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## **Dynamic Inconsistencies in Gambling: the Role of Feelings**

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Anecdotal evidence suggests that in a gambling environment people might violate “pre-commitments,” and subsequently bet more than they had initially planned. In this paper, we investigate this phenomenon in a scenario where i) participants have full information about the gambles prior to the planning phase ii) the time period between the planning and actual phases of the gambles is very short, iii) participants believed that their plans will be executed, iv) and participants are reminded of their planned bets right before they make their actual bets. In a series of experiments, we assess the presence, shape and potential processes underlying dynamic inconsistencies in a sequence of fair gambles.

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## SYMPOSIA SUMMARY

# Consuming Uncertainty: Feelings, Expectations, and Wishful Thinking in Consumer Choice and Experience

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### SESSION OVERVIEW

Managers and consumers usually think of uncertainty as a negative—to-be-avoided—aspect of a given purchasing or consumption experience. The four papers presented in this symposium challenge this intuition. *Andrade and Iyer* show that in a scenario where they must “pre-commit” to a sequence of 2 gambles, consumers choose to lower their bets after anticipated losses (vs. gains). When losses are eventually experienced, they bet more than they had initially planned. Dynamic inconsistencies are not observed after gains. The authors discuss potential underlying processes and the role of feelings. *Nelson, Galak, and Vosgerau* investigate the potential (mis)matching between forecasting and experiencing excitement. In prospect, people seem to put a substantial premium on the excitement of outcome uncertainty in televised sporting event, but it remains unclear if this actually improves the experience. The authors show that in many cases, uncertainty operates much different than consumers predict. Although people enjoy a live game more than a taped game, the benefit is eliminated if people also place a bet in the game. Moreover, people enjoy the uncertainty that comes with wagering on games, despite the added anxiety it brings. Furthermore, though people believe that knowing the outcome in advance will ruin the experience, it actually has no negative effect, and knowing the game play ahead of time actually improves the experience of watching the game.

*Mazar and Ariely* expand the relationship between uncertainty and excitement by investigating probabilistic discounts. When will a probabilistic discount (i.e., gambling-type) be preferred over a fixed discount? Why would it be preferred? The authors show that probabilistic discounts are more appealing than fixed discounts of the same expected value. Moreover, this preference results from a desire to “avoid the pain of paying” rather than to “enjoy the excitement of the gambling”. Finally, *Goldsmith & Amir* also show that there are motivational advantages to uncertain cues. They find that promotions offering uncertain rewards are more persuasive than those which offer certain rewards with a higher expected value. For example, lotteries between smaller and larger rewards can be as attractive as larger certain rewards. Consumers tend to show intuitive wishful thinking, a tendency that may be mitigated through elaboration and a-priori attitudes.

In short, consumers occasionally seek uncertainty, even when it seems strictly suboptimal. Although they may derive direct utility from it (*Goldsmith, Amir; Mazar & Ariely*) they might also overestimate its benefits (*Nelson, Galak, & Vosgerau*). On other occasions consumers will to endure its costs (*Andrade and Iyer*) in pursuit of a distal benefit. Regardless, whether in the context of gambling, product promotions, or televised sports, it seems clear that consumers will frequently incorporate the anticipated levels of uncertainty into their decision making process.

We are pleased to have Tom Meyvis as our discussant, whose expertise across the entire field should help to integrate the four papers and place them in the context of the ongoing theory, research, and practice of consumer research.

### EXTENDED ABSTRACTS

#### “Dynamic Inconsistencies in Gambling: The Role of Feelings”

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Anecdotal evidence suggests that in a gambling environment people might violate pre-commitments, and bet more than they had initially planned. In this paper, we investigate this phenomenon in a scenario where (i) participants have full information about the characteristics of the gamble prior to a planning phase (ii) the time period between the planning and actual phases of the gambles is very short (around 1 minute), (iii) and participants are reminded of the planned bet right before the actual bet. The research paradigm follows a two-stage process. First, during the “pre-commitment” phase, participants are asked to pre-commit to a series of 2 fair gambles. In gamble 2 they are given the opportunity to bet contingent on winning/losing the previous bet. Then, during the *actual phase* of the gambles participants are unexpectedly allowed to confirm or revise the “pre-committed” bets. In order to increase external validity, participants are authorized to use their own participation fee in the experiments and bet any amount within a pre-determined budget (i.e., \$0 to \$5 per gamble).

