# Unclaimed Prize Information Biases Perceptions of Winning in Scratch Card Gambling

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## Introduction

### IN THE MONEY

| PRICE | GAME NUMBER | PRIZE AMOUNT | TOTAL | UNCLAIMED |
|---|---|---|---|---|
| $5 | 2038 | $100,000.00 | 6 | 2 |
| $5 | 2038 | $10,000.00 | 3 | 1 |
| $5 | 2038 | $1,000.00 | 15 | 6 |
| $5 | 2038 | $500.00 | 8 | 6 |
| $5 | 2038 | $250.00 | 8 | 3 |
| $5 | 2038 | $100.00 | 3380 | 1347 |

$$\text{Payback Percentage} = \frac{\text{Value of Unclaimed Prizes}}{\text{(Cost)}\,\text{Tickets Remaining}}$$

- Unclaimed prize information, specifying how many of each prize amount has yet to be claimed, is commonly provided to gamblers by various lottery operators.

- While unclaimed prize information feels intuitively useful, without knowing the number of tickets remaining, it is effectively uninformative when attempting to determine the value (i.e., payback percentage) of a scratch card game.

## Hypotheses

- Despite unclaimed prize information's lack of utility we predicted that:

1. Participants (N = 201) would feel that they were more likely to win, be more excited to play, and ultimately prefer to hypothetically purchase scratch cards featuring higher numbers of unclaimed prizes (Experiment 1).

2. This bias would persist when participants (N = 201) were given all the necessary information (ticket remaining information) to calculate the payback percentage of each scratch card game (Experiment 2).
   - Note: All scratch cards in Experiment 2 featured an identical payback percentage

3. Participants (N = 200) would continue to prefer scratch cards with higher numbers of unclaimed prizes even when cards were manipulated such that the number of unclaimed prizes shared a negative relationship with payback percentage (Experiment 3).

## Methods

| Card Type | Game | Prize Amount | Total Prizes | Unclaimed Prizes |
|---|---|---|---|---|
| High | 100X Multiplier (Green) | $1,000,000 | 2 | 2 |
| Unclaimed | 100X Multiplier (Green) | $25,000 | 10 | 7 |
| Prizes | 100X Multiplier (Green) | $1,000 | 100 | 78 |
| Medium | 100X Multiplier (Blue) | $1,000,000 | 2 | 1 |
| Unclaimed | 100X Multiplier (Blue) | $25,000 | 10 | 5 |
| Prizes | 100X Multiplier (Blue) | $1,000 | 100 | 54 |
| Low | 100X Multiplier (Red) | $1,000,000 | 2 | 0 |
| Unclaimed | 100X Multiplier (Red) | $25,000 | 10 | 3 |
| Prizes | 100X Multiplier (Red) | $1,000 | 100 | 24 |

- All Experiments featured three scratch card games that were identical with the exception that they varied with regards to the number of unclaimed prizes available.

| Game | Prize Amount | Total Prizes | Unclaimed Prizes |
|---|---|---|---|
| 100X Multiplier (Blue) | $1,000,000 | 2 | 1 |
| 100X Multiplier (Blue) | $25,000 | 10 | 5 |
| 100X Multiplier (Blue) | $1,000 | 100 | 54 |

Total Number of Tickets Remaining: 336,857

- In Experiments 2 and 3 participants were also provided with the total number of tickets remaining for each scratch card game.

- Participants judged each scratch card game by responding to the following items (all experiments):

1. Likelihood of Winning

How likely do you think you are to win a prize while playing 100X Multiplier (Blue)?

| 1 (Extremely unlikely) | 2 | 3 | 4 (Neither likely nor unlikely) | 5 | 6 | 7 (Extremely likely) |
|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

2. Perceived Excitement

How excited would you be to play 100X Multiplier (Blue)?

