

# **CENTRE for GAMBLING RESEARCH at UBC**

## **An online gambling intervention using the realization effect**

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a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

**Department of Psychology**

# Objectives

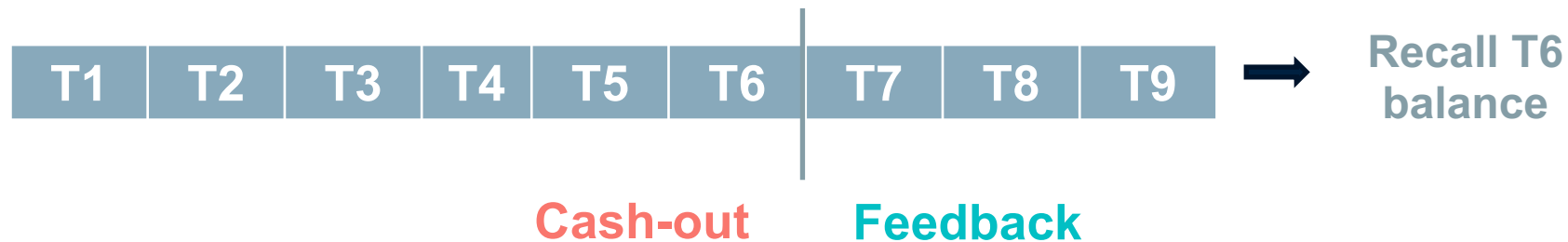
- To design and evaluate a gambling intervention to reduce **loss-chasing**, as a 'responsible gambling' tool.
  - **Loss-chasing:** the gambler continues betting in order to recover prior losses (e.g., increase bet size over the course of a losing session). It is the most endorsed symptom of gambling disorder (Zhang et al., 2020).
- Does '**cashing out**' reduce risk-seeking behaviour after losses in experienced gamblers?

## Realizing losses reduces chasing

- Encouraging money exchange between (mental) accounts induces re-referencing and reduce chasing losses, termed **the realization effect** (Imas, 2016; Merkel et al., 2021).
- In the gambling context, the process of cashing out (e.g. money transfer between gambler's wallet to the casino) is a natural driver of the realization effect (Flepp et al., 2021).

# Experiment

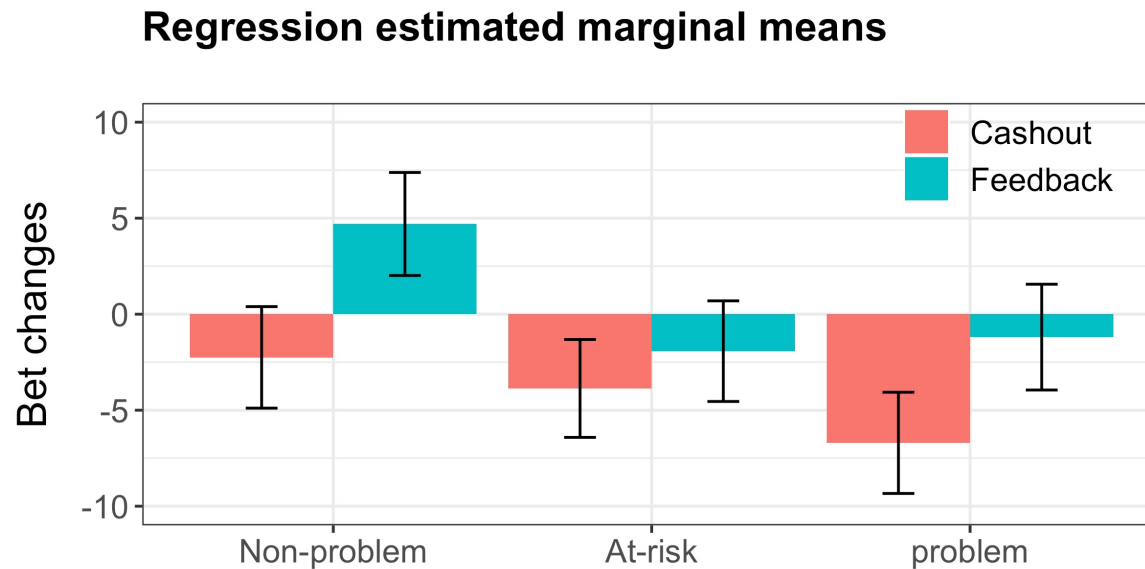
We recruited 689 non-problem gamblers, at-risk gamblers, and gamblers with problems.