The results throughout all three experiments show that, on average, participants plan to bet less after an anticipated loss and the same amount after an anticipated gain. Also, asymmetric dynamic inconsistencies emerge during the actual phase of the gamble, as participants bet on average more than initially planned after experiencing a loss and the same amount after experiencing a gain.

Experiments 2 and 3 address the mechanisms leading to the systematic deviation after losses. Following the hot-cold empathy gap, we hypothesize that people underestimate their negative feelings and its impact on subsequent behavior. It has been shown that people eat more, shop more, take more drugs, and report riskier sexual behaviors than they had initially planned in a cold state. Whether deprived from food, information, drugs, sex, or money individuals will react, and usually exaggerate, in an attempt to reestablish the prior state. Translated into gambling contexts, it means that during the pre-commitment phase (cold state) participants underestimate the impact of the feelings during actual phase (hot state). Precisely, negative emotions generated by losses lead people to “over bet” (i.e., positively deviate from the initial plan) in a visceral attempt to restore a current affective state in the prospect of winning.

In experiment 2, therefore, an affective correction manipulation is used, where a subset of participants is asked to avoid using their post-outcome feelings generated in gamble 1 during the subsequent bet. Consistent with the hot-cold empathy gap, the asymmetric dynamic inconsistencies disappear when people are requested to correct for the potential impact of post-outcome feelings of gamble 1 on bet decisions in gamble 2.

In experiment 3, we assess whether participants underestimate their negative feelings after a loss. Following the pre-commitment phase but before the actual phase, participants are asked to forecast their feelings after a potential gain and after potential loss in gamble 1. Once the outcome 1 is realized participants are asked to report

current feelings. The results show that participants on average underestimate how bad they will feel after a loss in gamble 1 and are on average accurate about their positive feelings after a gain. Moreover, most participants who deviate from the plan after a loss are also the ones more likely to underestimate their negative feelings after the loss is experienced. No such contingency is observed after a gain.

**“The Unexpected Enjoyment of Expected Events: The Suboptimal Consumption of Televised Sports”**

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*Joachim Vosgerau, Carnegie Mellon University*

Sometimes uncertain events are more exciting than their certain alternatives. Consistent with this excitement-seeking drive, when watching sporting events people put a substantial premium on the feeling of uncertainty by experiencing them live (as opposed to taped) or by placing wagers on the outcomes (Vosgerau, Wertenbroch, & Carmon, 2006). Does all this extra uncertainty and anxiety actually improve the experience? Recent work suggests that it might not, instead suggesting that the added uncertainty may come at a cost to the enjoyment of the experience (Mandel and Nowlis, 2007). Four studies investigate the influence of prediction and outcome knowledge on the experience of watching sports programming. We derive two types of uncertainty, process and outcome, in order to manipulate and identify which factors make televised sports most enjoyable to watch. Inclusive in this analysis is a consideration of sports betting, which had been previously shown to have a negative influence on enjoyment, but which in these studies we show can have a highly variable influence.

In our first study, American participants watched the final few minutes of closely contested women’s European handball match. Some participants were told that the game was being streamed live from Germany, whereas the remainder were told that it was a previously taped game. Additionally, approximately half of the participants in each group were given an opportunity to predict the winner of the game (after reading some basic information about the teams). All participants then watched the game and indicated how much they enjoyed it. As people have forecasted in previous research (Vosgerau, Wertenbroch, & Carmon, 2006) participants enjoyed the game more when it was ‘live.’ However, this difference only held for people who did not bet on the game; the difference was eliminated for people who had an additional stake in the outcome. Though some uncertainty improves the consumption of televised sports, when coupled with the arousal of a bet on the outcome, uncertainty has no additional impact.

