When Losing Feels Better Than It Should: Experience and Anticipation in Gambling

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Abstract

Sports betting grows rapidly in the U.S. However, the wide appeal of sports gambling seems at odds with loss aversion. Why do people persist in sports gambling? This article offers a novel explanation from the perspective of losing. Previous research discusses gambling losses and wins as the outcome per se and thus admits that losing a gamble must be painful. In this article, we make a distinction between the hedonic experience during the sports betting process that resolve the outcome over time and the hedonic impact of the outcome of gamble. We show how these two experiences combine to generate an asymmetric hedonic effect so that losing is less painful than winning is pleasurable. Drawing evidence from real sports betting (Super Bowl) and controlled experiments, we show that the bet-resolving process, such as watching a game unroll, produces positive hedonic impact that buffers the pain of losing but will not reduce the positive feelings of winning, resulting in the hedonic asymmetry that reverses loss aversion, which focuses only on the outcomes. Although people who lack gambling experience may not anticipate the positive hedonic impact of the gambling process, we find that more experienced gamblers might better recollect their positive feelings during the gamble and thus better incorporate such positive impact when anticipating their feelings about losing. As a result, gambling may lack the negative hedonic impact necessary for people to learn to avoid it if that process blunts the negative feelings that would otherwise be associated with losing.

Following the 2018 Supreme Court decision that allowed most U.S. states to legalize sports betting, the rapidly growing sports betting market has fueled an expansion of the gambling industry and deepened gambling problems (Marder & O'Shea 2024; Yeola et al. 2025). A recent study suggests that 37% of U.S. adults, and 49% of sport fans have placed bets on sporting events (Ricciardelli & Appel 2024). In 2024, U.S. bettors lost over $13 billion on legal sports gambling (Purdum 2025). As sports betting spread, governments and organizations pledged action to address gambling problems (Putterman & Moritz, 2025; Yeola et al., 2025). Effectively reducing gambling problems requires better understanding of what drives people to gamble.

The wide appeal of gambling seems at odds with risk aversion (e.g., Bernoulli 1954; Rabin & Thaler 2001; Zhang et al. 2014). The widespread appeal of gambling seems at odds with risk aversion (e.g., Bernoulli, 1954; Rabin & Thaler, 2001; Zhang et al., 2014). Risk aversion is closely tied to loss aversion—the notion that losses loom larger than gains (Kahneman & Tversky, 1979). Because people anticipate that losses will feel worse than equivalent gains will feel good, they tend to avoid uncertain prospects involving both potential gains and losses, even when the expected value is positive. Sports gambling should be even less attractive—it typically offers a negative expected value—making its popularity all the more puzzling. Yet many gamblers continue to gamble even after repeated losses. In a study, Toce-Gerstein and colleagues (2003) found that 59.6% of gamblers pursue more gambling after losses. Sport bettors are especially likely to engage in repeated gambling, often placing bets on regular basis. About 59% of sport bettors place bets at least once a week, and 24% bet three or more times a week (Fayerman-Hansen 2024).

Why do people gamble on sports? This article offers a novel explanation from the perspective of losing, which has been largely overlooked in the past literature. Previous research

discusses gambling losses and wins as the outcome per se and thus presumes or finds that losing a gamble must be painful. However, gamblers in the real world do not just receive an instant outcome after placing a bet. They usually resolve their bets through an engaging process, especially in sporting events. Such processes of resolving the uncertainty of gambling can trigger positive arousal, such as excitement, exerting positive influence on the overall hedonic experience of gambling, making losing less painful. Thus, losing a bet may have less hedonic impact than winning a comparable one, reversing the loss aversion that arises solely from the outcomes. Furthermore, gambling may often lack any negative hedonic impact thus undermining the negative reinforcement of losing. This can stymy people's ability to learn that gambling is a losing proposition.

We also investigate prospective evaluations of the hedonic impact of sports betting. People with little or no gambling experience expect a negative hedonic impact of losing a bet because people tend to focus on the outcome, while how they will feel during the process of watching the sporting event unfold to resolve their bet is an afterthought. However, people with more betting experience might focus more on the betting experience and recall their positive feelings that occur during a sports bet and thus incorporate that positive impact into their predictions. In other words, more experienced bettors may focus more on the process than the outcome of a sports wager, anticipate a smaller negative impact of losing, and therefore bet again.

The rest of the article is organized as follows: We first review past research on why people gamble, with a particular focus on the behavioral and psychological factors that explain the general appeal of gambling. Then, we develop three hypotheses. From a brief review of prior research on the psychology of suspense and sports spectatorship, we develop our first hypothesis

that the positive hedonic impact of gambling processes can reduce the negative hedonic impact of losing. Second, we hypothesize that people in general neglect the positive hedonic impact of gambling processes and thus overestimate the negative impact of losing. Finally, we hypothesize that people with more sports betting experience focus more on the betting process and thus anticipate a smaller negative impact of losing. We test these hypotheses in six studies, drawing evidence from both experimental and real-world sports betting. We conclude with discussions of theoretical and practical implications.

WHY DO PEOPLE GAMBLE? PAST RESEARCH AND THE ALLURE OF WINNING

There have been tremendous research efforts to understand why people gamble. Gambling is associated with certain idiosyncratic factors, such as psychiatric disorders (Petry 2005), familial and genetic determinants (e.g., Lin et al. 1998; Slutske et al. 2000), biological factors (e.g., Goldstein et al. 1985), and environmental influences (e.g., Petry & Steinberg 2005). However, these factors do not explain the broad appeal of gambling that has caused it to take hold across the United States (Zimmerman et al. 2006). In the U.S., 85% of adults have gambled in their lives, and 62% indicated in a recent survey that they gambled in the past 12 months (Marder & O'Shea 2024; National Council of Problem Gambling 2025).

Winning is an apparent attraction of gambling (McMullan & Miller 2009). It is possible that overly positive feelings or beliefs about wins motivate gambling. Past research suggests that people often hold biased beliefs about their chances of winning. For example, people believe that previous losses increase the likelihood of future wins (i.e., gambler's fallacy; e.g., Tune 1964; Tversky & Kahneman 1971). When evaluating outcomes, people accept wins as indicative of

their skill but explain away losses, leading to biased beliefs in higher chances of winning similar future bets (Gilovich 1983). People also tend to be optimistic and wishfully think a bet will resolve favorably (e.g., Rogers 1998; Simmons & Massey 2012; Windschitl et al. 2010). Moreover, in cases where wins are associated with small chances (e.g. lotteries), prospect theory would suggest that people may overweight small probabilities and thus prefer small chances of wins above and beyond their expected value (Kahneman & Tversky 1979; Rogers & Webley 2001).

Past research also shows that the positive hedonic impact of winning encourages gambling. The prospect of winning produces hope that makes gambling enjoyable (Clotfelter & Crook 1991; Juma & Pandelaere 2024). After experiencing a win, people can be drawn to the excitement of winning and start to gamble more (Cummins et al. 2009). Moreover, after a loss, people may pursue the positive feelings of winning to restore their affective state, which motivates them to gamble again (Andrade & Ganesh 2009).

THE HEDONIC IMPACT OF LOSING AS A CAUSE OF SPORTS BETTING

People certainly like to win, but better understanding the experience of losing may help us further explain gambling behavior. Losing a bet may not hurt as much as loss aversion would suggest. Past research that endeavored to explain gambling focused exclusively on the outcome, and thus thought about how winning, including perceptions of the probability of winning, could reduce a past loss and how the excitement generated by winning could overcome what would be a clear obstacle – the very negative prospect of losing.