**Cash-out:** the participant cashed out from game 1 (e.g. *PrimeMax*) and switch to game 2 (*LottoLuck*) after the 6th bet.

**Feedback:** the participant received their account balance but did not switch games.

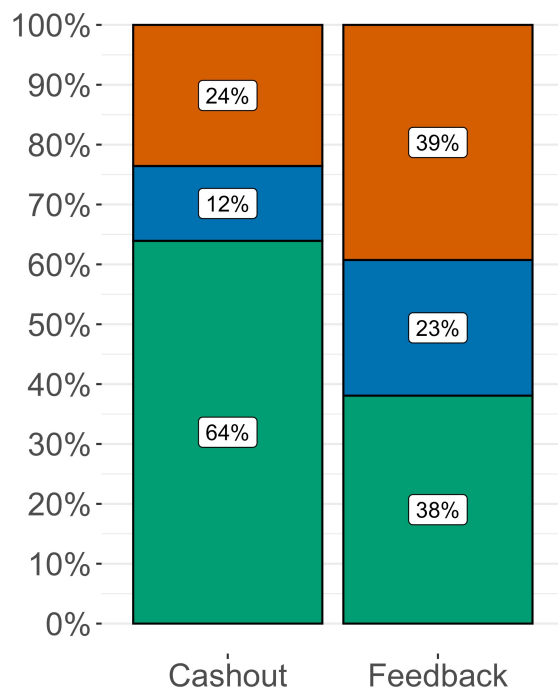
## Did cash-out change loss-chasing?



**YES**

**Non-problem** gamblers bet significantly less after cashing out than after the feedback, whereas the **at-risk** and the **problem** groups did not differ after cashing out and the feedback.

## Did cash-out (vs. feedback) change the memory about the balance?



*What was the T6 balance?*

**Partial:** recalled > actual balance

**Over:** recalled < actual balance

**Fully:** recalled = actual balance

**YES**

After cashing out, more people could recall the exact balance than after receiving the feedback.

## 'Cashing out' reduced loss chasing

- 'Cashing out' between bets reduces risk-seeking behaviour after losses in **non-problem gamblers**, replicating the *realization effect* in the healthy samples (Imas, 2016).
- **At-risk gamblers** and **gamblers with problems** did not reduce loss chasing significantly after cashing out compared to after the feedback.
- Financial transactions ('cashing out') may be used as an online responsible gambling tool in non-problem gamblers. Our procedure shows some effectiveness even with digital and hypothetical cash, although stronger manipulation may be needed in at-risk gamblers and people transfers with gambling problems.

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# An online gambling intervention using the realization effect

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## INTRODUCTION

### Objective

- To design and evaluate a gambling intervention to reduce loss-chasing, as a 'responsible gambling' tool.
- Does '**cashing out**' reduce risk-seeking behaviour after losses in experienced gamblers?