Study 2 compared three different viewing conditions (this time of the overtime period of a professional basketball game): A control condition, a betting condition, and a condition in which the participants knew the final score beforehand. All of these Experiencers watched the entire 15-minute clip and reported their enjoyment. We were particularly interested to know if people were well calibrated to the influences of these factors, so we asked Forecasters to read a description of the each condition the Experiencers faced and to predict their enjoyment. Forecasters accurately predicted that people would enjoy the game more when they bet on the outcome, but they incorrectly predicted that people would enjoy the game less when they knew the outcome. Forecasters universally thought that eliminating outcome uncertainty would ruin the viewing experience, but it had no impact whatsoever.

But is all uncertainty the same? When people think of uncertainty in sports they instantly think of the outcome, but fail to consider the uncertainties of each event leading up to the game outcome. It may be the case that, in fact, the cumulative impact of

those smaller uncertainties may outweigh the outcome uncertainty when determining the overall enjoyment. When this process uncertainty is reduced or eliminated, the anxiety associated with it is also removed leaving people to experience only the excitement associate with the experience. Study 3 sought to show that process uncertainty, rather than outcome uncertain was the driver of enjoyment. When watching the same overtime period as in Study 2, half of the participants were told which team would win the game (outcome certain) and half were not (outcome uncertain). Furthermore, for about half the participants the audio channel was offset so that the announcers reported on the game play 3 seconds ahead of time (process certain) versus 3 seconds delayed (process uncertain). In accordance with our hypotheses, Forecasters thought that they would enjoy watching the game less when either outcome or process was certain. But, in fact, Experiencers enjoyed watching the game equally whether the outcome was certain or not. Viewers enjoyed the game more when the process was certain than when it was uncertain. So, while viewers think uncertainty generally enhances enjoyment, process uncertainty actually dampens it.

Is it always the case that process uncertainty is aversive? Study 4 addressed this question by having participants watch the same overtime period as in Studies 2 and 3. Approximately half of the participants bet on the outcome of the game and the other half did not. Additionally, we again manipulated process uncertainty by offsetting the audio channel either 3 seconds ahead of time (process certain) or 3 seconds delayed (process uncertain). We reasoned that bettors were actually deriving hedonic value from the feeling of anxiety, and so their enjoyment should go down with increased certainty. For non-bettors we replicated our finding from study 3: process uncertainty is aversive. However, for bettors, process certainty was aversive. Furthermore, by collecting continuous measures of excitement throughout the entire viewing experience we were able to determine that this variability was only present in the second half of the experience, when the outcome was looming. Though betting on sports can make them more enjoyable, that enjoyment is predicated on the uncertainty of the entire event.

**“Probabilistic Discounts: When Retailing and Las Vegas Meet”**

*Nina Mazar, Massachusetts Institute of Technology*

*Dan Ariely, Massachusetts Institute of Technology*

People love to gamble. Recent numbers provided by Christiansen Capital Advisors CCA and the American Gaming Association (<http://www.americangaming.org>) support the notion of gambling as a mammoth phenomenon in our society: Consumer spending on traditional gambling including commercial casinos, racetracks, card rooms, and lotteries generated a \$85 billion input to the U.S. economy in 2005 and Internet gambling has been estimated to reach \$25 billion in global revenues by 2010. Given these observations we were wondering whether we can design a new type of discount that combines retailing with gambling such that it becomes more attractive for both consumers and retailers.

Imagine that you are at the checkout of your local video store and they offer you one of two discounts: What would you choose?

A fixed discount that offers a guaranteed 10% off your purchase OR

A probabilistic discount that offers a 10% chance to get your purchase for free and 90% chance to pay the full price

Choices among gambles have been the “fruit fly” of research on decision-making. In the current work we examine gambles in context of purchases and in particular in context of discounts. There are several reasons why a probabilistic discount is likely to work.

