# People Reject Lotteries When Assigning Losses

The Hebrew University of Jerusalem

**Yair Nahari**

**Alex Shaw**

**Shoham Choshen-Hillel**

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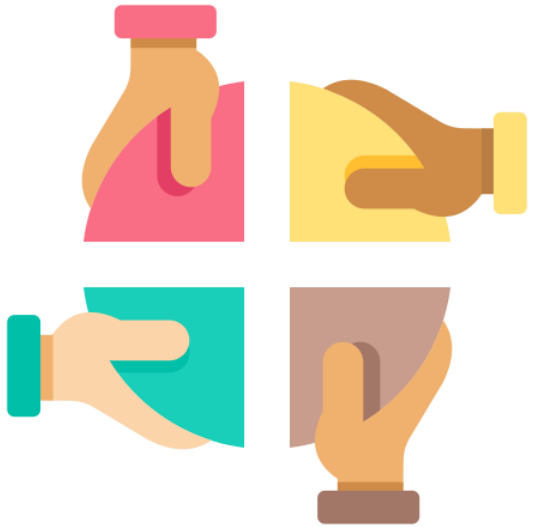
# Two Principles Guiding Resource Allocation Decisions

## Equity



e.g., Adams, 1965; Cook & Hegtvedt, 1983

## Efficiency

e.g., Arkes, 1996; Choshen-Hillel et al., 2020

# Sometimes, Equity and Efficiency clash

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# Decision-makers use **lotteries** to solve equity-efficiency dilemmas

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Yet, this was only shown in allocation of **gains**

+$1000

# Decision-makers use **lotteries** to solve equity-efficiency dilemmas

(Blount, 1995; Choshen-Hillel et al., 2015; Gordon-Hecker et al., 2017; Tyler, 2000)

## How about **losses**?

-$1000

# Hypothesis

In equity-efficiency trade-offs:

Decision-makers will be less likely to use lotteries for allocating losses than gains.

- In losses, they will opt less for inequitable options, and waste more

**Why?**

Different expectations of DMs about the reactions of the recipient.

- In losses, DMs would worry that recipients react more negatively if they lose by a coin flip than when both parties lose.

# Outline of Studies

**Study 1** – Bonus allocation scenario

**Study 2** – Bonus allocation scenario + mechanism

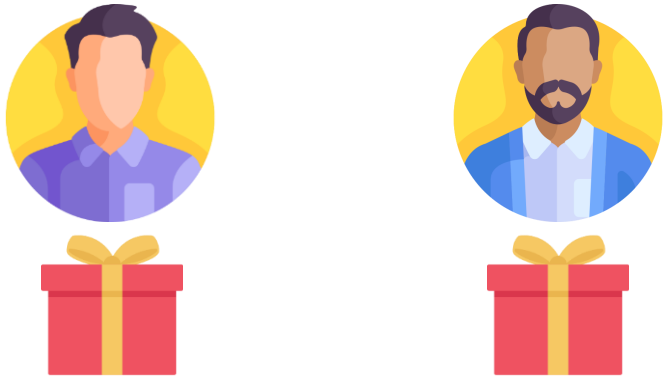
**Study 3** – Lab study with real payments

# Study 1

Imagine that you are a manager at a large company.

Two employees named Bill and James do the same job and make the same salary. Bill and James received the same evaluations, which were the highest in the company. The company has decided to reward them by giving them concert packages as a bonus.