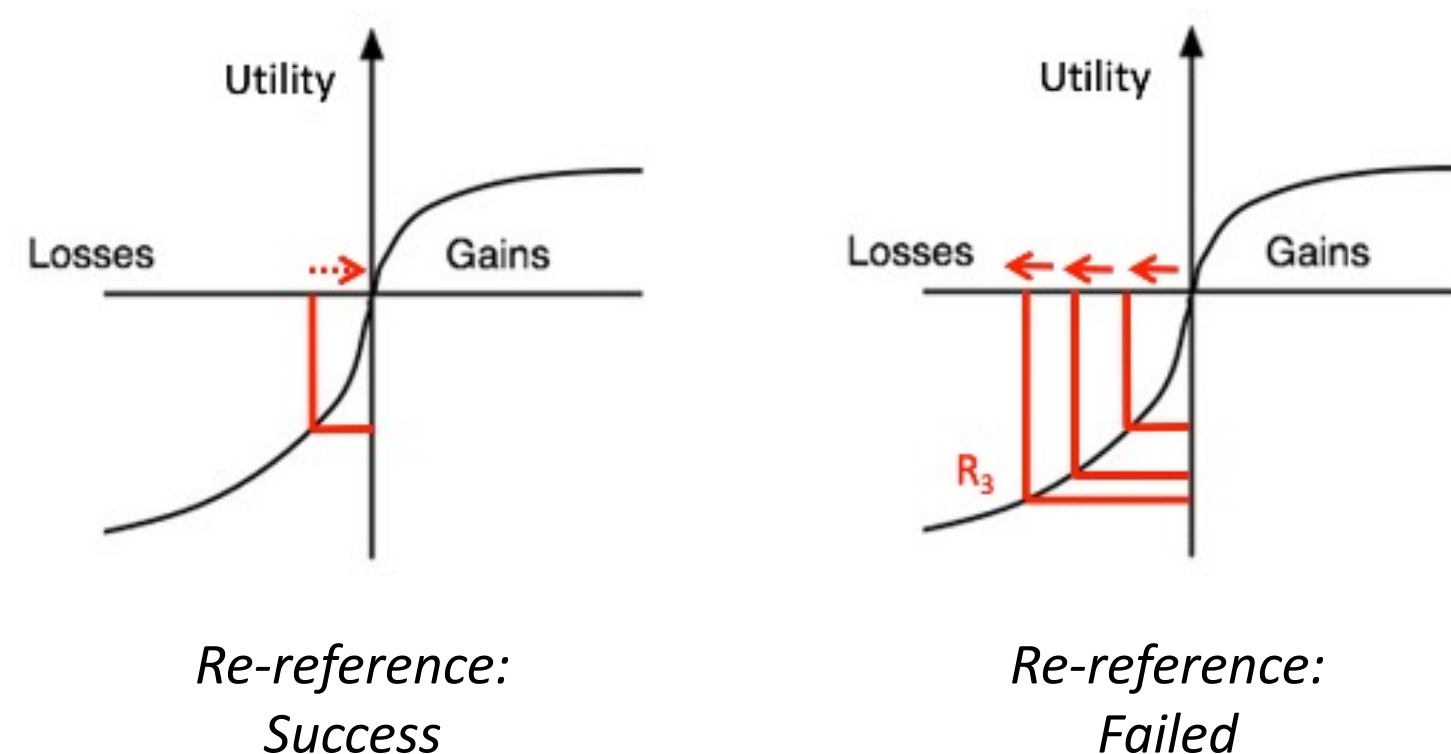
### Background

**Loss-chasing:** the gambler continues betting in order to recover prior losses (e.g., increase bet size over the course of a losing session). It is a central clinical feature of disordered gambling (Zhang et al., 2020):

- At-risk gamblers: 50.7% are chasers
- Gamblers with problems: 75.9% are chasers (Toce-Gerstein et al., 2003).

### When does loss-chasing occur?

According to Prospect Theory, increasing risk-seeking following losses could arise from a failure to 're-reference' and 'closes the associated mental account'. Successful re-referencing starts the next bet with a clean mental slate, any prior losses are regarded as final or *realized*.



### How can chasing be stopped?

- Encouraging money exchange between (mental) accounts induces re-referencing and reduce chasing losses, termed the **realization effect** (Imas, 2016; Merkel et al., 2021).
- In the gambling context, the process of cashing out (e.g. money transfer between gambler's wallet to the casino) is a natural driver of the realization effect (Flepp et al., 2021).