However, unlike many laboratory gambles with unstated or instant resolution processes, sports gambling in the real world resolves through an engaging process of watching the sporting

event unfold. This process creates suspense, an emotional experience that involves constantly evaluating the uncertainty and updating anticipations as an uncertain event unfolds (Lehne & Koelsch, 2015). Thus, a losing experience in sprots gambling is not just about the eventual outcome but rather an integrated experience of the outcome at the end and the suspense throughout the process of watching the sporting event to resolve the bet. We propose that the suspense experienced in the uncertainty-resolving process has a key role to play in understanding why sports gambling can be hedonically appealing.

Existing research suggests that the hedonic impact of uncertainty-resolving processes or suspense depends on the valence of the uncertain outcomes (Bar-Anan et al. 2009; Lehne & Koelsch, 2015). The process of resolving nonnegative uncertainty, such as uncertain rewards, can stimulate positive feelings such as excitement and enjoyment (Ruan et al. 2018; Shen et al. 2015), while the process of resolving negative uncertainty, such as unknown damages from natural disasters, can trigger negative feelings such as fear and anxiety (Chew & Ho 1994; Wu 1999).

Sports betting involves both negative and positive outcomes (i.e., losses and wins). Nevertheless, optimism prevails in sports spectatorship, and people tend to wishfully think that the outcome will be in their favor (e.g., Massey et al. 2011; Park et al. 2023; Simmons & Massey 2012). If sports bettors focus more on the positive possibility, then the experience of suspense will be positive. Supporting this idea, research on sports spectatorship has consistently found that sports audience generally enjoy a game more the more suspenseful the game is whether their team ultimately wina or losea (Gan et al. 1997; Hall 2015; Madrigal et al. 2011; Peterson & Raney 2008). Therefore, we hypothesize that the sports gambling process has a positive hedonic impact.

We propose that the uncertainty-resolving process in sports gambling produces positive hedonic impact that buffers the negative feelings of losing. By contrast, the positive feelings during the gambling process are unlikely to make winning feel less pleasurable. Taken together, we hypothesize that a losing experience can be hedonically less impactful than a comparable winning experience in sports gambling. For modest wagers, the pain of losing the bet may even be completely compensated for by the excitement of the resolution process. In other words, the integrated experience of the gambling process and outcome shows reverse loss aversion, where the total experience of winning is more hedonically impactful than the total experience of losing. Thus, sports gambling may be a net positive hedonic prospect.

PROSPECTIVE HEDONIC EVALUATIONS OF GAMBLING

We have discussed the idea that the negative hedonic impact of losing may be smaller than the positive hedonic impact of winning in sports gambling because the gambling process triggers positive feelings that buffers the negative feelings of losing. This can make sports gambling a net positive hedonic experience.

An important factor that affects people's decision to approach or avoid sports gambling is their prospective evaluations of how sports gambling will feel. Even though sports gambling can factually produce positive hedonic utility, whether people will pursue or avoid it may depend on whether they expect it to feel pleasurable or painful. Indeed, decisions between options are often influenced by predictions of how each option will feel (Loewenstein et al. 2003; Mellers and McGraw 2001; Simonson 1992). The same is true for choice under uncertainty (Bar-Hillel and Neter 1996; Kahneman and Tversky 1979; Loomes and Sugden 1982). For instance, decision

makers choose among risky prospects as if they are trying to maximize their expected hedonic impact (Mellers et al. 1999). Thus, decisions to gamble are likely influenced by how people predict winning or losing a gamble will feel.

Do people anticipate that losing will feel less painful than winning will feel pleasurable in sports gambling? To accurately predict the hedonic impact of a sports gambling experience, people need to consider both how they feel about the outcome and how they feel during the gambling process, as previously discussed. However, we propose that people may not spontaneously consider their feelings during the process but tend to focus solely on the outcomes.

Risky choices are naturally defined by the outcomes. Research generally views risky choices as "decisions individuals choose between options with different outcomes" (Fiedler & Glöckner 2012), while largely neglecting the outcome-resolving process. Correspondingly, a large body of research has documented how prospective judgments of the outcomes influence risky choices in a variety of ways, but little research has shown that people spontaneously consider the uncertainty-resolving process when making risky decisions. The vast literature about the effects of outcomes on risky choices along with little evidence for any effects of the processes is in line with the famous notion that people tend to overly focus on the outcomes when evaluating decisions under uncertainty (e.g., the outcome bias; Baron and Hershey 1988).

Thus, we expect that people tend to focus on the outcomes and neglect the process when predicting their hedonic reactions to sports gambling. If the resolution process of an uncertain event is enjoyable, ignoring it should result in people estimating a greater hedonic impact of a negative outcome. Thus, we expect that people will generally predict that a losing experience in sports gambling will have a larger hedonic impact than a comparable winning experience.

However, past experiences can inform affective predictions, as people often rely on recollection of their past hedonic experience to predict their feelings in similar situations (Wilson and Gilbert 2003). People with more sports gambling experience may better recall their excitement during past sporting events they bet on. Therefore, when predicting their hedonic reactions to sports gambling, the potential positive feelings during the process of sports gambling are more likely to be top of mind for those who have gambled more. Moreover, when people recollect their emotional reactions to an event, they tend to recall their emotional responses to certain details, or snapshots, of that event, and those short episodes tend to be the peaks and end of the event (Fredrickson & Kahneman, 1993; Kahneman et al. 1993; Varey & Kahneman, 1992). When people experienced an exciting yet losing sports game, the excitement aroused during the process of watching the game with a pending wager can be the positive emotional peak and thus can be particularly memorable. We therefore hypothesize that people with more experience in sports gambling expect losses to hurt less because they can better recollect their positive feelings during the game that buffer their pain of losing.

The reduction in anticipated pain of losing can contribute to repeated gambling. One would think sports bettors after losses should avoid betting again because people naturally learn to avoid behaviors that lead to aversive results (avoidance learning; e.g., Cornwell et al. 2013; Krypotos et al. 2015; Ögren & Stiedl 2010). In other words, when a betting loss hurts, bettors might want to avoid the more painful losses by quitting gambling, and successful avoidance of losses would in turn reinforce avoidance of further gambling (i.e., negative reinforcement; Skinner 1965, 2019). However, one is more likely to anticipate net enjoyment from sports gambling the more one gambles on sports, because increased experience with the excitement of the gambling process makes gamblers predict that losing will not hurt that much while winning

is exciting. As a result, sports gambling may lack the negative impact to trigger avoidance learning for people who have gambled, which in turn encourage further gambling. In other words, the hedonically positive gambling process undermines the negative reinforcement people need to learn to avoid losses.

We next present empirical evidence across six studies. First, we use data from both real-world gambling on 2025 Super Bowl (Study 1) and controlled experiment (Study 2) to demonstrate the hedonic asymmetry of losing and winning. The first two studies also test the hypothesis that people with more sports gambling experience predict less pain of losing. Next, we manipulate the gambling process to closely examine the hedonic impact of the gambling process (Study 3A) and the neglect of such impact in prediction (Study 3B). Finally, drawing on experimental and survey data (Studies 4 and 5), we show that people with more experience in sports gambling predict less negative hedonic impact of losing because they are more likely to focus on the process when predicting their hedonic reactions.

STUDIES 1&2: PRIOR SPORTS GAMBLING REDUCES ANTICIPATED PAIN OF FUTURE LOSSES

We hypothesize that prior gambling experience can reduce anticipated pain of future losses because people may realize that the positive feelings during the gambling process buffers the pain of losing. Specifically, we propose that prior to a sports gambling experience, people think about the hedonic consequences of gambling mainly in terms of outcomes—where losing hurts and winning is pleasurable. However, after going through a gambling experience, people focus more on the enjoyment during the game rather than solely on the outcome, and come to

expect that this in-game enjoyment will buffer the pain of losing. Consequently, following a gambling experience, people may anticipate that losing a future bet will feel less negative than they would have expected beforehand.