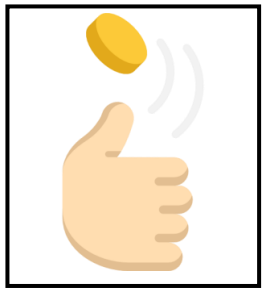
## Gain





## Loss

## Gain



## Loss

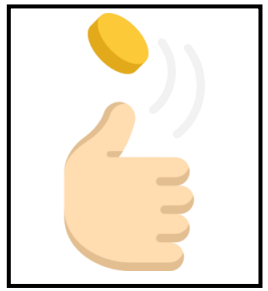
## Gain

## Loss

**The company must revoke at least one package**

## Gain

## Loss

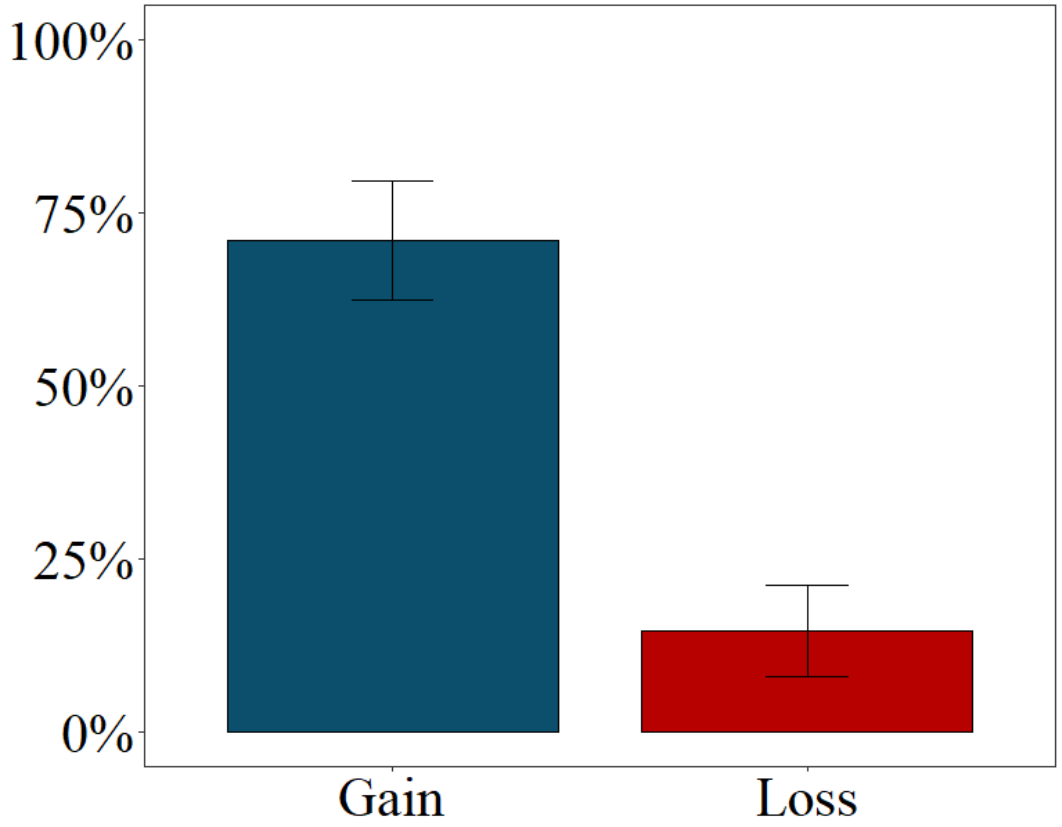


## Gain

## Loss

# Study 1

% Flipping a coin
(choosing an inequitable yet efficient allocation)




Can prospect theory explain this finding?

**No**.

Concern with the recipient's reaction might.

$\chi^2(1) = 70.12$, $p < .001$, *Cramer's* $V = 0.57$

$N = 216$, Prolific

# Study 2


**Goals**:

1. Replicate gain/loss effect with the same scenario.

2. Mechanism: Decision-makers' **expectations** about the recipients' reactions.

    - Recipients are expected to react more negatively to losing the coin flip (compared to similar outcome by equity) in losses than in gains

# Study 2 – Procedure

Participants were presented with the Study 1 scenario, and made their decision in losses / gains.