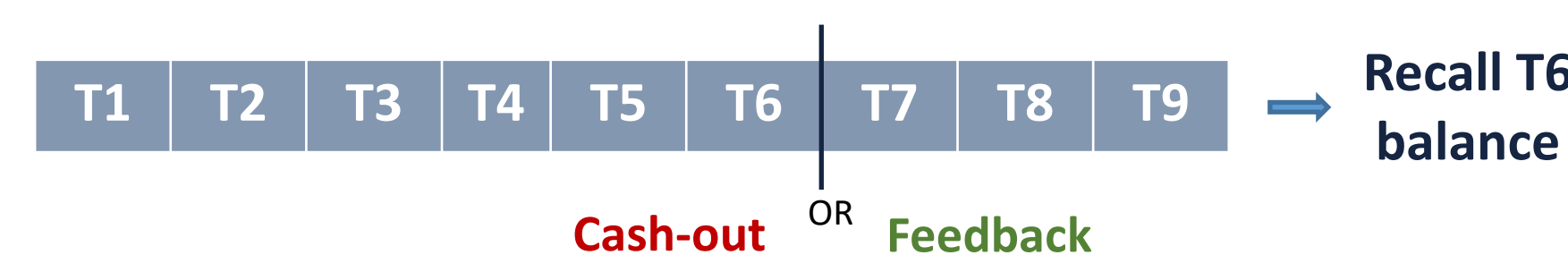
## METHODS

### Participants

	Gender	n
Non-problem	Female	118
	Male	109
At-risk	Female	123
	Male	116
Problem	Female	55
	Male	168