In Studies 1 and 2, we first seek to demonstrate that betting on a sports game and losing has indeed smaller hedonic impact than betting and winning. In other words, losing a sports bet is less painful than winning the bet is pleasurable. Then, we compare the affective forecasts of people who recently gambled on a sports game with those who did not. We predicted that people with a recent gambling experience would expect future losses to hurt less than would people without such experience.

STUDY 1: SUPER BOWL

We surveyed Americans the day after the 2025 Super Bowl. Participants reported how much they enjoyed watching the game, whether they placed a bet, and if so, whether they won or lost. They then predicted how much they would enjoy watching next year's Super Bowl under three scenarios: if they bet and win, bet and lose, or do not bet. We hypothesized that participants who bet on this year's game would expect a future loss to hurt less than would participants who did not bet.

Method

We conducted the study on February 10, the day after the 2025 Super Bowl. As pre-registered (https://aspredicted.org/pd22-nfby.pdf), we posted the study initially for 600 participants on Prolific.com and then increased recruitment in batches of 100 until we obtained at

least 200 winners, 200 losers, and 200 non-gamblers. We followed this pre-registered rule to eventually recruit 2202 participants. Seven participants did not specify their net outcomes and were thus excluded, leaving us with a final sample of 2195 (52% female and 47% male, mean age 41).

Participants first indicated whether they watched the 2025 Super Bowl. Those who watched the game proceeded to Part I of the study. Those who did not watch the game skipped to Part II. In Part I, participants rated their overall enjoyment of watching the Super Bowl on a scale of 1 to 9, with higher scores indicating greater enjoyment. Then, they indicated whether they placed any bets on the game. Those who placed bet(s) further indicated their net outcome by selecting one of three options: "I won", "I lost", or "Other" with specification in a text box. They then provided their net gain or loss amounts. Next, in Part II, participants predicted their enjoyment of watching next year's Super Bowl separately for three situations: if they place a bet and win, place a bet and lose, and place no bet, each on a scale of 1 to 9 with higher scores indicating greater enjoyment. The three predictions were in randomized order.

Results and discussion

Out of the 2195 participants, two thousand seventy watched the Super Bowl and one hundred twenty-five did not. Out of the 2070 spectators, one thousand five hundred eighty-seven did not place bets; two hundred one placed bet(s) and experienced a net loss; and two hundred eighty-two placed bet(s) and experienced a net gain. Table 1 summarizes their experienced enjoyment of the 2025 Super Bowl and their predicted enjoyment of next year's Super Bowl. Figure 1 visualizes these results. Below we discuss them in detail.

Experienced enjoyment. As pre-registered, a one-way ANOVA showed that enjoyment of the Super Bowl differed among winners, losers, and non-gamblers ($F(2, 2067) = 40.1$, $p < .001$). Planned pairwise contrasts suggested that, although winners ($M_{winners} = 7.03$, $SD = 2.03$) enjoyed the game significantly more than losers ($M_{losers} = 5.58$, $SD = 2.30$; $t(2067) = 7.49$, $p < .001$) and non-gamblers ($M_{non\text{-}gamblers} = 5.89$, $SD = 2.09$; $t(2067) = 8.40$, $p < .001$), losers' enjoyment did not reliably differ from non-gamblers ($M_{losers} = 5.58$, $SD = 2.30$ vs. $M_{non\text{-}gamblers} = 5.89$, $SD = 2.09$; $t(2067) = 1.98$, $p = .117$). Thus, consistent with our hypothesis, losses on Super Bowl betting in general had less hedonic impact than wins.

Predicted enjoyment. All 2195 participants predicted their enjoyments of watching next year's Super Bowl if they bet and won, if they bet and lost, and if they did not bet. The small portion who did not watch this year's Super Bowl (N = 125; 5.7% of the sample) predicted systematically lower enjoyment than the rest who watched the game, as shown in Table 1, presumably because they were less interested in Super Bowl. To minimize the potential impact of such individual differences in their interest in Super Bowl, we focus our analyses on the vast majority who watched the game (N = 2070; 94.3% of the sample). Including these non-spectators did not alter the conclusions.

Those who did not bet on this year's Super Bowl (the non-gamblers) predicted that they would enjoy next year's Super Bowl significantly less if they gambled and lost than if they did not gamble ($M_{lose,\ predicted} = 3.41$, $SD = 2.23$ vs. $M_{no\text{-}bet,\ predicted} = 6.21$, $SD = 2.05$, $t(1586) = 43.44$, $p < .001$), while they predicted greater enjoyment if they gambled and won than if they did not gamble ($M_{win,\ predicted} = 7.00$, $SD = 2.23$; $t(1586) = 12.47$, $p < .001$). The gap between predicted enjoyment of losing and not betting ($M_{loss\text{-}no\text{-}bet\ gap,\ nongambler} = 2.80$, $SD = 2.57$) was significantly larger than the gap between predicted enjoyment of winning and not betting ($M_{win\text{-}no\text{-}bet\ gap,}$

$_{nongambler}$ = .79, SD = 2.53; t(3172) = 22.22, $p < .001$). In other words, these predictions are consistent with loss aversion where the win seems less hedonically impactful than the loss.

However, those who bet on this year's Super Bowl, whether they won or lost, predicted a smaller gap in enjoyment from not betting to losing ($M_{loss\text{-}no\text{-}bet\ gap,\ winner}$ = .95, SD = 2.42; $M_{loss\text{-}no\text{-}bet\ gap,\ loser}$ = .67, SD = 2.38) than non-gamblers ($M_{loss\text{-}no\text{-}bet\ gap,\ nongambler}$ = 2.80, SD = 2.57; both $p < .001$). That is, people who had just experienced the Super Bowl betting process the day before taking our study predicted smaller hedonic impact of losing next year's Super Bowl bets than those who did not bet on this year's Super Bowl. We propose that this is because those who had just experienced the Super Bowl betting focused more on the gambling process when predicting their enjoyment of the next bet. We further examine the role of the process focus in Studies 4 and 5.

In addition, similar to the non-gamblers, both the winners and the losers predicted greater enjoyment of winning next year's Super Bowl ($M_{win,\ winner\text{-}predicted}$ = 7.82, SD = 1.41; $M_{win,\ loser\text{-}predicted}$ = 7.53, SD = 1.63) than not betting ($M_{not\ bet,\ winner\text{-}predicted}$ = 6.41, SD = 2.15; $M_{not\ bet,\ loser\text{-}predicted}$ = 5.73, SD = 2.01; both $p < .001$). The winners and the losers also predicted greater enjoyment of betting and winning ($M_{win,\ winner\text{-}predicted}$ = 7.82, SD = 1.41; $M_{win,\ loser\text{-}predicted}$ = 7.53, SD = 1.63) than non-gamblers ($M_{win,\ nongambler\ predicted}$ = 7.00, SD = 2.23; both $p < .01$). We further show in Studies 4 and 5 that, unlike the hedonic prediction of losing, greater focus on the gambling process does not increase the predicted enjoyment of winning. In the current study, the gamblers might anticipate greater enjoyment of winning than non-gamblers for reasons unrelated to their focus on gambling processes. For instance, these gamblers might have more sports betting experience and better memories of how wins felt in the past and the non-gamblers.

