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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Attraction Effect

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  - The decoy is worse than the focal option in its **weak** attribute
- 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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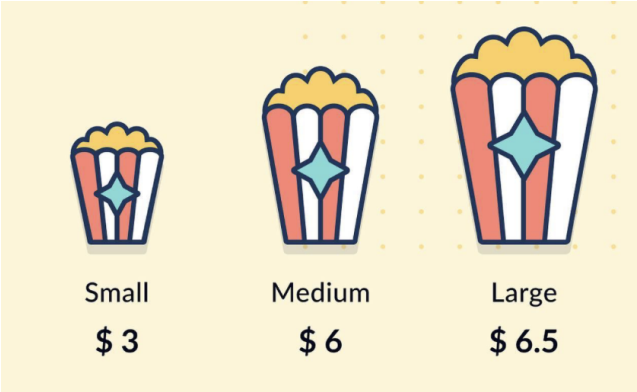
- Often assume these different types of decoys work in the same way
- Different theories may predict different choices given the same choice set

Application of Attraction Effect

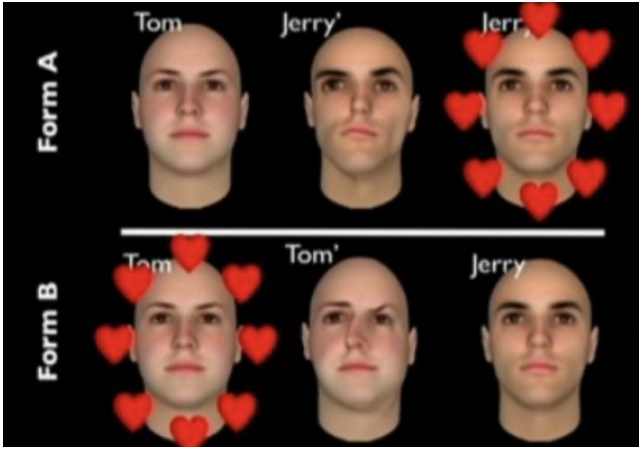
In pricing



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

Application of Attraction Effect

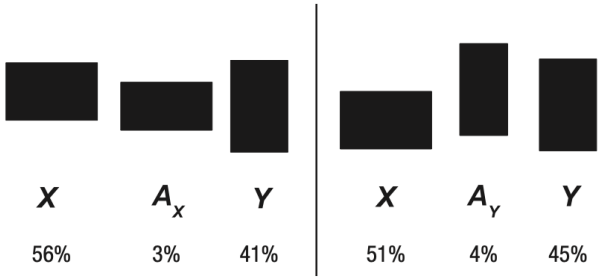
In how we evaluate "beauty"



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

Application of Attraction Effect

In visual perception...



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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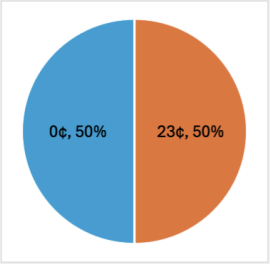
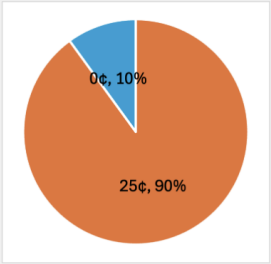
- Decisions are incentivized!