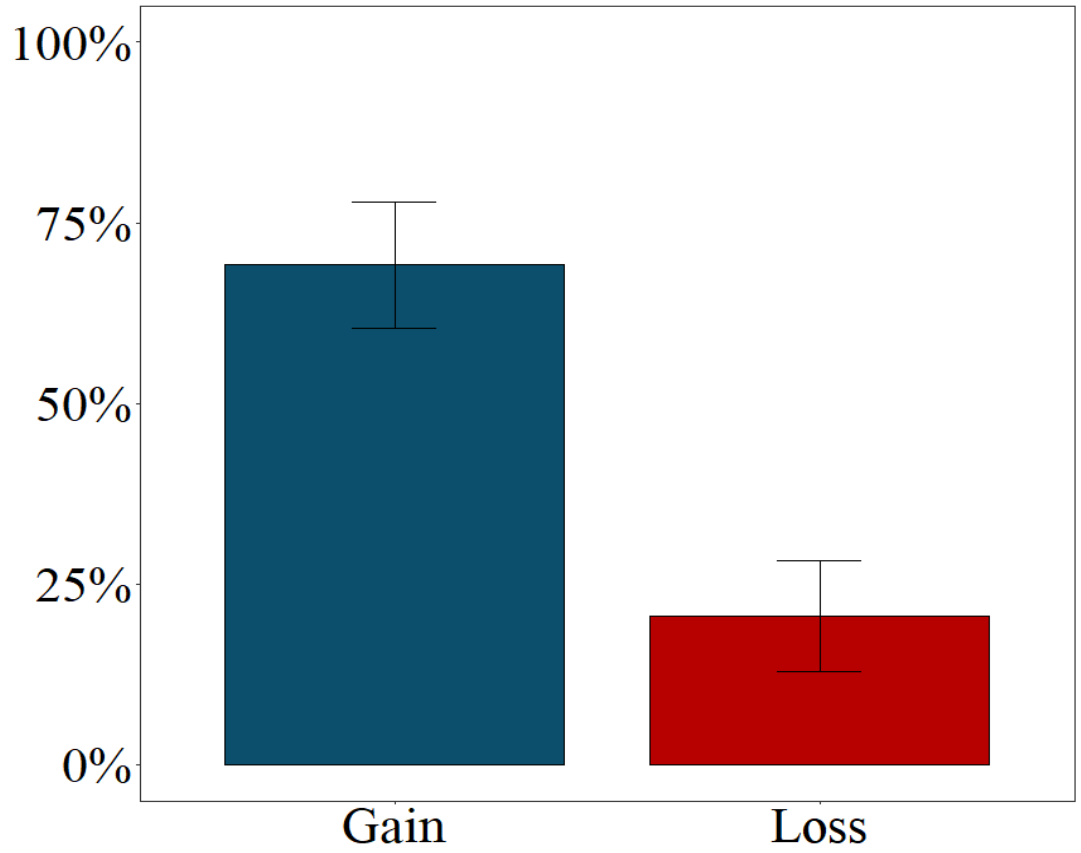
They were asked to rate their **expectations** of the recipient's reaction to getting **only 1 package (not 2)**:

- How satisfied would he be, if his outcome was **determined by a coin flip**?
- How satisfied would he be, if his outcome was **the same as the other employee's**?

The difference in expectations should be greater in losses vs. gains, and mediate the gain/loss effect.

# Study 2

% Flipping a coin
(choosing an inequitable yet efficient allocation)

