Sunny Days, Risky Ways: Exposure to Sunlight Increases Risk Taking

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Across three lab and field studies, we find that manipulated or measured sunlight increases (a) the level of risk taking on the Balloon Analog Risk Task, (2) the probability of illegal parking in a public lot, and (3) the likelihood of attempts to steal bases in Major League Baseball games.

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On Sunshine, Snow, and Sex: Environmental Effects in Consumer Preference

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Paper #1: Sunny Days, Risky Ways: Exposure to Sunlight Increases Risk Taking
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Paper #2: Warm it Up with Love: The Effect of Physical Coldness on Liking of Romance Movies
Jiewen Hong, HKUST, Hong Kong
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Paper #3: More than Just “Sex Sells”: The Economics of Attraction Motives in Complex Social Consumption Contexts
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Jennifer Vendemia, University of South Carolina, USA

Paper #4: The Influence of Environmental Sex Ratio on Financial Earnings
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Stephanie Cantu, University of Minnesota, USA

SESSION OVERVIEW
A substantial body of consumer research has demonstrated the power of one’s immediate environment on his or her judgments and decisions. Environmental cues have been shown to affect awareness of available choices, shape decision goals, and even alter how consumers process information. However, research on environmental effects has only recently begun to consider elements of the natural environment, such as sunlight and temperature, as sources of influence in decision processes. These variables, although often overlooked, are omnipresent in the lives of consumers and thus it is important to understand what effects they may have.

In this proposed session, we will be looking at cutting-edge research about environmental effects on consumer behavior. The first two papers focus on environmental factors related to weather, examining how light and temperature influence financial decisions and consumer preferences. The final two papers focus on social factors in the environment, examining how the ratio of men to women in the environment influences consumer behavior. Three of the papers combine both experimental studies and archival data, while the fourth paper uses experimental fMRI techniques to provide deeper insights into environmental effects.

In the first paper, Reinholtz, Lee, and Pham examine whether exposure to sunlight will increase an individual’s tendency to take risks. The authors conduct a laboratory study in which they manipulate a participant’s direct exposure to sunlight. Participants in the sunlight condition show an increased preference for risk. Further, the authors find evidence for their hypothesis in real world behavior, looking at both individuals parking cars illegally and baseball players stealing bases.

In the next paper, Hong and Sun examine another weather related environmental effect: the influence of physical temperature on a consumer’s movie selection. The authors find that cold temperatures lead consumers to show a greater preference for romance movies. The authors further show that this result is driven by an association of romance movies with psychological warmth. Finally, the authors show evidence of this effect in the real world, using data from an online movie rental business and local weather data.

The third paper moves away from cold, but continues with the theme of romance. Craig, Wood, and Vendemia look at how sex ratios in the immediate environment affect an individual’s desire to signal status. The authors show that the presence of same-sex individuals (and thus a competitive environmental sex ratio) increase preference for status signaling compared to situations in which there are only members of the opposite sex. The authors supplement this work with a neuroimaging study that shows increased activation in a region of the brain associated with reward.

In the final paper, Durante, Griskevicius, Simpson, and Cantu examine the effect of environmental sex ratio (the ratio of men to women in a given location) on career choices and financial goals. The authors show that metropolitan areas with a scarcity of marriageable men tend to produce women who are more oriented towards financial success. Further, the authors show that experimentally manipulating information on local sex ratio can influence both men’s and women’s desires to invest in career rather than starting a family.

The papers in this session show how various aspects of the environment influence consumer’s behavior in surprising ways. The papers build connections by not only examining diverse aspects of the environment, but also by using a diverse set of methodologies inside and outside the laboratory, including fMRI. This session should appeal to a wide range of audiences, including those interested in embodied cognition, conspicuous consumption, risk, neuroimaging, and evolutionary approaches.

Sunny Days, Risky Ways: Exposure to Sunlight Increases Risk Taking

EXTENDED ABSTRACT
The sun influences human life in many obvious ways. In this paper, we investigate a less obvious way in which the sun may impact human experience. Specifically, we look at the link between sunlight exposure and risk taking. Some evidence hints that exposure to sunlight may increase an individual’s tendency to take risks. For example, stocks are more likely to experience positive returns on days in which there is no cloud cover over the market’s host city (Saunders 1993; Hirshleifer and Shumway 2003). We extend this research by looking at other operationalizations of risk taking behavior. We use both lab and field studies to support the hypothesis that exposure to sunlight increases an individual’s tendency to take risks.

In our first study, we employ a sunlight manipulation in the laboratory. We conducted the study on a sunny day and when participants entered the lab, we either had the curtains drawn (so there was no sun exposure) or the curtains up (so the sun could shine into the lab). After completing a filler task to allow for acclimation to the room conditions, participants completed the Balloon Analogue Risk Task (Lejuez et al. 2002). The BART is a standard measure of risk taking in which participants inflate a virtual balloon to the greatest level possible before it explodes. The more the participants inflate the balloon, the more they are paid for the task. However, participants earn no money if the balloon explodes (probability of explosion is an increasing function of the total number of pumps). Using the BART, we found that participants inflated the balloons to a greater level in the sunlight condition (with the shades up). In other instances, participants inflated the balloons to a lesser extent when the curtains were drawn. The difference in inflation was statistically significant (p < 0.05), indicating that sunlight increased risk taking behavior.
words, we found that sunlight exposure increased the participant’s preference for risk. We also found that prior exposure to sunlight (how long participants had been in the sun that day) was also positively correlated with risk-seeking.