The results of Study 1 show that, in the real world, betting on a sports game and losing has negligible hedonic impact, while betting and winning greatly increase their enjoyment of the event. People who did not bet on the game failed to anticipate this hedonic asymmetry if they were to bet on another game, erroneously predicting that betting and losing would greatly reduce their enjoyment. However, those who had bet on the game predicted a smaller negative impact of betting on another game and losing. These patterns are consistent with our hypothesis that more experienced gamblers can better recognize the reduced hedonic impact of losing. These results were of course correlational and not free from potential confounds or self-selection. For example, we notice that the reported winning amounts (M_{win} = 81.64, SD = 236.99) were higher than the reported losing amounts (M_{lose} = 370.46, SD = 1085.48), which could contribute to the observed asymmetric hedonic effects of winning and losing. To address them, we next conduct a well-controlled experiment to further test the patterns observed in Study 1.

Figure 1. Study 1 Results

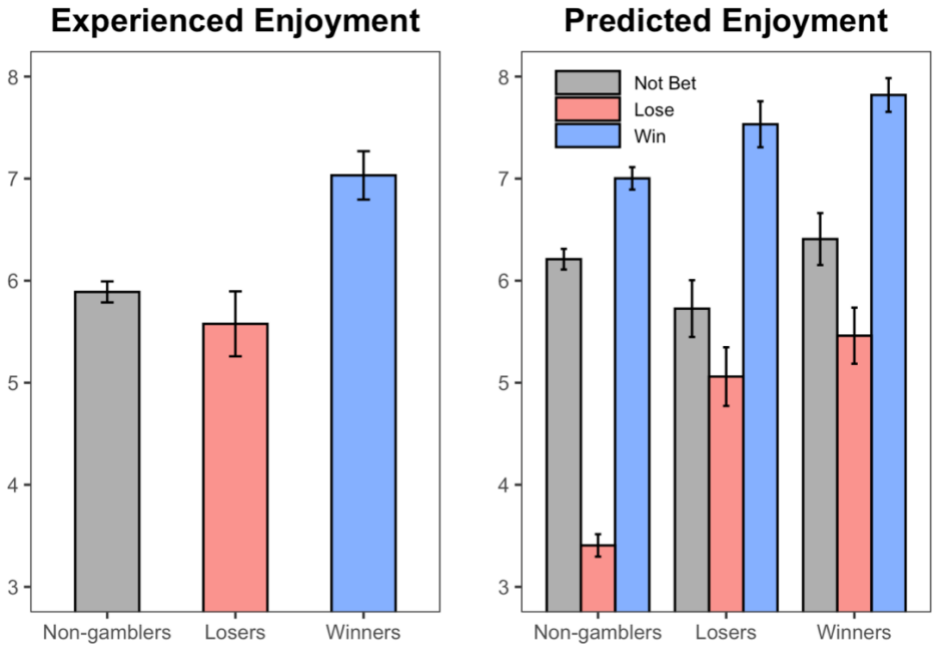


Table 1. Study 1 Results

	N	Experienced Enjoyment	Predicted Enjoyment		
			Winning	Losing	Not Betting
Spectators					
Winners	282	7.03 (2.03)	7.82 (1.41)	5.46 (2.35)	6.41 (2.18)
Losers	201	5.58 (2.30)	7.53 (1.63)	5.06 (2.08)	5.73 (2.01)
Non-gamblers	1587	5.89 (2.09)	7.00 (2.23)	3.41 (2.23)	6.21 (2.05)
Non-spectators	125	N/A	5.79 (2.97)	2.82 (2.33)	4.26 (2.69)

STUDY 2: MANIPULATING BETTING EXPERIENCE

Study 1 found that people with a recent gambling experience expected a future loss to be less painful than did those without such experience. While participants without recent gambling experience predicted that losing a future bet would feel worse than winning would feel good—a pattern consistent with the loss aversion—those who had recently gambled predicted the opposite: that winning would feel better than losing would feel bad. Of course, this evidence is correlational because participants chose whether or not to bet, and selection bias remains possible. Study 2 addresses this limitation by randomly assigning participants to watch a game either with or without placing a bet. We examine both retrospective and prospective hedonic

evaluations after watching the game. We expect the findings from Study 1 to replicate in this randomized design.

Method

Two hundred ninety-nine participants from Amazon Mechanical Turk completed this study. All participants watched the highlights of a hockey game between the Detroit Red Wings and the Pittsburgh Penguins. About two thirds of the participants were randomly selected to bet 20 cents out of their 70-cent study compensation on which team would win. They selected their winning team. If their team won, they would win an extra 20 cents. If their team lost, they would lose the 20 cents. Then, they watched the highlights of one of two games, one won by the Detroit Red Wings and the other won by the Pittsburgh Penguins. The two games were randomly assigned to participants so that participants had a 50% chance of winning their bets. The other participants watched the highlights of a randomly assigned game without placing a bet.

After watching the highlights and, if applicable, resolving their bets, all participants rated how much they enjoyed watching the game on a scale of -100 (intensely unenjoyable) to 100 (intensely enjoyable). Then, they predicted their overall enjoyment, on a scale of 1 (not enjoyable at all) to 9 (extremely enjoyable), if they were to bet on another hockey game and lost, if they were to bet on another hockey game and won, and if they were to only watch another hockey game without betting on it.

Results

The results were consistent with Study 1, as summarized in Table 2 and visualized in Figure 2. The overall enjoyment of watching the game did not reliably differ between losing the

bet and not betting on it (M_{lose} = 42.5, SD = 54.6; $M_{control}$ = 46.9, SD = 41.4; t(208) = .6, $p > .5$) suggesting negligible hedonic impact of losing. The enjoyment of watching the game and winning the bet (M_{win} = 66.8, SD = 36.7) was reliably greater than losing (t(194) = 3.6, $p < .001$) and not betting (t(190) = 3.5, $p < .001$), showing a large positive hedonic impact of winning.

In contrary to the experienced enjoyments, however, participants who did not bet on the prior game predicted that betting and losing was significantly less enjoyable than not betting ($M_{lose, nongambler\ predicted}$ = 3.97, SD = 2.13; $M_{not\ bet, nongambler\ predicted}$ = 5.97, SD = 2.33; t(102) = -9.69, $p < .001$), although they correctly predicted that betting and winning was more enjoyable ($M_{win, non\text{-}gambler\ predicted}$ = 7.38, SD = 1.81) than not betting (t(102) = 7.66, $p < .001$). The gap between predicted enjoyment of losing and not betting ($M_{loss\text{-}no\text{-}bet\ gap, nongambler}$ = 2.00, SD = 2.10) was significantly larger than the gap between predicted enjoyment of winning and not betting ($M_{win\text{-}no\text{-}bet\ gap, nongambler}$ = 1.41, SD = 1.87; t(204) = 2.14, $p = .033$). That is, these predictions are consistent with loss aversion where the win seems less hedonically impactful than the loss.

However, those who bet on the prior game, whether they won or lost, predicted a smaller gap in enjoyment from not betting to losing ($M_{loss\text{-}no\text{-}bet\ gap, winner}$ = .96, SD = 2.16; $M_{loss\text{-}no\text{-}bet\ gap, loser}$ = .80, SD = 2.38) than non-gamblers ($M_{loss\text{-}no\text{-}bet\ gap, nongambler}$ = 2.00, SD = 2.10; both $p < .001$). That is, people who had just bet on the game in the study anticipated smaller hedonic impact of losing another bet than those who did not bet.

In addition, similar to the non-gamblers, both the winners and the losers predicted greater enjoyments of winning another bet ($M_{win, winner\text{-}predicted}$ = 7.61, SD = 1.67; $M_{win, loser\text{-}predicted}$ = 7.49, SD = 2.07) than not betting ($M_{no\ bet, winner\text{-}predicted}$ = 5.48, SD = 2.45; $M_{no\ bet, loser\text{-}predicted}$ = 5.67, SD = 2.63; both $p < .001$). But unlike Study 1, neither the winners nor losers predicted reliably greater enjoyment than the non-gamblers ($M_{win, non\text{-}gambler\text{-}predicted}$ = 7.38, SD = 1.81; both $p > .3$).

