Special Session Summary  It Could Happen to Me: Risk Estimates and the Positivity/Negativity Bias

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SESSION OVERVIEW

Much of consumer behavior involves implicit or explicit risk estimates. For example, the decision to drive instead of fly may involve estimates of relative safety, and getting a mammogram may involve estimates about the probability of developing breast cancer. In an effort to change consumers’ risk estimates and behavior marketers often provide consumers with base-rate information. For example, sellers of credit card reports often cite the number of victims of credit card fraud and sellers of disability insurance cite the number of people who are temporarily disabled during their lives.

At the same time, research suggests that consumers are often poor estimators of risk (Slovic, Fischhoff and Lichtenstein 1980) and generally overestimate the probability of good things and underestimate the probability of bad things happening to them (Weinstein 1980). Other research has shown that consumers often fail to incorporate base-rate information in making estimates (Tversky and Kahneman 1998) and that framing can lead to dramatic differences in how base-rates are incorporated into preferences (Tversky and Kahneman 1981). This special session addressed these issues by 1) examining factors that lead consumers to under or overestimate risk for themselves and others in the population, 2) examining how actual frequencies are incorporated in new estimates, 3) examining the link between estimates, preferences and behavior.

In the first paper of the session, Ying-Ching (Michelle) Lin presented her work with Priya Raghubir and Chien-Huang Lin that seeks to explain the “self-positivity” (self-negativity) bias in risk estimates that leads to the under- (over-) estimation of risk relative to others. By looking at risk estimates for oneself versus others, for positive versus negative, and for controllable versus uncontrollable events, the authors are able to demonstrate that self-positivity is a strategic device to maintain or enhance self-esteem, rather than a self-serving bias.

In the second paper, Punam Keller presented work with Isaac Lipkus that studies how providing absolute versus relative risk information affects women’s estimates for developing breast cancer as well as their intentions to undergo early-detection screening (mammograms). The authors find that women who are provided only data on their own risk of breast cancer give more accurate self-estimates than those who are provided with data for themselves and women who are at lowest risk. Contrary to many theories of health behavior, lowering risk estimates does not lower intentions to get mammograms.

In the third paper, Nicholas Lurie and Michael Ranney presented a series of studies that show that asking consumers to make estimates before indicating preferences can lead to preferences that are in some cases closer to, and other cases farther away from, preferences based on actual data, or preferences elicited before estimates. Importantly, making estimates can limit preference change in the face of actual data. Feedback on the mortality rates of one disease can improve estimates for other diseases and bring consumers closer to what seem to be their true preferences.

After the three papers were presented, Geeta Menon moderated a discussion between the participants and audience that explored connections between the papers, the accuracy of risk estimates, ways to improve estimates and the link between estimates and behavior.

“Feeling Better or Staying Miserable: Why Self-Positivity?”

Chien-Huang Lin, National Central University, Taiwan
Ying-Ching Lin, National Chi Nan University, Taiwan
Priya Raghubir, University of California at Berkeley

Consumers’ decisions to purchase products or services are frequently a function of the perceived risks of the product or service’s performance. For example, the likelihood of purchasing a specific brand of car, appliance, software or service is a function of the perceived risk of the product or service being able to perform satisfactorily and not break down. In other domains, purchase probabilities may be contingent on perceptions of the likelihood of an event occurring (e.g., purchasing a lottery ticket, a product with a sweepstake promotion etc.). In yet other contexts, consumers’ health-related behaviors are contingent on their perceptions of the risk of contracting a specific disease, in absolute terms or relative to the average person. However, a fairly robust finding is that individuals’ believe that they are less at risk than an “average” other person for a negative event, (i.e., the “self-positivity” bias; Perloff and Fetzer 1986), and more likely to experience a positive one (i.e., show “unrealistic optimism,” Weinstein 1980). This systematic bias can lead to non-optimal purchases, decisions, and behaviors. Consumer researchers are increasingly examining this issue in contexts ranging from AIDS (Raghubir and Menon 1998) and Hepatitis C (Menon, Block and Ramanathan 2002) to depression (Keller, Lipkus, and Rimer 2002) and breast cancer (Lu and Kahn 1999), and have implicated reducing self-positivity as a route to encourage preventative behavior. Accordingly, an important consumer welfare goal is to reduce the self-positivity bias.

