Attraction Effect in Risky Choices

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Choosing partner, houses hunting, buying cars...

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- When making choices among options with multiple "aspects", we often compare them attribute by attribute (Tversky, 1972)
- A choice between two options is affected by the introduction of a third option (Trueblood et al, 2014)

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In this study, we focus on the attraction effect!

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- Range decoy
  - The decoy is worse than the focal option in its **strong** attribute
- Range-Frequency decoy
  - The decoy is worse than the focal option in **all** attributes

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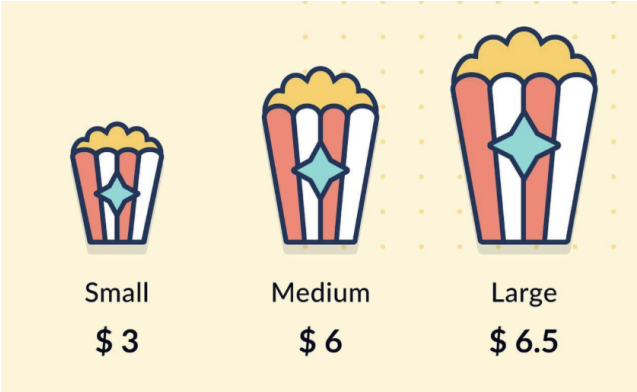
- Different theories may predict different choices given the same choice set

Application of Attraction Effect

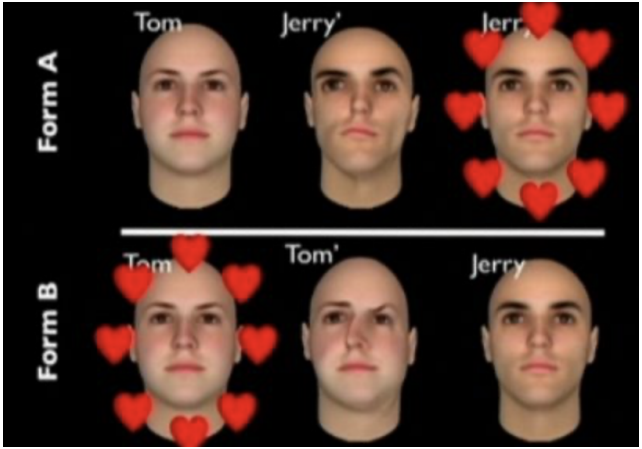
In pricing



Source: @UXMental https://www.instagram.com/p/CsG2uBCNxO6/

Application of Attraction Effect

In how we evaluate "beauty"



Source: @Dan Ariely https://www.youtube.com/watch?v=9X68dm92HVI

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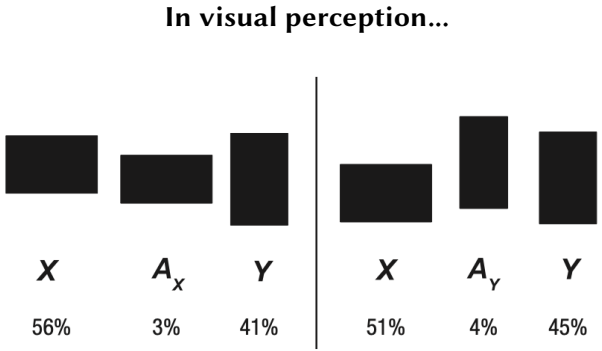

Trueblood, J. S., Brown, S. D., Heathcote, A., & Busemeyer, J. R. (2013). Not just for consumers: Context effects are fundamental to decision making. Psychological science, 24(6), 901-908.

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What are the settings that are simplistic enough to fit into these narrow criteria?

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Good old lottery choices :)

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Choices among lotteries are essentially tradeoffs between these two attributes

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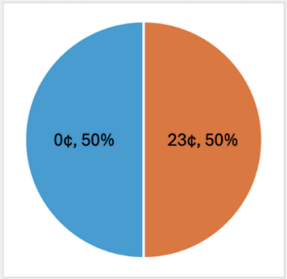
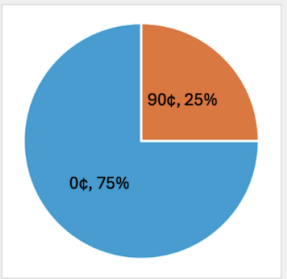
- Decisions are incentivized!