Study 2 provides experimental evidence that are in line with what has been observed in 2025 Super Bowl: betting and losing caused smaller hedonic impact than betting and winning the same amount, and having people bet on a sports game increased their predicted enjoyment of betting and losing on another game.

Figure 2. Study 2 Results

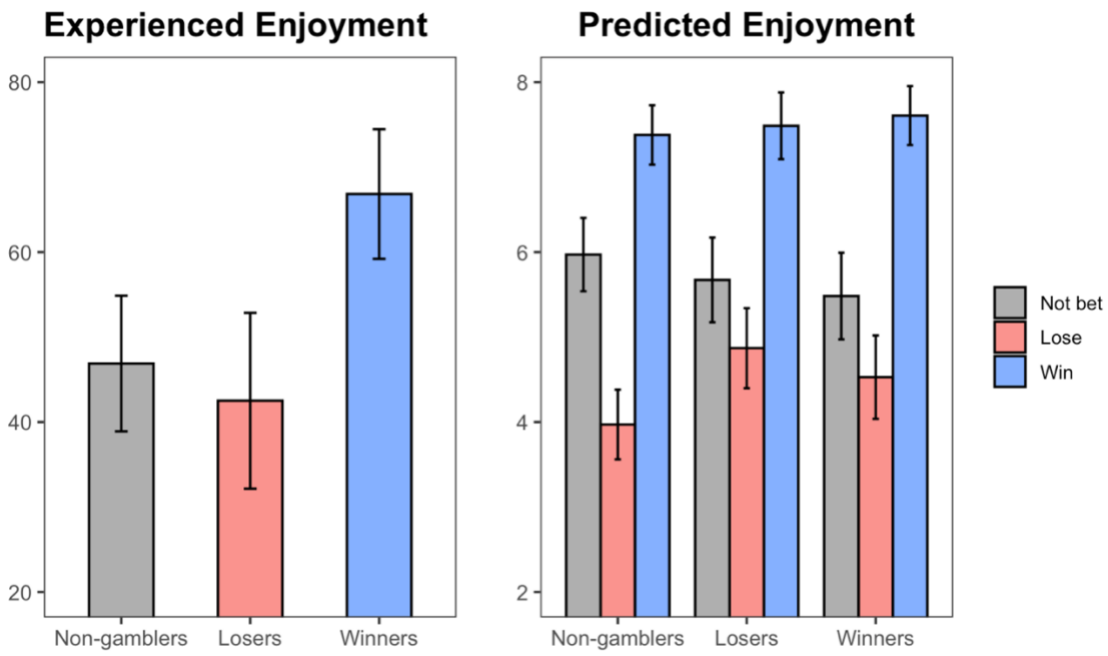


Table 2. Study 2 Results

	N	Experienced Enjoyment	Predicted Enjoyment		
			Winning	Losing	Not Betting
Winners	89	66.8 (36.7)	7.61 (1.67)	4.53 (2.36)	5.48 (2.45)
Losers	107	42.5 (54.6)	7.49 (2.07)	4.87 (2.49)	5.67 (2.63)
Non-gamblers	103	46.9 (41.4)	7.38 (1.81)	3.97 (2.13)	5.97 (2.33)

STUDIES 3A-B: NON-GAMBLERS NEGLECT THE HEDONIC IMPACT OF THE BETTING PROCESS

So far, we have shown that betting on a sports game and losing has smaller hedonic impact that winning, but that people who lack recent gambling experience predicted the opposite. We further show that people with recent gambling experience expect a future loss to feel less painful than people without such experience. This is because, as we have proposed, the gambling process produces positive hedonic impact on the overall experience of gambling that buffers the pain of losing, but people who lack gambling experience neglect the gambling process. Studies 3A and 3B test these proposed mechanisms.

STUDY 3A: MANIPULATING THE BETTING PROCESS

Study 3A examines whether the gambling process buffers the pain of loss by manipulating the duration of the resolution process of a sports bet to be either adequately long and suspenseful (about 1.5 minutes) or almost instantly (shorter than 4 seconds). Moreover, in the previous studies, we targeted general participants with all levels of sports betting experience, it was possible that the reduction in the pain of losing was mainly driven by people who had previous sports betting experience and already liked it. We do not know whether the gambling process also buffers the pain of losing for people who never gambled before. Study 3A addresses this concern by focusing only on people who have minimal or no experience in sports betting (non-gamblers). We predict that an adequately long and suspenseful gambling process buffers the negative hedonic impact of losing for non-gamblers more than a nearly instant bet. In other

words, we predict that for non-gamblers, losing a sports bet that resolve over time feels less painful than losing a bet that resolves quickly.

Further, focusing on non-gamblers' hedonic experiences in Study 3A enables us to legitimately compare them to non-gamblers' predictions in Study 3B, as described later.

Method

As pre-registered (https://aspredicted.org/57b6-ryky.pdf), we recruited 1200 CloudResearch Connect participants who indicated to have minimal or no experience with sports betting in a prescreening survey. Thirty-five participants failed an instructional manipulation check and were thus excluded from the study, as pre-registered, leaving us with a final sample of 1165 (63% female, 34% male, 3% other genders or preferring not to answer; M_{age} = 41 years).

All participants were given a 20-cent bonus and watched the highlights of a hockey game between the Chicago Blackhawks and the Buffalo Sabres. Before viewing the game, all participants used the bonus to place a bet. They were randomly assigned to one of two betting conditions: either a *quick bet*, in which they wagered on which team would score the first goal, or a *slow bet*, in which they wagered on which team would win the game. After placing a bet, participants watched the highlights of one of two games between the Chicago Blackhawks and the Buffalo Sabres. In one game, the Chicago Blackhawks scored the first goal and eventual won the game. In the other, the Buffalo Sabres scored the first goal and won the game. The two games were randomly assigned to participants so that everyone had a 50% chance of winning their bets. Moreover, for both games, the first goal occurred within the first 4 seconds of the 90-second highlights. In other words, unlike the slow bet in which participants resolved their bets by

watching the highlights to the end, the quick bet resolved almost immediately after the highlights started and thus involved minimal suspense.

After watching the highlights and resolving their bets, all participants were asked, "*Overall, how much did you enjoy watching the game?*" They responded on a scale of 1 (not at all) to 9 (very much). Finally, they did an instructional manipulation check that instructed them to select "Other" in a multiple-choice question and typed "fun" in the free response part of that choice. Participants who did not follow the instruction were excluded from the study (Oppenheimer, Meyvis, and Davidenko 2009).

Results and Discussion

A 2 (betting type: quick vs. slow) x 2 (betting outcome: win vs. loss) ANOVA showed a reliable main effect of the betting type ($F(1, 1161) = 23.31$, $p < .001$), a reliable main effect of the betting outcome ($F(1, 1161) = 200.67$, $p < .001$), and no significant interaction ($F(1, 1161) = 1.42$, $p = .234$). Four pairwise contrasts were conducted to further interpret the two main effects. Winners enjoyed the game more than losers for both the quick bet ($M_{\text{quick bet win}} = 5.98$, $SD = 2.54$; $M_{\text{quick bet loss}} = 4.12$, $SD = 2.55$; $t(1161) = 9.11$, $p < .001$) and the slow bet ($M_{\text{slow bet win}} = 5.9$, $SD = 2.09$; $M_{\text{slow bet loss}} = 6.5$, $SD = 2.58$; $t(1161) = 10.91$, $p < .001$). However, as predicted, participants enjoyed the game more when they lost the slow bet than when they lost the quick bet ($t(1161) = 2.62$, $p = .009$). In other words, the suspenseful process of resolving the bet through watching the game unroll buffers the pain of losing the bet. Participants also enjoyed the game more when the won the slow bet than when they won the quick bet ($t(1161) = 4.29$, $p < .001$), suggesting that the exciting resolution process also added to the enjoyment of a winning bet.