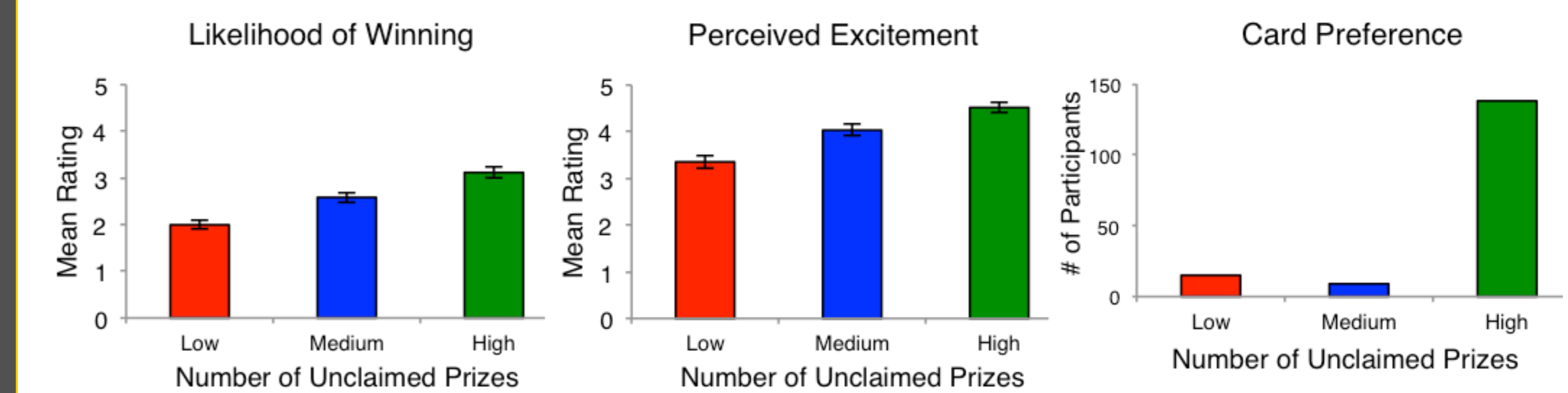| 1 (Not at all excited) | 2 | 3 | 4 (Neutral) | 5 | 6 | 7 (Extremely excited) |
|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