*All studies preregistered on AsPredicted

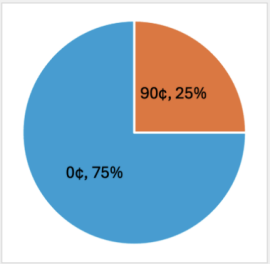
Study 1: Control Trails



50% chance of 23¢
0¢ otherwise

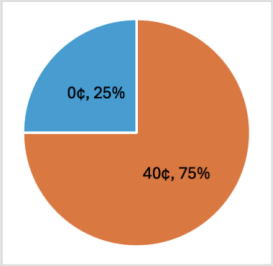


90% chance of 25¢
0¢ otherwise

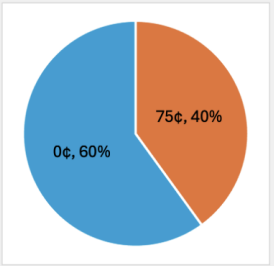


25% chance of 90¢
0¢ otherwise

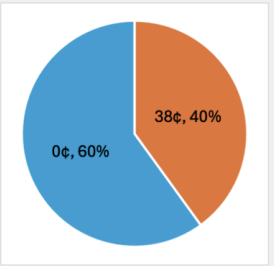
Study 1: Treatment Trails



75% chance of 40¢
0¢ otherwise



40% chance of 75¢
0¢ otherwise



40% chance of 38¢
0¢ otherwise

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  - **Risky** Treatment Decoy targets the risky lottery
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  - **Risky** Treatment Decoy targets the risky lottery
  - **Safe** Treatment Decoy targets the safe lottery
- 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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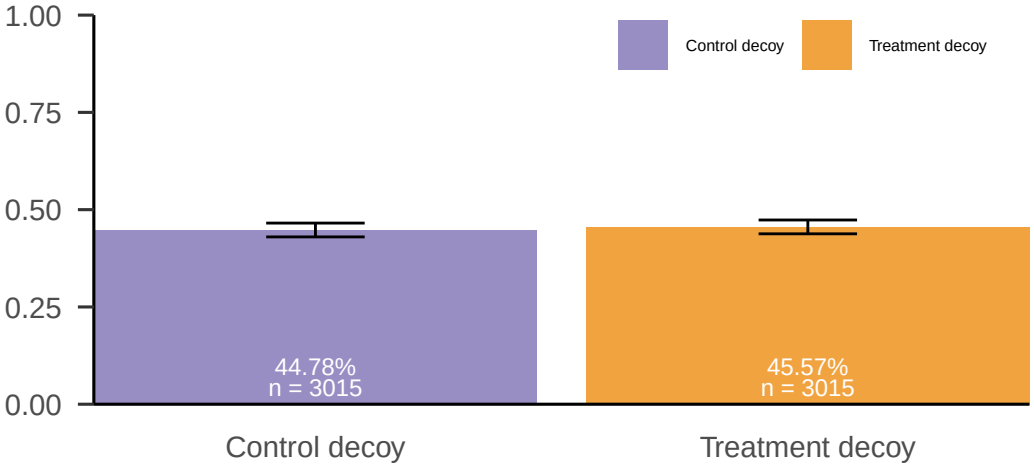
- Does the effect depend on specific characteristic in lottery pairs?
- Whether Treatment Decoy is better at enhancing risky lotteries or safe lotteries?

Study 1: Balance Test (Control trails)

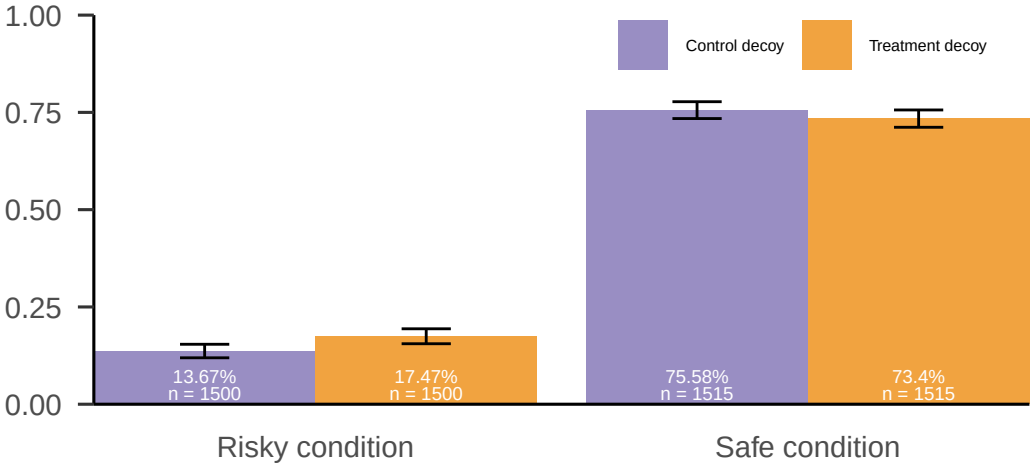
Condition	Decoy	Risky	Safe
Safe	5.7%	18.7%	75.6%
Risky	5.9%	13.7%	80.5%