Study 3A demonstrates the role of the betting process in counterbalancing the negative affect of losing a bet even for people who lack gambling experience. When participants watched the full game highlights to resolve their bets on the game outcome, the suspenseful process of watching the hockey game unroll produced positive affect that offset the negative affect of losing the bet. By contrast, when their bets were quickly resolved seconds after the game highlights started, they did not get to experience the exciting resolution process—even though they watched the game highlights in full—and therefore the negative affect of losing a simple bet was not counterbalanced, leading to lower enjoyment of losing the quick bet than the slow bet.

STUDY 3B: PREDICTED ENJOYMENT OF QUICK VERSUS SLOW BETS

Study 3A shows that the gambling process produced positive hedonic impact on the overall gambling experience of non-gamblers that buffered their pain of losing. However, do non-gamblers anticipate the hedonic impact of the gambling process ex ante? Study 3B examines non-gamblers' predicted enjoyment of both type of sports betting of Study 3A. We predict that participants will neglect the difference in gambling processes and predict similar enjoyment if they win both types of bets, as well as similar enjoyment if they lose both types of bets.

Moreover, in this study, participants compare the two types of bets side by side. As described in Study 3A, the two bets have the same payoff structure but differ in their gambling processes: one has a suspenseful resolution process, while the other lacks such a process. This allows us to test whether people fail to consider the hedonic impact of the resolution process in prediction, or whether they simply underappreciate it and/or overestimate the hedonic impact of a loss. Unlike in Study 2 where participants predicted the enjoyment of losing versus not betting,

participants in Study 3B predict the enjoyment of two equally sized losses that differ only in how they resolve. If participants do consider the resolution process, they should expect losing a bet with a suspenseful resolution process to be less painful than losing a quick bet without such a process. However, we predict that participants neglect the process and anticipate similar enjoyment of losing both types of bets.

Method

As pre-registered (https://aspredicted.org/c5xd-9wg4.pdf), we recruited 300 CloudResearch Connect participants who indicated to have minimal or no experience with sports betting in a prescreening survey. Twenty-six participants failed an instructional manipulation check and were thus excluded from the study, as pre-registered, leaving us with a final sample of 274 (56% female, 43% male, 1% other genders or preferring not to answer; M_{age} = 41 years).

Participants read about both the quick and slow bets in Study 3A on the same page and imagined placing each type of bet. They then predicted how much they would enjoy the game if they won and lost each type of bet on a scale of 1 (not at all) to 9 (very much). As a result, each participant made four affective predictions: enjoyment of winning the quick bet, losing the quick bet, winning the slow bet, and losing the slow bet. All four predictions were made on the same page. Then, they did an instructional manipulation check like the one in Study 3B, and those who did not follow the instruction were excluded from the study.

Results and Discussion

As pre-registered, we conducted a 2 (quick vs. slow bet) x 2 (win vs. loss) repeated-measure ANOVA on predicted enjoyment. There was only a significant main effect of the betting outcome ($F(1, 273) = 393.87$, $p < .001$). There was no reliable main effect of the betting type ($F(1, 273) = 2.34$, $p = .127$) or interaction ($F(1, 273) = .23$, $p = .631$). Planned contrasts revealed that participants predicted greater enjoyment if they won the bet than if they lost the bet both for the quick bet ($M_{\text{quick bet win}} = 6.58$, $SD = 2.19$; $M_{\text{quick bet loss}} = 3.83$, $SD = 2.20$; $t(273) = 18.36$, $p < .001$) and for the slow bet ($M_{\text{slow bet win}} = 6.64$, $SD = 2.17$; $M_{\text{slow bet loss}} = 3.94$, $SD = 2.29$; $t(273) = 19.02$, $p < .001$), but that they did not predict any difference in enjoyment between losing a quick versus slow bet ($t(273) = 1.41$, $p = .160$) or between winning a quick versus slow bet ($t(273) = .87$, $p = .387$). That is, people who lack gambling experience neglected the positive hedonic impact of the gambling process.

Studies 3A and 3B together shows that, although the resolution process of sports betting buffers the pain of losses for people even with no prior experience in sports betting, they do not anticipate the positive hedonic impact of gambling processes. Instead, when they predict how much they will enjoy betting on a sports game, they solely focus on the betting outcome and expect a loss to feel equally painful whether or not it is resolved through a suspenseful process.

STUDY 4: GAMBLERS FOCUS MORE ON THE GAMBLING PROCESS

We have shown in Studies 3A and 3B that people who lacked experience in sports betting do not anticipate a positive hedonic impact of the resolution process in sports betting. However, as we have shown in Studies 1 and 2, increase in gambling experience reduces anticipated pain of losing. This suggests that more experienced gamblers should expect losses to hurt less

because, as we have proposed, increased experience increases gamblers' focus on their positive feelings during the resolution process that improves their anticipated overall experience betting even if it ends with a loss.

Study 4 tests this proposition by gauging participants' sports betting experience, their affective forecasts of future betting, and their focus on the betting process versus the betting outcome in their forecasts. We predict that betting experience positively correlate with focus on the betting process, which in turn positively correlates with predicted enjoyment of betting and losing.

Method

As pre-registered (https://aspredicted.org/6jxx-3jmy.pdf), we recruited 400 participants from Prolific.com. Twenty-three failed an instructional manipulation check and were thus excluded from the study, as pre-registered, leaving us with a final sample of 377 (39% male, 59% female, 2% other genders or preferring not to answer; M_{age} = 36.8 years). Participants imagined they were about to watch a hockey game with friends and then answered seven survey questions that measured their opinions about betting on the game, as shown in the Table 1. Questions 1 and 2 measured their hedonic focus on the process versus outcome when deciding whether to place a bet. Questions 3 to 5 measured their predicted enjoyment from a winning bet, a losing bet, or not betting. Questions 6 and 7 measured their experiences in sports betting. At the end of the study, they did the same instructional manipulation check as Study 3.

Table 1. Study 4 Survey Questions

	Question Stem	Response Scale
1.	When deciding whether to place a small bet on the game, how much do you consider how you will feel when you watch the game before you find out whether you win or lose your bet?	1 (Very Little) to 9 (A Great Deal)
2.	When deciding whether to place a small bet on the game, how much do you consider how you will feel when you find out whether you win or lose your bet?	1 (Very Little) to 9 (A Great Deal)
3.	Overall, how enjoyable would it be to place a small bet on a hockey game, watch the game, and win your bet?	1 (Not enjoyable at all) to 9 (Extremely enjoyable)
4.	Overall, how enjoyable would it be to place a small bet on a hockey game, watch the game, and lose your bet?	1 (Not enjoyable at all) to 9 (Extremely enjoyable)
5.	Overall, how enjoyable would it be to watch a hockey game without betting on it?	1 (Not enjoyable at all) to 9 (Extremely enjoyable)
6.	How much personal experience do you have with sports betting?	1 = No experience. 2 = Minimal experience, 3 = Some experience, 4 = Considerable experience, 5 = Enormous experience
7.	Have you bet on sports in the last 12 months?	1 = No, 2 = Yes, only once, 3 = Yes, a few times, 4 = Yes, more than 5 times

Results and Discussion

We pre-registered three predictions. First, we predicted that people with more experience in sports betting would focus more on the gambling process relative to the gambling outcome. To test this, as pre-registered, we first created a process-focus score by taking the difference between a participant's responses to questions 1 and 2. Higher scores thus suggested a greater focus on the gambling process relative to the gambling outcome. We then created an experience score by summing up a participant's responses to questions 6 and 7. Higher scores thus indicated more experience in sports betting. As predicted, the process-focus score positively correlated

with the experience score ($r = .14$, $p = .008$), suggesting that more people with more experience in sports betting focused more on how they would feel during the game before either team won.