*All studies preregistered on AsPredicted

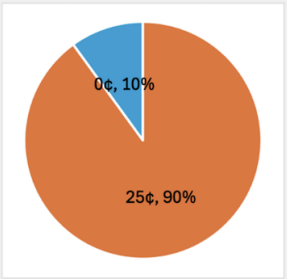
Study 1: Control Trails



50% chance of 23¢
0¢ otherwise



25% chance of 90¢
0¢ otherwise



90% chance of 25¢
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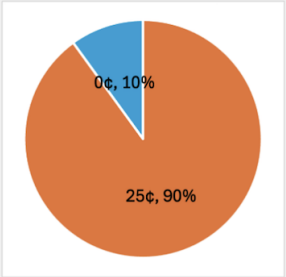
Study 1: Treatment Trails: targets Safe lottery



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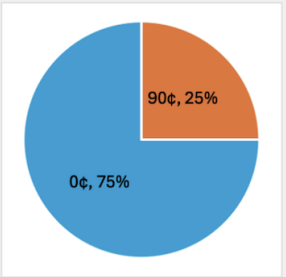

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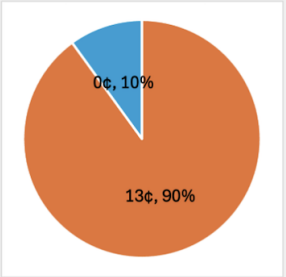

90% chance of 13¢
0¢ otherwise

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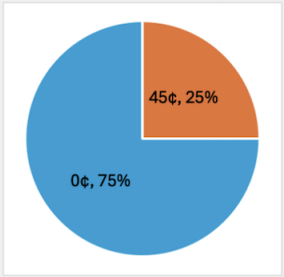
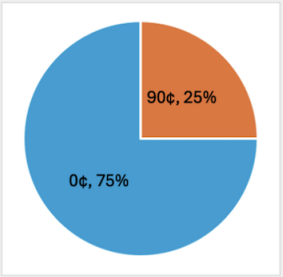


25% chance of 45¢
0¢ otherwise



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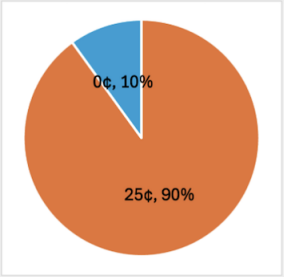

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- Exclude participants who choose the decoy more than 5 times

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Different levels of tradeoffs

- 95% of 20¢; 20% of 95¢
- 90% of 25¢; 25% of 90¢
- 85% of 30¢; 30% of 85¢
- 80% of 35¢; 35% of 80¢
- 75% of 40¢; 40% of 75¢