3. Card Preferences

Say you received a $25 gift card to spend on the following scratch cards. Each card costs $5. How many of each card would you like to purchase?
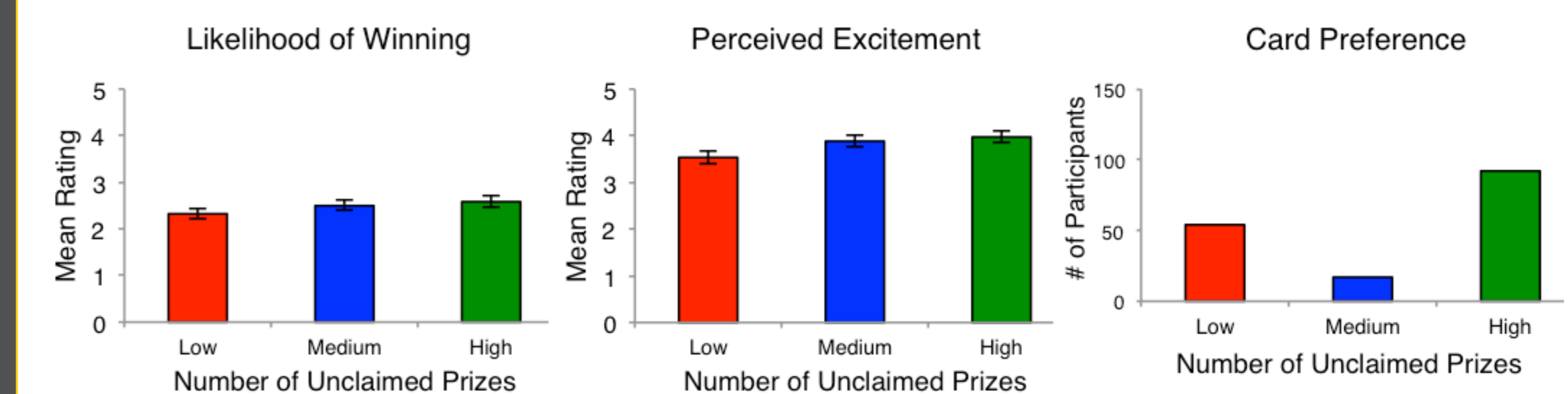
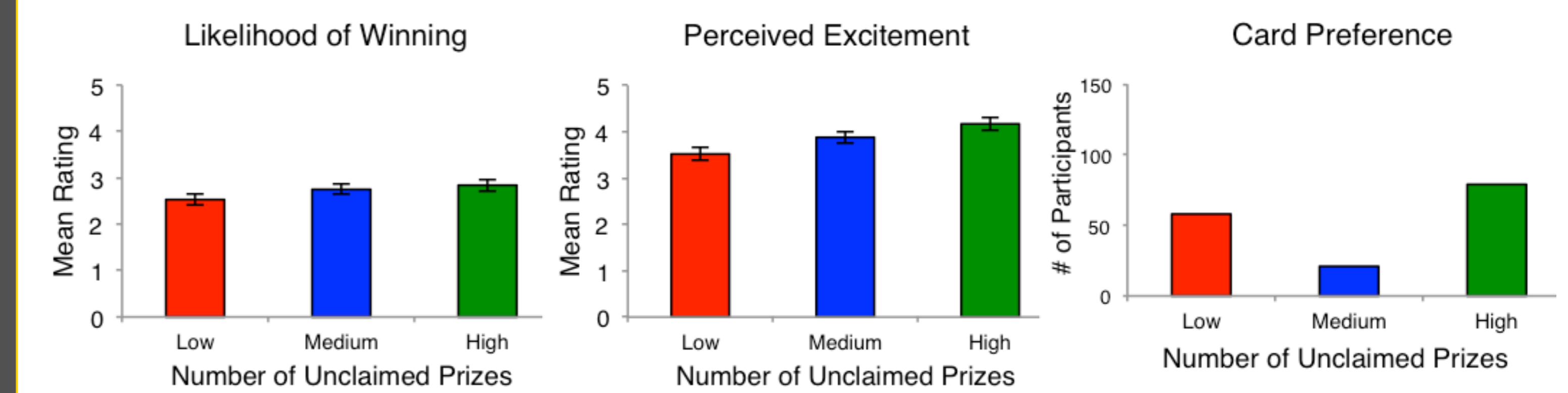| 0 | 100X Multiplier (Green) | 0 | 100X Multiplier (Blue) | 0 | 100X Multiplier (Red) |
|---|---|---|---|---|---|

## Results

### Experiment 1



Likelihood of Winning · Perceived Excitement · Card Preference
(Mean Rating / # of Participants vs. Number of Unclaimed Prizes: Low, Medium, High)

### Experiment 2



Likelihood of Winning · Perceived Excitement · Card Preference

### Experiment 3



Likelihood of Winning · Perceived Excitement · Card Preference

## Conclusions

- Despite being uninformative in Experiment 1, participants were biased by unclaimed prize information such that they preferred scratch cards with a greater number of unclaimed prizes.

- Although attenuated, this biased persisted in Experiments 2 and 3 with participants preferring high unclaimed prize scratch cards with an equal (Exp. 2) or lower (Exp. 3) payback percentage compared to the other available scratch card games.

- This bias occurred in Experiments 2 and 3 despite the fact that participants were given the total number of tickets remaining for each scratch card game, effectively allowing them to calculate an exact payback percentage for each scratch card.

- Overall, the results of the current study suggest that participants are unduly biased by unclaimed prize information when playing scratch card games.

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