First, there is the attraction of the gamble itself, due to excitement, curiosity, wishful thinking, or variable schedules of reinforcement. Second, getting something for free (i.e. zero price) seems to not only reduce cost, but also add benefit such that people are disproportionately attracted to free items (Shampan'er and Ariely, forthcoming). Finally, recent evidence suggests that paying—part of the buying transaction—is psychologically painful and people therefore try to avoid paying (Prelec and Loewenstein, 1998).

The questions we examine are: 1) Under what conditions do consumers prefer risky / probabilistic discounts? 2) Under what conditions would consumers spend more money if they were given probabilistic discounts? 3) What is the cause for the attraction of the probabilistic-discount? 4) Finally, we use this type of data to examine whether consumers think of purchasing more as a gain or as a loss in terms of their risk attitude.

We examine these questions in four experiments. First, in a field experiment we offer customers of a local video store at checkout a choice between a fixed discount and a probabilistic discount on one video rental with equal expected value. We examine the preference between these two discounts at a 10%, 33%, 50%, 67%, and 90% chance of getting one rental for free and find that in general customers significantly prefer the probabilistic discount over the fixed discount.

Next, we designed an online store in which students were able to spend their own money and buy items ranging from \$0.50 (candy) to \$15 (Amazon Gift Certificate). We had three different versions of the store manipulated between subjects, offering a 10% fixed discount, a 10% probabilistic discount, and a choice between these two types of discounts. Our results show that customers in the probabilistic discount store purchased significantly more of the cheaper items but significantly less of the expensive items. Customers shopping in the store that offered both types of discounts showed a pattern of behavior that was somewhere in the middle although they showed a strong preference for the probabilistic discount.

In a third experiment, we repeated the first experiment in the local video store but this time varying the probabilistic discount such that it would not always offer a chance to get the item for free but instead to buy it for a small, insignificant amount (probabilistic discounts: 11% chance to pay \$0, 12% chance to pay \$0.38, 13% chance to pay \$0.69), while keeping the expected value the same. Again we find that in general customers significantly prefer the probabilistic discount over the fixed discount and that it does not matter whether the probabilistic discount involved a chance of getting the item for free or for a small \$ amount. This result suggests that the attraction of the probabilistic discount is not due to the special role of a zero price.

Finally, we contrast consumers' preference for risky options over sure options in context of purchases for a designer pen with purchases of gift certificates for Amazon.com (a product that comes relatively close to money) and with their preferences in context of gambles involving money-prizes of equal expected surplus. Our results suggest that the attraction for risky options is higher for product purchases than for gift certificate purchases, and even higher than for monetary gambles. Together these findings suggest that the probabilistic discount is significantly driven by the pain of paying involved in a purchase and not (only) by the gamble and the excitement of winning something.

By bringing probabilities to the marketplace we are able to examine how consumers react to probabilities in settings that they are more used to, and hopefully expand our understanding of decision-making under risk more generally.

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### “Wishful Thinking: How Uncertainty Can Improve Promotions”

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On Amir, University of California, San Diego

Advertisements for consumer incentives often contain varying degrees of certainty as to the nature of the incentive. For example, one advertisement might promise a generous gift with purchase. Another might offer a gift with purchase which could be either a generous gift or a more modest gift (the latter incentive being comparably more uncertain). As wishful thinking is only free to operate when the value of an incentive is not explicitly delineated, it seems possible that appraisals of an uncertain incentive's value could be boosted by wishful thinking and might even exceed those aroused by a more specific incentive.

Most conceptualizations of consumer behavior suggest that people tend to be risk averse over gains, that is, they prefer a sure good to a lottery of equivalent expected gain. In particular, because receiving a free gift in a promotion is a gain for consumers, Prospect Theory argues that consumers should be risk averse and favor the more “certain” outcome (Kahneman & Tversky, 1979). However, research has also shown that uncertainty can allow consumers to wishfully think that a superior outcome will emerge and use that as an “elastic justification” (Hsee, 1995). Thus the results on uncertainty are mixed and the question of when wishful thinking aroused by greater uncertainty can boost the perceived value of an incentive above its expected value remains unresolved.