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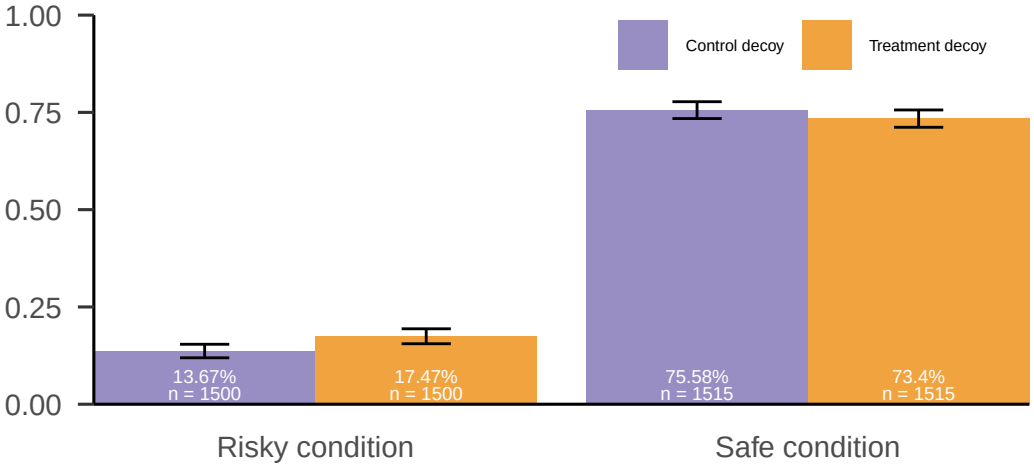
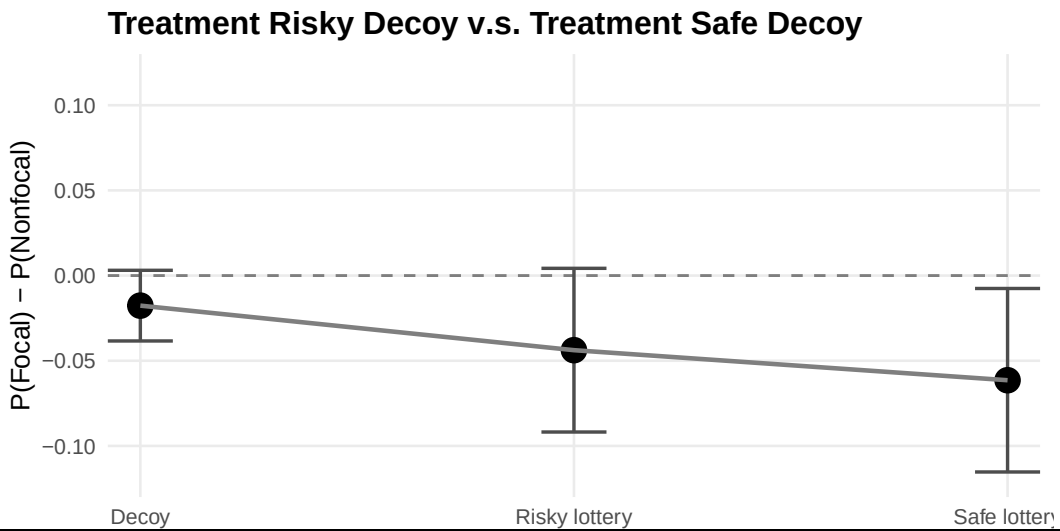
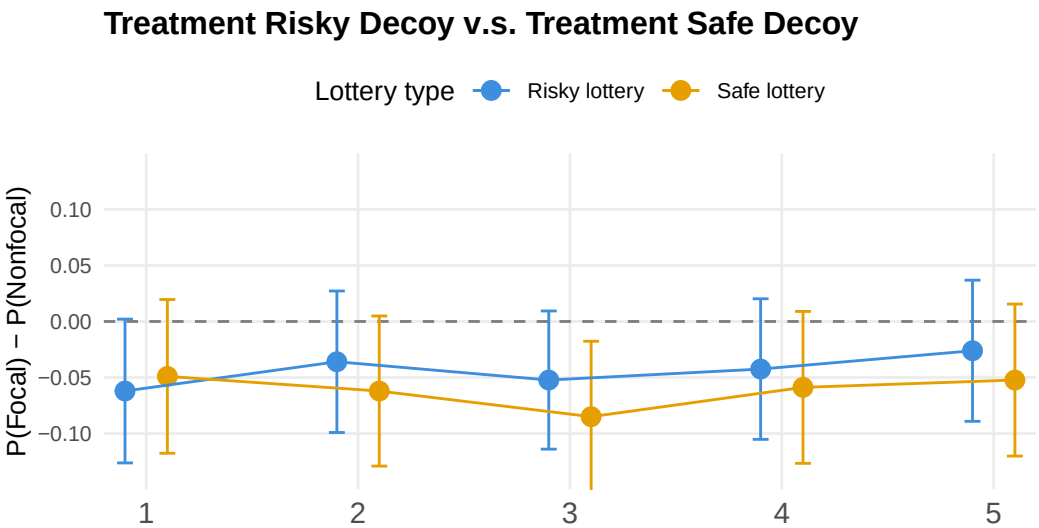
Study 1: Seperated by Conditions