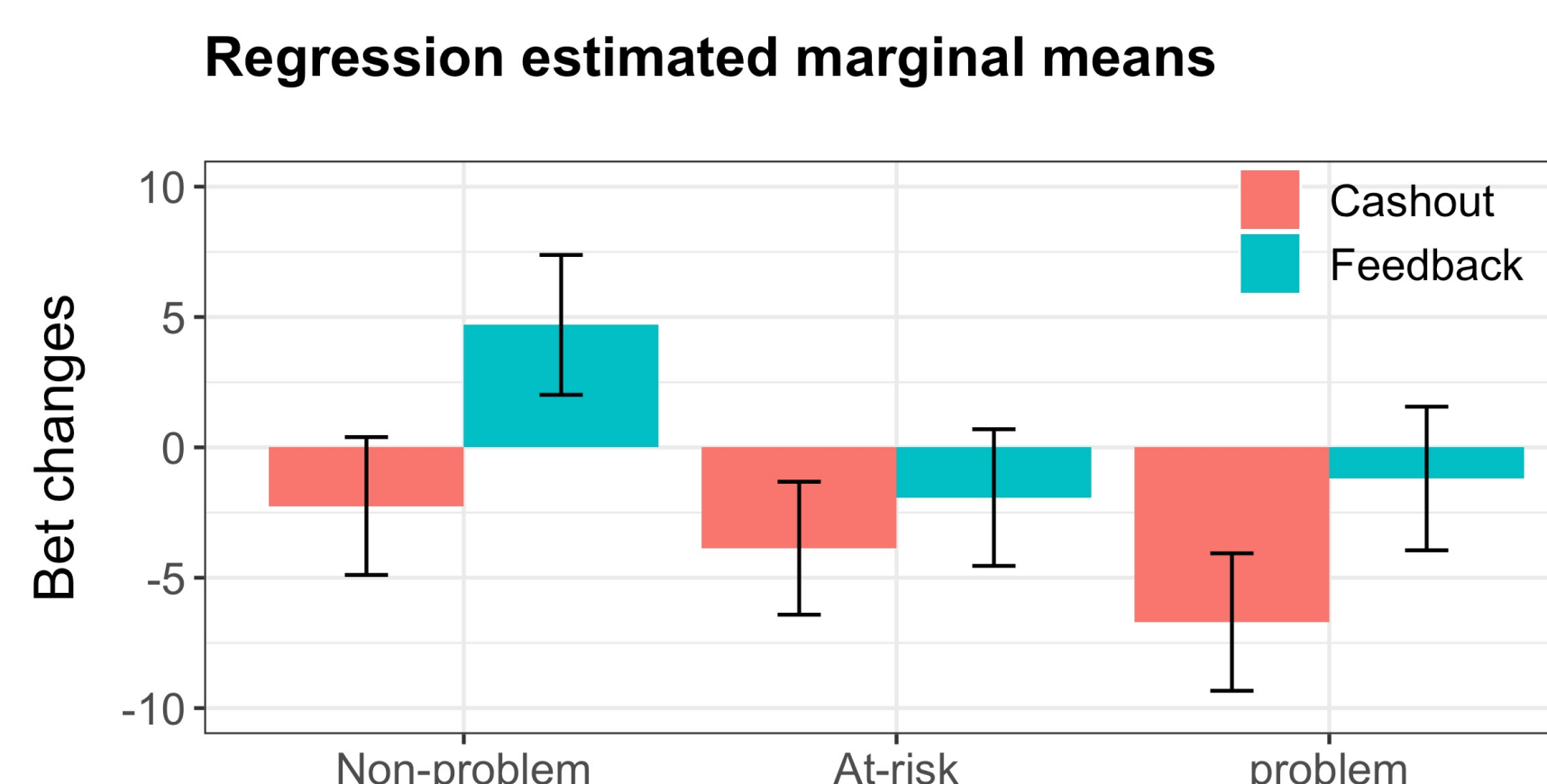
### Procedure

Payoff	Probability	Payoff	Probability
Win 2.5 times your investment	1/3	OR	Lose all
			2/3