*Full sample without excluding any participant

Study 1: Proportion of Choosing Focal Lotteries



Study 1: Seperated by Conditions



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%

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More risky lotteries are chosen while less decoy lotteries are chosen

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Risky condition

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Safe condition

- Meanwhile, the decoy turns people from the safe lottery to the risky one
- People are more likely to take risk when presented with two safe lottery

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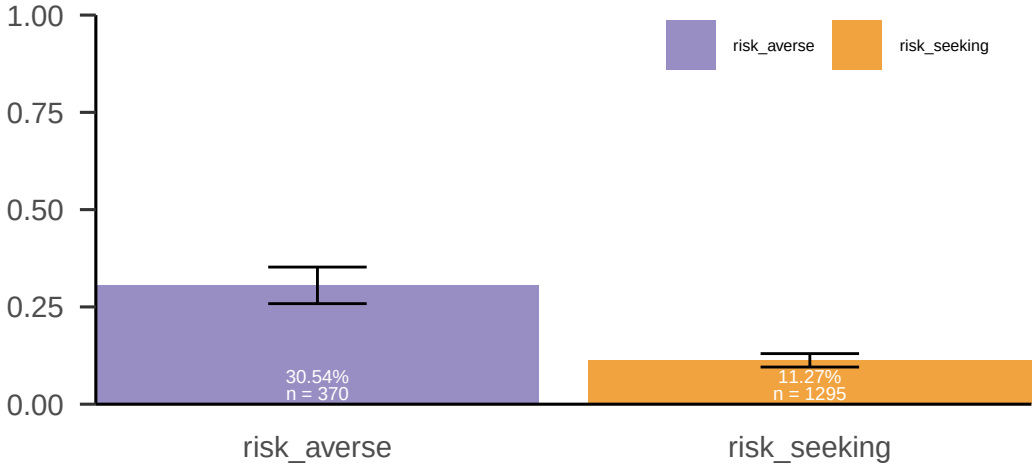
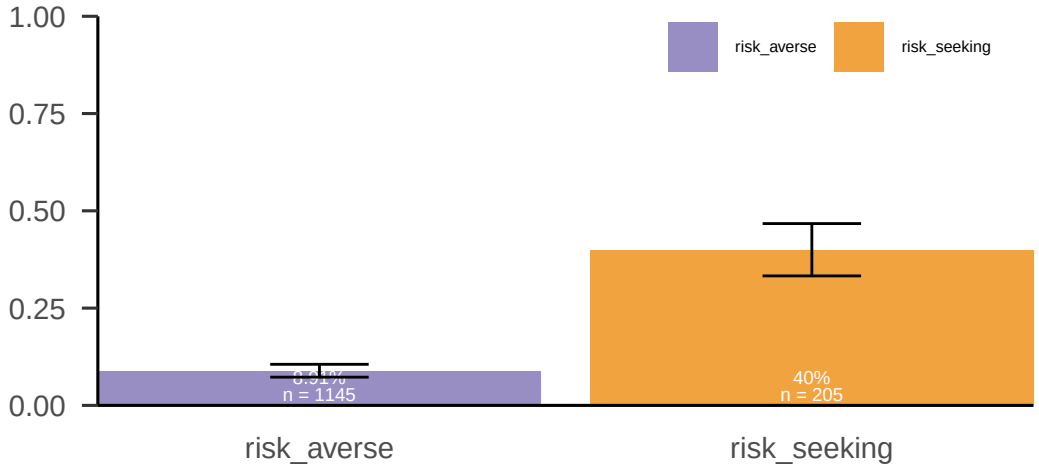
Next step?

- What can be improved in the current design?
- Make it more of an experiment paper or a theory paper?
- Test it in a more externally valid setting?

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%