In our second study, we collected data at a parking lot in Singapore. Twice-a-day for two weeks, we recorded information on every car parked in the lot. Crucially, because of Singapore’s parking payment system, we were able to record the time at which the driver parked the car, whether the car’s legal parking period had expired, and the extent to which the car was or was not in violation. We supplemented this primary data with climate measurements from a local weather station. Using logistic regression, we found that the level of solar radiation (sunlight) at the time of parking was a positive predictor of whether the car was in violation. In other words, the sunnier it was outside when an individual parked, the more likely they were to leave their car in violation. Further, we found that higher levels of sunlight at the time of parking were correlated with more severe parking violations.

In our third study, we analyzed 40 years of historical data from Major League Baseball games. In this data, we look at attempted stolen bases as the primary measure of risk taking. We find that stolen base attempts were more likely during day games than during night games. Importantly, we find this effect attenuates for games played in indoor stadiums. Further, we find that baserunners tend to be more successful at stealing bases during night games, suggesting that the increase attempt rate for day games is not motivated by a greater likelihood of success. As a final test of our hypothesis, we merged 15 years of weather data with the baseball data set. For games played in outdoor stadiums, we find that higher levels of solar radiation are positively correlated with more stolen base attempts. Interestingly, we also find a positive effect of day-time solar-radiation levels on risk taking in night games. One possible explanation for this finding is that cumulative exposure to sunlight, and not just current exposure, can lead to increased risk taking. This would be consistent with our findings in Studies 1 and 2.

In sum, across three different operationalizations, we find that exposure to sunlight is linked to increased levels of risk seeking. We find positive effects on risk taking for both current level of sun exposure and cumulative level of sun exposure. Possible mechanisms for this effect include an “affective” path and a more direct path. Although the affective path is plausible, research is mixed on the link between positive affect and risk taking. The direct path is intriguing because it implicates a more innate biological basis. It is possible that the tendency to take greater risks while the sun is shining evolved as an adaptive behavior. Current work is focusing on identifying evidence in support of one of these paths versus the other.

REFERENCES

Warm It Up With Love: The Effect of Physical Coldness on Liking of Romance Movies

EXTENDED ABSTRACT
Are romance movies more desirable when people are cold? Building on research on embodied cognition (Barsalou 2008; Niedenthal et al. 2005), we hypothesize that physical coldness (vs. warmth) activates a desire for psychological warmth, which in turn leads to increased liking for romance movies. We tested our hypothesis in three laboratory experiments and one analysis of online movie rentals.

Study 1 tests our basic hypothesis that physical coldness leads to increased liking for romance movies. We manipulated physical coldness by giving participants a warm or a cold drink. Participants were first told that they would be taking part in a drink evaluation study. Those in the warm condition were given a cup of hot tea and those in the cold condition were given a cup of iced tea. Participants were told to finish the drink slowly while completing another study on movie preference, which was our main dependent measure. For the movie preference task, we selected four genres (romance, action, comedy, and thriller) and three movies from each genre based on the categorization used by the Internet Movie Database (IMDb.com). Participants were given the information of the movies while drinking the tea. For each movie, participants were first presented with the title, a synopsis, a fictitious viewer rating (ranging from 8.5 to 8.8 out of 10), and the genre of the movie. They were then asked to indicate how much they would like to watch the movie and how good they think the movie would be. The order of the movies presented was randomized. Thus, a 2 (physical temperature: cold vs. warm) × 4 (genre: romance vs. action vs. comedy vs. thriller) × 3 (replicate within genre) mixed design was employed, with physical temperature as a between-subject factor, and genre and replicate as within-subject factors. Consistent with our predictions, we found that physical coldness led to increased liking for romance movies, but not for other genres.

Study 2 was designed to examine the mechanism underlying the effect observed in study 1 that physical coldness increases people’s liking of romance movies. We argued that the reason that physical coldness increases liking for romance movies is that physical coldness activates a desire for psychological warmth and romance movies are associated with psychological warmth. To provide evidence for this conjecture, we measured the extent to which people associated romance movies with psychological warmth. Although people in general associate romance movies with psychological warmth, there should be individual differences in terms of the extent of this association. We expected that people’s perceived association between romance movies and psychological warmth would moderate the effect. Specifically, for participants who associate romance movies with psychological warmth, physical coldness would lead to increased liking for romance movies; conversely, for those who do not associate romance movies with psychological warmth, the effect of physical coldness on liking of romance movies should be attenuated. The results supported our predictions.

Study 3 was designed to examine people’s lay belief about the relationship between physical warmth and psychological warmth. That is, whether they believe psychological warmth can compensate for physical coldness. To examine this issue, we manipulated the salience of people’s physical temperature by varying the order of the movie preference task and the measure of physical coldness. Thus, a 2 (physical temperature: cold vs. warm) × 2 (salience of physical temperature: salient vs. nonsalient) × 3 (replicate) mixed design was used. We found that when participants’ physical temperature was