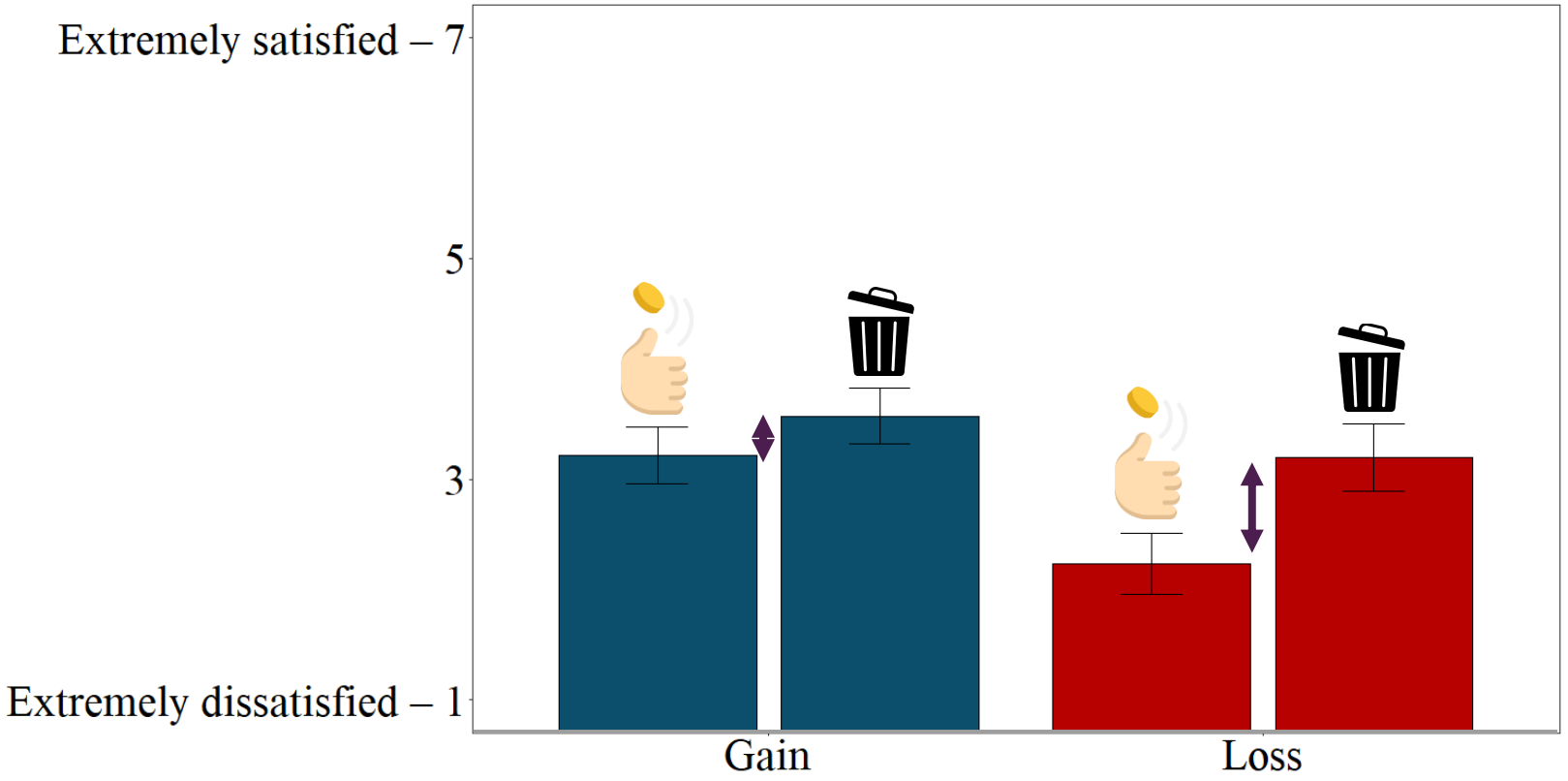



$\chi^2(1) = 51.08$, $p < .001$, *Cramer's* $V = 0.48$

$N = 214$, Prolific

# Study 2

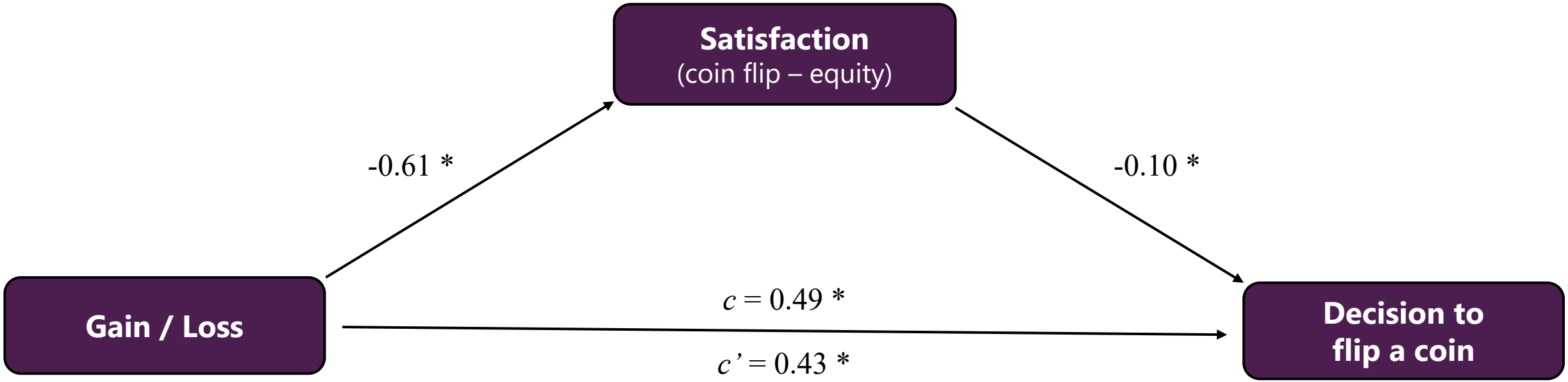
Decision-makers' expectations of the recipient's reaction to getting 1 package




*Interaction*: $F(1, 212) = 5.68$, $p = .018$, $\eta^2 = 0.01$

# Study 2

**The expected reaction of the recipient receiving only 1 package mediates the effect of gain/loss on the tendency to flip a coin**




$N = 214$, Prolific

Indirect effect = 0.06

Bootstrap CI [0.01, 0.11]