Second, we predicted that participants who focused more on the gambling process would anticipate greater enjoyment from a losing bet. To test this, we created a loss-enjoyment score by taking the difference between a participant's predicted enjoyment of losing the bet and not betting. Higher scores thus indicated greater anticipated enjoyment from losing relative to not betting. As predicted, the loss-enjoyment score positively correlated with the process-focus score ($r = .13$, $p = .010$). We did not pre-register any predictions about the predicted enjoyment of winning. We have suggested that people might take the weighted average of episodes of a gamble to evaluate its overall hedonic impact. Then, if the enjoyment of gambling reaches its peak upon winning, a greater focus on the gambling process would not further increase the overall enjoyment. Indeed, the process-focus score did not correlate with the win-enjoyment score—the difference between predicted enjoyment of winning and not betting ($r = -.03$, $p > .5$).

Taken together, we predicted that participants with more experience in sports betting would anticipate greater enjoyment from a losing bet. Supporting this prediction, the experience score positively correlated with the loss-enjoyment score ($r = .19$, $p < .001$). We did not pre-register any predictions about the enjoyment of winning, while our data showed a positive correlation between the experience score and the win-enjoyment score ($r = .12$, $p = .017$). More experienced gamblers might enjoy wins more due to reasons unrelated to the gambling process, as discussed above.

Study 4 provides correlational evidence that people who were more experienced in sports betting focused more on their hedonic experience when watching the game before knowing who win and thus anticipated greater enjoyment from sports betting that resolved even unfavorably.

In the next study, we seek experimental evidence to further demonstrate how gambling experiences influence the predicted enjoyment of gambling.

STUDY 5: MANIPULATING FOCUS

Study 4 provides correlational evidence that people with greater sports gambling experience focus more on the gambling process compared to the outcomes, and that this process focus is associated with reduced anticipated pain from losing a bet. This supports our proposition that gamblers persist because their experience leads them to attend more to the in-game process and its buffering effect on losses.

Study 5 is a controlled test of whether greater focus on the gambling process causally reduces anticipated pain from losing. Participants predict the hedonic impact of a sports bet; before making their predictions, some are prompted to focus on the gambling process, others are prompted to focus on the outcome, and the rest are not prompted to focus on anything. We predict that prompting participants to focus on the process will decrease their predicted pain of losing, whereas prompting them to focus on the outcome will make no difference, given that most people focus on outcomes by default.

Method

Six hundred two participants from Amazon Mechanical Turk completed this study (57% female, 43% male, .7% other genders or preferring not to answer; M_{age} = 36 years). Participants imagined partaking in a study in which they would watch the highlights of a hockey game and

bet 20 cents out of their 70-cent payment on the game outcome. If they won their bets, they would win another 20 cents. If they lost their bets, they would lose the 20 cents. Participants then predicted their overall enjoyment if they were to bet on the game and lost, if they were to bet on the game and won, and if they were to only watch the game without placing a bet.

Participants were randomly assigned to one of three conditions, in which they were either prompted to consider their enjoyment during the game (*process-focus*), prompted to consider their enjoyment *at* the end of the game (*outcome-focus*), or not prompted (*control*), when they predicted enjoyments. For example, in all conditions, participants were asked "*Overall, how enjoyable would it be for you to watch the game if you bet on it and won?*". In the *process-focus* condition, participants also read "*When answering, please take into consideration your ongoing experience while watching the game before either team has won,*" while in the *outcome-focus* condition they read "*When answering, please take into consideration your experience when learning which team has won*." Similar prompts were provided for the predictions of losing and not wagering.

Results and Discussion

First, we hypothesized that people intuitively focus on potential outcomes and are therefore unaffected by an outcome-focus manipulation. To test this, we conducted a 2 (focus manipulation: outcome-focus vs. control) x 3 (situation: not gambling vs. losing vs. winning) repeated measures ANOVA with predicted enjoyment as the dependent variable. We found no main effect of focus ($F(1,413) = 2.50$, $p = .115$), and no simple effects of focus in any situations: directing focus to the outcome did not affect the predicted enjoyment of betting and winning

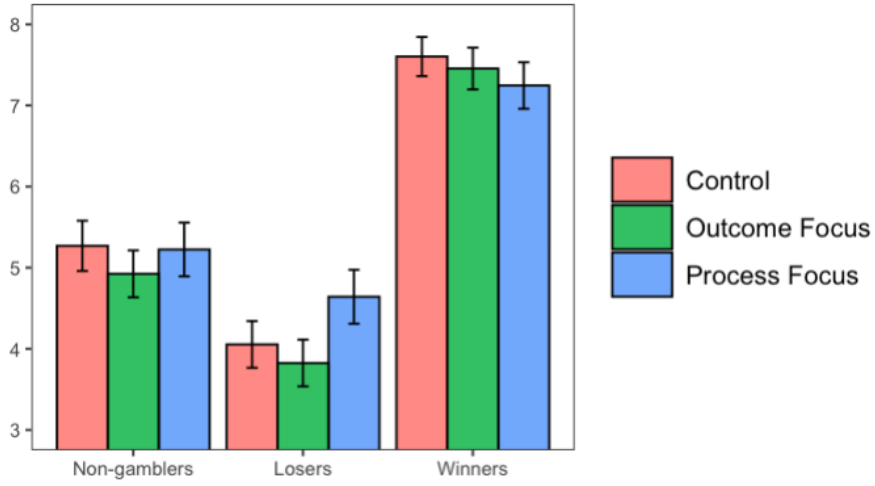
($M_{outcome\text{-}focus}$ = 7.5, $M_{control}$ = 7.6, t(413) = .8, $p > .4$), betting and losing ($M_{outcome\text{-}focus}$ = 3.8, $M_{control}$ = 4.1, t(413) = 1.1, $p > .2$), or not betting ($M_{outcome\text{-}focus}$ = 4.9, $M_{control}$ = 5.3, t(413) = 1.6, $p > .1$).

More importantly, we hypothesized that prompting participants to consider the betting process influenced predicted enjoyment from a losing bet. To test this, we conducted a 2 (focus manipulation: control vs. process focus) x 3 (situation: not betting vs. losing vs. winning) repeated measures ANOVA with predicted enjoyment as the dependent variable. A significant interaction term ($F(2, 778) = 8.25$; $p < .001$) suggested that prompting participants to consider the process of uncertainty resolution had a different effect on their predicted enjoyment depending on the betting outcome. Follow-up t-tests confirmed that, while prompting process focus had no effect on participants' predicted enjoyment from not betting ($M_{control,\ no\text{-}bet} = 5.27$, $SD = 2.26$ vs. $M_{process\text{-}focus,\ no\text{-}bet} = 5.22$, $SD = 2.31$; $t(289) = .19$, $p > .8$), it significantly increased the predicted enjoyment from a losing bet ($M_{control,\ lost} = 4.05$, $SD = 2.10$ vs. $M_{process\text{-}focus,\ lost} = 4.64$, $SD = 2.32$; $t(389) = 2.63$, $p = .008$), implying that the process focus prompt reduced the predicted hedonic impact of losing. To take a closer look, we took the difference between each participant's predicted enjoyments of not betting and losing. The process-focus participants predicted a smaller enjoyment gap between not betting and losing ($M_{gap,\ process\text{-}focus}$ = .58, SD = 2.54) than both the control participants ($M_{gap,\ control}$ = 1.22, SD = 2.38; t(389) = 2.54, $p = .011$) and the outcome-focus participants ($M_{gap,\ outcome\text{-}focus}$ = 1.10, SD = 2.38; t(396) = 2.10, $p = .037$), while the predicted enjoyment gap did not reliably differ between the control and outcome-focus participants (t(413) = .50, $p > .6$). In other words, the process focus prompt successfully reduced people's predicted hedonic impact of gambling losses, while the outcome focus prompt did not, as predicted. Process focus also marginally decreased the predicted enjoyment from betting and

winning ($M_{control,\ won} = 7.60$, $SD = 1.76$ vs. $M_{process\text{-}focus,\ won} = 7.25$, $SD = 2.00$; $t(389) = 1.88$, $p = .061$). Figure 2 visualizes these patterns.

