. In addition, the author thanks the JMR review team for their developmental feedback and suggestions.

Associate Editor

Akshay Rao served as associate editor for this article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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