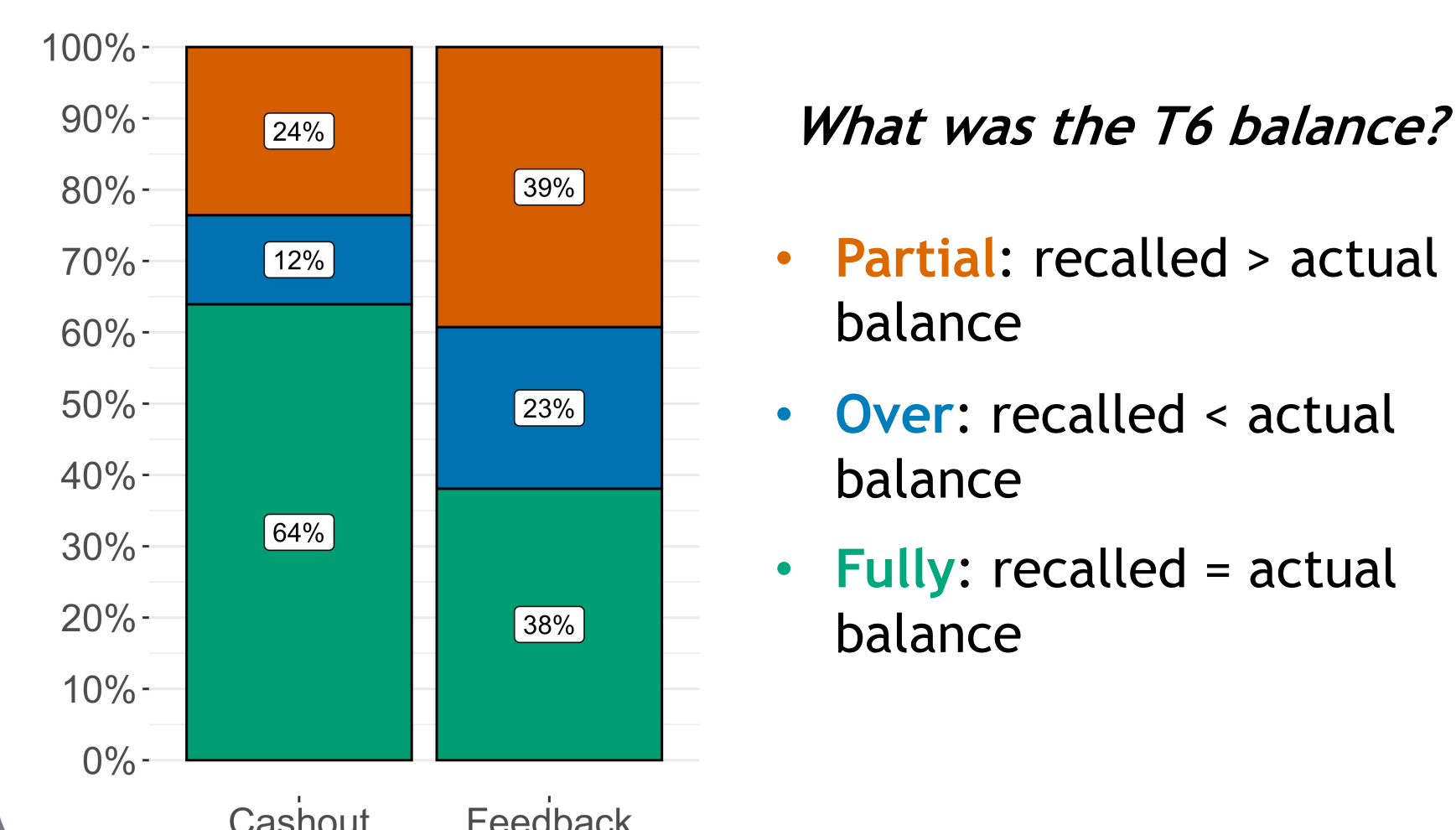


## RESULTS

### Did cash-out change loss-chasing?



### Did cash-out (vs. feedback) led to different degree of re-referencing?



- Prolific participants in Canada and the US.
- Recruited from 2021 Nov 17 - Dec 17.
- Gambled at least once in the past 12 months.
- Median age was 31.
- Stratified by the Problem Gambling Severity Index.

- Cash-out:** the participant cashed out from game 1 (e.g. 'PrimeMax') and switch to game 2 ('LottoLuck') after the 6th bet.
- Feedback:** the participant received their account balance but did not switch games.

- Non-problem gamblers bet significantly less after cashing out than after the feedback ( $B = -6.95, p = .020$ ). Whereas the at-risk ( $B = -1.94, p = 0.5917$ ) and the problem groups ( $B = -5.51, p = .207$ ) did not differ significantly across the cash-out and the feedback conditions.
- Compared to non-problem gamblers, the cash-out effect did not different significantly in the at-risk ( $B = 5.00, p = .284$ ) and the problem groups ( $B = 1.44, p = .785$ ).

- More participants fully re-referenced after cashing out than the feedback ( $\chi^2(2) = 45.77, p < .001$ ). This pattern was similar across gambling groups.
- Participants who over re-referenced ( $M = 5.55, SD = 24.35$ ) bet significantly more than the fully ( $M = -3.16, SD = 29.809$ ) and partially re-referenced groups ( $M = -4.35, SD = 27.74, F(2, 680), p = .005$ ).

## CONCLUSION

- '**Cashing out**' between bets reduces risk-seeking behaviour after losses in non-problem gamblers, replicating the *realization effect* in the healthy samples (Imas, 2016). At-risk gamblers and gamblers with problems did not reduce loss chasing significantly after cashing out compared to after the feedback.
- Financial transactions ('cashing out') may be used as an online responsible gambling tool in non-problem gamblers. Our procedure shows some effectiveness even with digital and hypothetical cash transfers, although stronger manipulation may be needed in at-risk gamblers and people with gambling problems.
- Compared to the feedback condition, the cash-out condition induced were more more accurate in re-referencing, and the degree of re-referencing predicted reduced loss chasing. Thus, our new manipulation check indicates that successful re-referencing closes the mental account and reduces chasing, as predicted by the realization effect.

## REFERENCES & DISCLOSURES

- Toce-Gerstein, M., Gerstein, D. R., & Volberg, R. A. (2003). *Addiction*, 98(12), 1661-1672.
- Imas, A. (2016). *American Economic Review*, 106(8), 2086-2109.
- Zhang, K., & Clark, L. (2020). *Current Opinion in Behavioral Sciences*, 31, 1-7.
- Flepp, R., Meier, P., & Franck, E. (2021). *Organizational Behavior and Human Decision Processes*, 165, 45-55.
- Merkle, C., Müller-Dethard, J., & Weber, M. (2021). *Experimental Economics*, 24(1), 303-329.
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## CONTACT



## POSTER