This paper examines the underlying reasons behind self-positivity to better understand how to reduce and eliminate the bias. We propose that self-positivity may be due to three different reasons: maintaining or enhancing self-esteem, reducing anxiety associated with the uncertainty about future life outcomes, or an overall desire to feel happy using a denial mechanism. We suggest that examining the moderating effect of perceived controllability of an event, the use of base-rates in self-estimates, and the manner in which optimists and pessimists estimate likelihood can assist in disentangling which of these three routes lead to self-positivity. These variables can also explain inconsistent effects regarding the presence of self-positivity across a range of events, the direction and presence of self-positivity for different populations (e.g., depressives), and the differential resilience of the bias to base-rate information.

If the underlying mechanism for self-positivity is to feel happy, then beliefs should always reflect optimism, irrespective of the perceived controllability of the behavior. If it is an anxiety-reduction mechanism, then self-positivity should be greater when events are more uncertain or less controllable. However, if self-positivity is due to self-esteem maintenance, then it should be lower for controllable events. This is because people can attribute a lower risk of a negative event to their own actions, so the strategic belief that they are less at risk than others should improve their self-esteem.

Examining the manner in which base-rate information is used to update self-estimates also illuminates the reason behind self-positivity. If it is due to uncertainty reduction, then base-rates should always be used. If self-positivity is due to a wish to feel happy, then pessimists should use base-rates to update their self-
estimates, while optimists should not update. However, if it is due to self-esteem maintenance, optimists and pessimists may react differently to base-rate information. Optimists, who have high self-esteem and demonstrate self-positivity, should be less likely to update their self-estimates overall. When they do, they should be more likely to update their estimates for more (versus less) controllable events. However, pessimists, with a pattern of self-negativity and low self-esteem, should update their estimates for events irrespective of the perceived controllability of the event.

We argue that self-judgments are constructed so as to maintain self-esteem. To test this, we examine the attenuating effects of: (i) providing reference points to act as “base-rates” and (ii) decreasing the perceived event’s controllability on the self-positivity bias. Three studies programmatically examine this idea.

Study 1 shows the attenuating effect of controllability perceptions and the presence of base-rate information in the domain of the disease: cancer. Although there are a number of ways an individual can reduce the risk of cancer, the relationship of the disease to individual behaviors, is not entirely within individual control—many individuals who do not engage in “high-risk” activity, are still diagnosed with cancer. We show that increasing perceptions of the lack of control over contracting cancer, along with base-rate information about the incidence of cancer eliminates the self-positivity bias.

Studies 2 and 3 extend the investigation beyond the domain of cancer. We argue that self-positivity will be exacerbated (i) for conditions where it is easier to, and (ii) for individuals who would like to, maintain or enhance self-esteem. Study 2 replicates the results of Study 1, using different manipulations: measuring controlability of different behaviors rather than manipulating it, and extending the domain to include positive events. Results show that when events are perceived to be within an individual’s control, they perceive themselves as less at risk for a negative event and more likely to enjoy a positive event. When events are perceived to be outside of the individual’s control, base-rate information attenuates the self-positivity effect. However, when events are perceived to be controllable, then the presence of base-rates exacerbates the self-positivity bias: self-estimates contrast away from the provided base-rate.

Study 3 examines why self-estimates reflect a contrast away from base-rate information for controllable events. It shows that the above effects are contingent on individuals’ level of optimism: optimists are more likely to update self-estimates when events are less controllable. Pessimists demonstrate self-negativity irrespective of the perceived controllability of the event. They assimilate base-rate information into self-estimates irrespective of the perceived controllability of the event. However, this assimilation is not always adequate, leading to a reduction, but not an elimination of a self-negativity effect. The combination of a reduction of self-negativity for pessimists and no change in self-positivity for optimists for controllable behaviors, leads in aggregate to self-estimates showing a contrast away from base-rates, as found in Study 2.