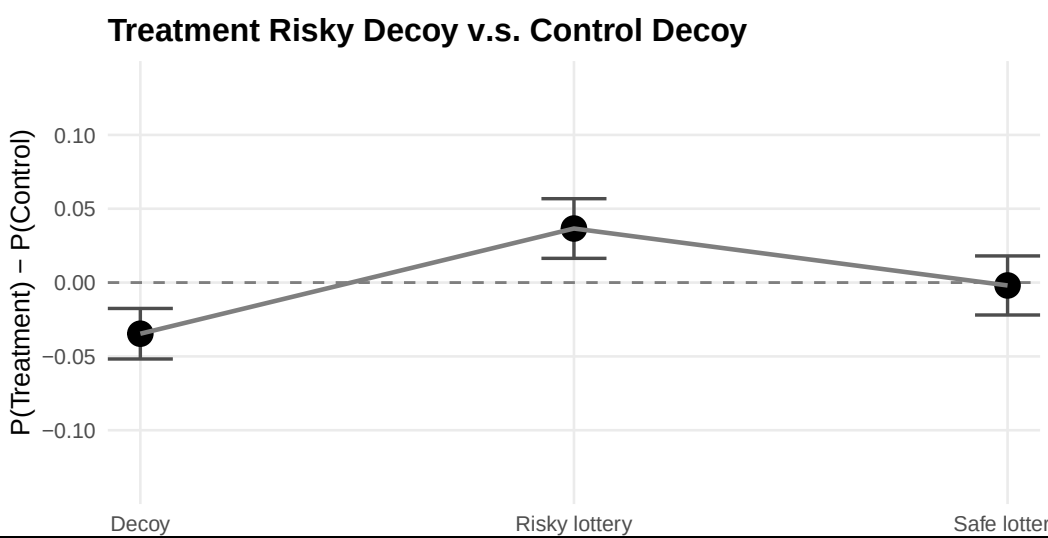
Study 1: No and Opposite Preference Reversal (Treatment)



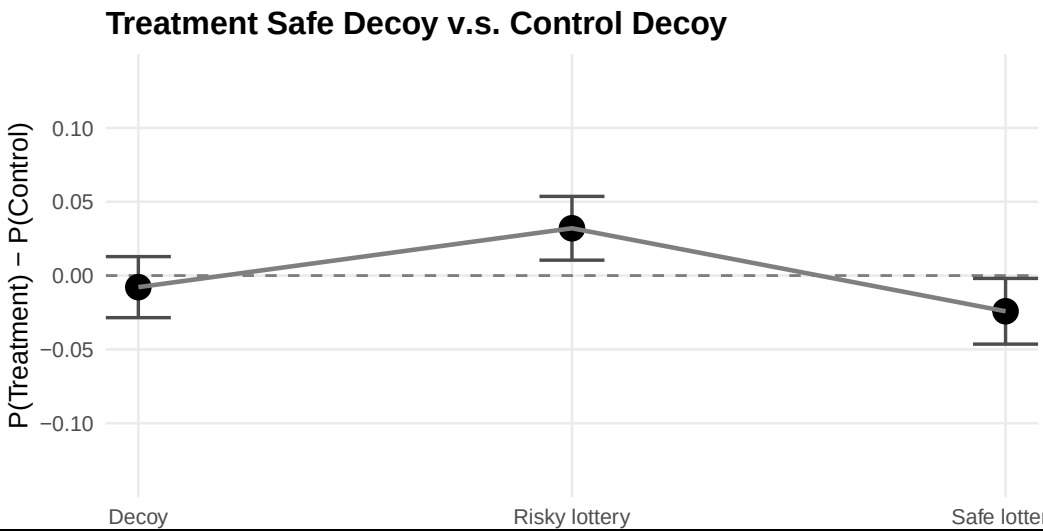
No Heterogenous Effect Across Pairs



Study 1: Risky Decoy: Treatment v.s. Control



Study 1: Safe Decoy: Treatment vs. Control



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Control decoy is "inadvertently" dominated by safe lottery on both attributes

- Control decoy *boosted* safe choices more than safe decoy
- Must decoys be strictly dominated in *both* attributes?
- Couldn't similarity itself trigger comparison?

Study 1: Make One Attractive or Avoid Worst Option?

47% $23 v.s. 19% $57

- Hard to tell which has higher EV
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Moving away from single choice DV

- Elicit WTP?
- Ask for rankings?
- Allow multiple choices?

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Next step?