# Study 3


**Goals: Real decisions, real money, larger groups**

- Students were asked to vote on the payment scheme for Mturkers in another study
  - Gain vs loss
  - Lottery / equitable yet inefficient allocation
- The students' vote determined Mturkers' payments

# Study 3

## Gain

- 10 Shekel bonus
- In fact, we can give some more bonus

**Vote**:

Add 5 Shekels to half

of the Mturkers

[half get 15, half get 10]

Add 5 Shekels to no one

[10 to all]

## Loss

- 15 Shekel bonus
- Sorry, we need to take back some bonus

**Vote**:

Revoke 5 Shekels from half

of the Mturkers

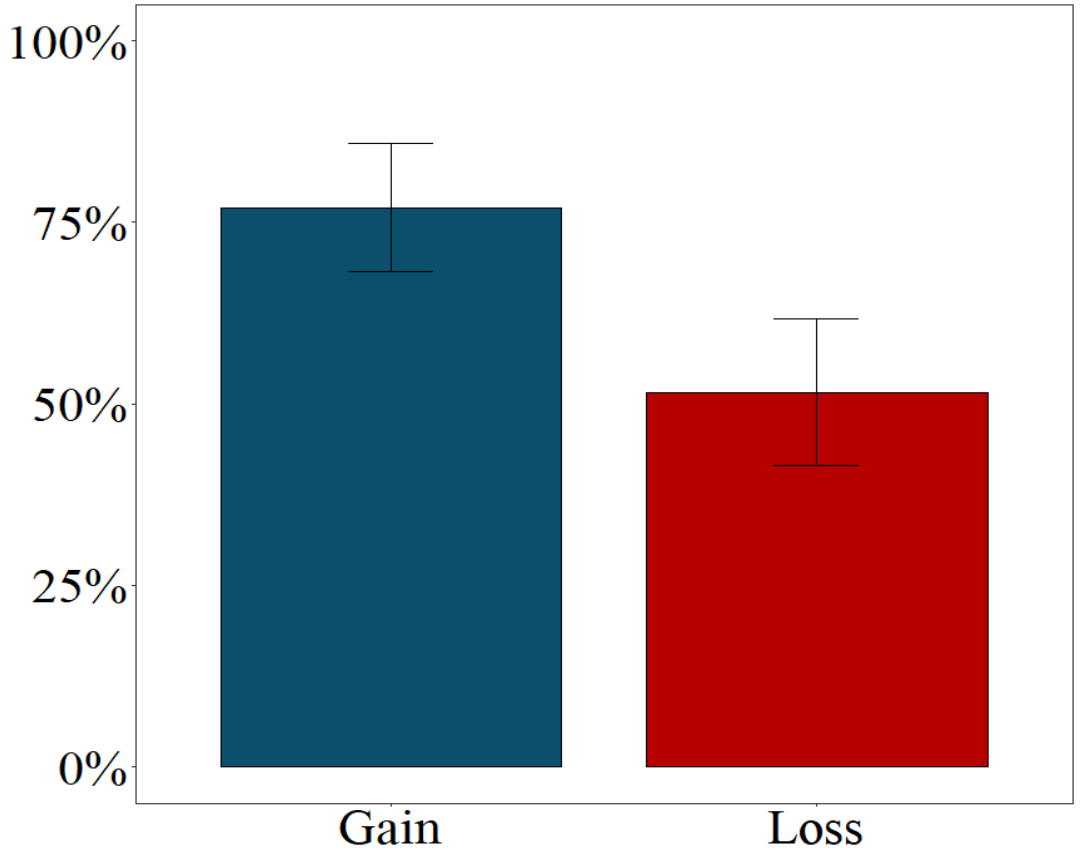
[half get 15, half get 10]

Revoke 5 Shekels from all

[10 to all]

# Study 3

% Choosing the lottery
(Inequitable yet efficient allocation)




$\chi^2(1) = 12.57$, $p < .001$, *Cramer's* $V = 0.25$

$N = 180$, Student sample

# Summary

- Decision makers are happy to use lotteries to solve equity-efficiency conflicts in gains, but much less so in losses

  → They waste more in losses

- This appears to be driven by different expectations of the recipients' reactions in gains and losses
- Implications for daily life, organizational settings, and public policy

# Thanks! Questions???

**Yair Nahari**

yair.nahari@mail.huji.ac.il

**Alex Shaw**

alex.w.shaw@gmail.com

**Shoham Choshen-Hillel**

shoham@huji.ac.il