Prompting people to consider their experience during an uncertain event decreased the predicted negative impact of an uncertain event that resolves unfavorably, while prompting them to consider their experience at the moment of loss had no effect. Prompting people to consider their experience during the same event as the uncertainty-resolving process without any uncertain outcome of interest also had no effect on their predicted enjoyment. These patterns suggest that when making predictions, people tend to focus on potential outcomes and neglect the positive hedonic experience of uncertainty.

Figure 4. Predicted Enjoyment in Study 5



Note. Error bars = 95% C.I.'s

GENERAL DISCUSSION

In this article, we make a distinction between the hedonic experience during the sports gambling process that resolve the outcome over time and the hedonic impact of the outcome of gamble. We show how these two experiences combine to generate an asymmetric hedonic effect of sports gambling so that losing have smaller hedonic impact than winning, as demonstrated in Studies 1, 2, 3A, and 4. Specifically, we show in Study 3A that the process of resolving the uncertain outcome in sports gambling has positive hedonic effects that can buffer the negative impact of losing but will not reduce the positive impact of winning, resulting in the hedonic asymmetry.

However, as we further show in Studies 1, 2, 3B, and 4, people generally overestimate the negative hedonic impact of losing in sports betting because they do not spontaneously consider the hedonic effect of the gambling process but instead focus only on the outcome. However, convergent evidence across real-world sports gambling (Study 1), correlational survey (Study 4), and controlled experiment (Study 2) demonstrate that people with more experience in sports gambling are more likely to consider the positive feelings during gambling processes and therefore anticipate smaller negative impact of losing.

Theoretical Implications

We add to the gambling literature on two fronts. First, we present a new way of understanding the hedonic impact of gambling by incorporating the effect of the gambling process. Past research on the hedonic impact of gambling primarily focuses on the outcome per

se while neglecting the process. We are the first to examine winning and losing as holistic experiences shaped by both the gambling process and its result. The holistic hedonic experience of gambling also illustrates that risky choices in the real world may not always follow loss aversion because the uncertainty-resolving process might exert positive influence on the overall experience.

Second, we offer a novel perspective to understand why people gamble by examining the hedonic impact of losing. Past research largely focuses on gamblers' overly positive views about wins, such as unrealistically high probability of winning (e.g., Rogers 1998; Tune 1964) or special desire for winning (e.g., Andrade & Iyer 2009; Clotfelter 1991). Other research also discusses how the positive feelings of winning can be addictive and recklessly pursued (Cummins et al. 2009). Instead of emphasizing on winning, we focus on the hedonic impact of losing and show that losing sports bets may not hurt that much, which provides a new angle to understanding repeated gambling. While past research implicates that the allure of winning fuels repeated gambling, our findings suggest that the losing fails to dissuade people from gambling again because it lacks sufficiently negative hedonic impact for people to learn to avoid it.

Practical Applications

Regulatory agencies and nonprofit organizations in the U.S. and around the world have implemented responsible gambling (RG) policies and programs to help vulnerable players refrain from excessive gambling. These RG initiatives often try to dissuade people from excessive gambling by correcting misbeliefs about probabilities and expected values of gambling, usually through means of education or regulatory policies that limit certain misleading game features

(Blaszczynski et al. 2011; Ladouceur et al. 2017). However, such efforts are ineffective for many gamblers who clearly understand the odds, especially those with excessive gambling experience.

Our findings offer novel theoretical insights and practical implications for RG. We find that losing does not hurt that much because the positive hedonic impact of the gambling process buffers their negative feelings about losses. Without the process, losing feels painful (Study 3). Thus, RG initiatives that encourage gamblers to focus more on the painful losses and less on the exciting gambling process could make the overall experience of a losing gamble more negative, which could in turn reduce their willingness to gamble.

To increase gamblers' focus on the outcomes of losing gambles, RG programs can develop devices that help problem gamblers track their losses. Tracker-based interventions can be effective in addressing unhealthy behaviors (Chung et al. 2017; Esakia et al. 2018; Ringeval et al. 2020). For example, using wearable trackers such as Fitbit is found to improve personal health (Ringeval et al. 2020). Similar wearable or portable devices that allow gamblers to actively tracking their losses may raise awareness of the real negative part of gambling that is otherwise under the cover of exciting gambling processes.

Another way to make losses feel more painful is to raise awareness of the opportunity cost of gambling in addition to the financial cost. For example, educational programs could encourage gamblers to reflect on how the money they gambled away could have been used for other things they enjoy but often find too expensive to afford, such a long-desired vacation or a concert of their favorite musicians.

Moreover, we find that when deciding whether to gamble, gamblers tend to focus on the gambling process, which they know will produce positive feelings. If the exciting suspense throughout the gambling process is a major source of pleasure of gambling, gamblers could try to

create a suspenseful process while eliminating the financial risks by placing "gentleman's bets" on sports games, with no money but only the honor of the bettors at stake.

Limitations and Future Research Directions

On general gambling. In this research, we focus on sports gambling. Resolving bets through sporting events are often suspenseful and hedonically stimulating. Although we do not have evidence for gambling in other contexts such as casinos, many other forms of gambling also involve suspenseful processes throughout which participants constantly evaluating the uncertainty and updating anticipations, such as playing blackjack or Texas hold'em in casinos. Future research can investigate whether those gambling processes outside of sporting events have similar effects.

On potential moderators. Throughout this research, we consistently show that gambling processes had positive hedonic impact. However, we have not examined the potential factors that might increase or reduce the hedonic impact of the process. Future research can investigate what might moderare the positive hedonic effects of gambling processes.

On gambling amounts. In all experimental studies, we used small amounts of gambling outcomes from 20 to 50 cents, but we have not systematically examined the role of gambling amounts. The gambling amounts varied in Super Bowl study, but people gambled voluntarily and therefore selection bias might confound any analysis of the effect of gambling amounts. It is possible that when the stakes increase, with everything else constant, the experience of uncertainty may generate anxiety instead of excitement, making the uncertainty-resolving

process hedonically negative rather than positive. Future research may investigate the boundaries of the asymmetric hedonic effects of uncertain events.

In conclusion, we find that the uncertainty-resolving process in sports gambling can provide a substantial contribution to the hedonic impact of the overall gambling experience, in some cases completely overcoming the impact of losing. However, people's affective forecasts tend to neglect gambling processes and focus exclusively on outcomes, resulting in biased predictions of the hedonic impact of sports gambling. These findings offer novel insights to the behavioral decision theory of gambling, implicate a new explanation for the puzzle of repeated gambling, and provide practical implications for responsible gambling.

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