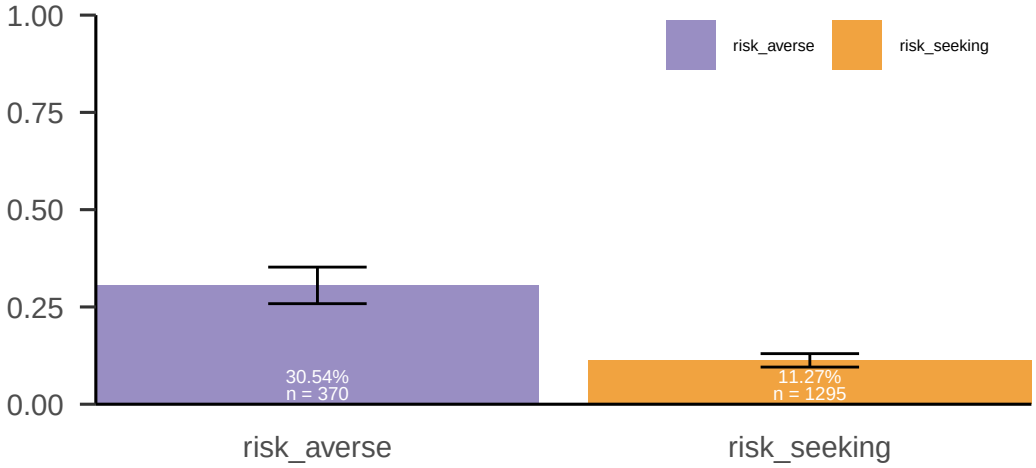
- Refine experimental design — a better control?
- More experimental or theoretical?
- Test in more realistic settings?

Study 1: Frequency table

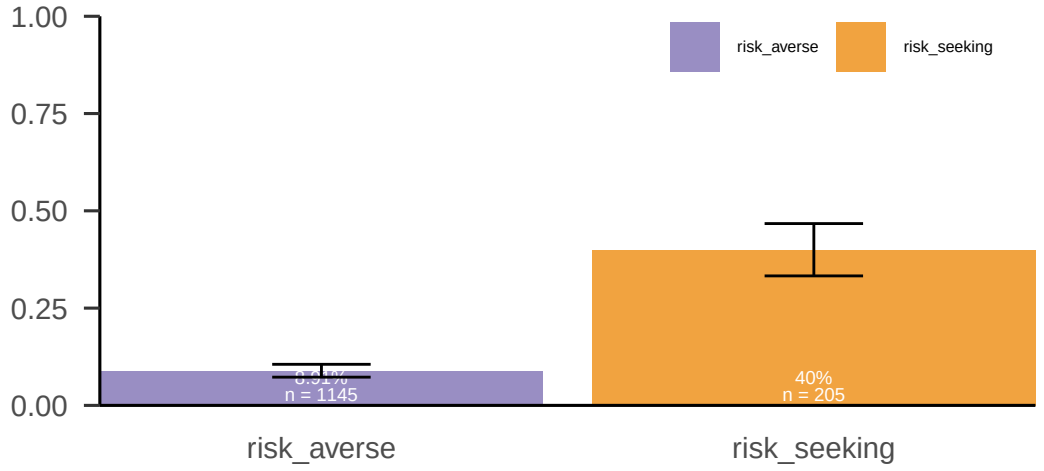
Treatment	Condition	Decoy	Risky	Safe
Control	Safe	6.1%	18.6%	75.2%
Treatment	Safe	5.4%	21.8%	72.8%
Control	Risky	7.1%	13.8%	79.2%
Treatment	Risky	3.6%	17.5%	79%

*Full sample without excluding any participant

Appendix: Switch to Focal, Conditioned on Not Choosing Focal in Control



Appendix: Move away from Focal, Conditioned on Already Choosing Focal in Control



Appendix: Heat Map – Safe Condition

Table 1: Safe condition

Control	Decoy	Risky	Safe
Decoy	10.5%	59.3%	30.2%
Risky	6.7%	62.7%	30.6%
Safe	3.8%	8.9%	87.2%

Appendix: Heat Map – Risky Condition

Table 2: Risky condition

Control	Decoy	Risky	Safe
Decoy	10.2%	38.6%	51.1%
Risky	3.4%	56.6%	40%
Safe	1.7%	9.3%	89%