The key hypothesis of this paper is that such instances exist. We claim that uncertain incentives can be appealing when our natural wishful thinking is allowed to operate. This premise relies on the following assumptions about judgments in the domain of gains: 1) People intuitively demonstrate wishful thinking; 2) This wishful thinking holistically increases the perceived value of uncertain rewards; 3) When the judgment is not intuitive, or when factors that inhibit wishful thinking exist, this effect will not occur. We test the theoretical and empirical foundations for these premises in a series of experiments by altering the degree of certainty in the incentives which consumers are shown and assessing consumers' judgments of those incentives.

Our pilot study demonstrates that uncertain promotions can be more motivating than their expected value, and consequently may be as motivating as certain high value rewards. In one condition we offer either a high value reward (a free iTunes song download) and in another condition a low value reward (a point towards a future prize). In a third condition we offer the lottery between the above-mentioned rewards. In line with our predictions, our results show that the lottery between the high and low value rewards is just as effective at generating interest as the high value reward.

Experiments 1-5 explore the process behind this effect. The results of these studies demonstrate that our intuitive wishful thinking is what colors an uncertain incentive with a rosy glow. Thus when we are told that the incentive is a lottery between a high value and a low value reward, our automatic, intuitive response is to perceive the value of this uncertain offer as being greater than its expected value.

We find that this intuitive wishful thinking is different from generalized optimism and is not driven by a biased understanding of base rates. Experiments 1 and 2 illustrate the intuitive nature of these assessments: when any elaboration is encouraged before judgments are made, the positive effect of uncertainty is significantly diminished. Calling into question one's likelihood of receiving the high value incentive (Experiment 1), or simply encouraging participants to "think carefully" before responding (Experiment 2) negates the operation of automatic wishful thinking. In both instances, interest in the uncertain incentive dropped significantly and was on par with interest in the low value reward, as opposed to the high value reward. Interestingly, ratings of one's likelihood of receiving the high value incentive made ex-post were statistically indistinguishable from those made ex-ante, supporting the claim that this effect is not driven by a biased understanding of base rates.

While we demonstrate that when allowed to operate wishful thinking can increase the perceived value of an uncertain gain above its expected value, one may question if the participants evaluating the lottery incentive are actually engaging in wishful thinking or if they are simply focusing their attention on the more extreme of the two outcomes. Experiment 3 rules out this alternate account by assessing consumers' interest in receiving a flu shot when the side effect is either negative (extreme option), moderately negative (preferred option), or a lottery between the two. In line with our contention that consumers employ innate wishful thinking, interest in this lottery condition does not resemble interest in the extreme alternative, but rather resembles that of the preferred alternative with interest in each being higher than that of interest in the extreme option.

Experiments 4 and 5 manipulated antecedents of optimism to further explore what drives interest in uncertain offers. The results demonstrate that when affect is manipulated, uncertain incentives can be as motivating as high value incentives offered with certainty when a positive mood is induced (Experiment 4). As prior research has demonstrated the correlation between mood and optimism (Marshall et al, 1992), these results illustrate how heightening wishful thinking can increase the positive impact of uncertainty on a promotion's effectiveness, while dampening it has deleterious consequences for interest in uncertain incentives. Experiment 5 replicates these findings using a-priori trust in the retailer to manipulate wishful thinking. Again, when wishful thinking is allowed to operate it increased the effectiveness of the uncertain promotion beyond its rational value. These results illustrate a boundary condition which should read as cautionary to some retailers: uncertainty might not be positive when the nature of the retailer promotes skepticism; on the other hand, trusted brands and established venues may benefit by adding uncertainty to their promotions.

Our results contribute to a growing body of literature on how and when uncertainty can be motivating. We believe the research enriches our understanding of how consumers react to retailer promotions and has clear practical implications for marketers.

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