“Risk Information: Truth and Consequences”
Panam Anand Keller, Dartmouth College
Isaac M. Lipkus, Duke University Medical Center

In general, people tend to think that bad things happen to other people and not to themselves. This has been referred to as the optimistic bias (Weinstein 1980). However, the situation seems to be quite different for breast cancer. Women consistently and quite dramatically overestimate their chances of getting breast cancer (Lerman et al. 1995). It is possible that this tendency to overestimate risk has led to excessive worries, may deter breast cancer screening or, conversely, lead to excessive screening (Epstein et al. 1997; McCaul et al. 1996).

So how are medical professionals to communicate breast cancer risk information in a way that increases the accuracy of risk perceptions? Giving women relative risk information (i.e., self vs. others), in addition to their absolute risk, might help them understand their own risks. Indeed, adding a reference point to help people judge whether a risk is considered low, average, or high, has been shown to affect risk perceptions (Smith, Desvouges and Payne 1995).

The literature is mixed on whether people will rely on objective or social comparison information when both are available. According to Festinger’s (1954) classic article on social comparison processes, people prefer to use objective information to evaluate their opinions and abilities and only rely on others when objective information is not available. By contrast, Klein (1997) indicates that social comparison information is more important than objective information. Across three studies, comparative risk information had more impact on self-evaluation and emotional judgments than objective risk information.

How should the addition of relative risk to absolute risk information affect women’s perceived risk of breast cancer? Given that most women overestimate their risk of breast cancer, they should lower their risk estimates if they are only given their absolute risk of breast cancer. However, assuming that people are sensitive to relative risk information, in addition to absolute risk information, having women compare their risk with the risk of others should affect both perceived risk and accuracy. Specifically, if women are constrained to compare their risk with a woman at lowest risk, they should be less inclined to lower their perceived risk, leading to diminished accuracy. This format, as other studies have suggested (Klein and Kunda 1993), curtails women’s tendencies to sustain self-serving social comparisons.

The primary goals of our study were to (a) examine the impact of absolute and relative risk information not only on perceived risk and mammogram screening intentions, but also on emotional responses to getting breast cancer, and (b) assess participants’ evaluations of risk information and attributional accounts for under- or overestimation of risk.

We tested our hypotheses in a sample of women aged 40 and older. In a pre- to post-test design, 121 women were given their 10-year risk of getting breast cancer with or without being given comparative data for women their age and race at lowest risk. Participants were more accurate when they received their own risk without comparison data for women at lowest risk. Women who received only their own risk estimate reported being at lower risk than other women. The majority of women who overestimated their risk after receiving the objective risk information did so because they did not understand the meaning of the numbers and/or because they felt the objective risk information failed to incorporate important factors such as level of exercise. Overall women reported that obtaining their 10-year risk estimate either did not affect or increase their intentions to get a mammogram. These results suggest that giving women their individual risk of getting breast cancer improves accuracy while also enhancing feelings that they are at lower risk than other women. Counter to many theories of health behavior, reducing women’s perceived risk of breast cancer did not lower their intentions to get mammograms. Implications for the communication of breast cancer risk are discussed.
make estimates and then receive feedback for a different pair of diseases, improves estimates and moderates the biasing effects of making estimates found in the first study. These results have important public policy implications, since risk estimates often drive resource allocations (e.g., charitable contributions to different organizations). Although consumers seem willing to dramatically change their preferences in the face of actual data, they are still rather unwilling to discard their initial (pre-feedback) preferences. Information seeding is one way to improve estimates and enhance preference useful maleability. Examining other ways to improve consumers’ numerical reasoning represents an important step for future research.

REFERENCES


Menon, Geeta, Lauren G. Block and Suresh Ramanathan (2002), “We’re at as Much Risk as We’re Led to Believe: Effects of Message Cues on Judgments of Health Risk,” Journal of Consumer Research, 28 (March), 533-549.


