



# Testing the Influence of Distance to the Target on the Compromise Decoy Effect

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## Introduction

The compromise effect (Simonson, 1989) refers to a tendency for participants to prefer an alternative made to look like a compromise between two more extreme alternatives.

As the compromise decoy is placed farther away in the choice set from the target, what will happen to the compromise effect?

**Decision Field Theory (Roe, Busemeyer, & Townsend, 2001):** Compromise effect should decrease as distance between target and decoy increases.

**Rational Choice in a Noisy Environment (Howes, Warren, Farmer, El-Deredy, & Lewis, 2016):** Compromise effect should increase as distance between the target and decoy increases.

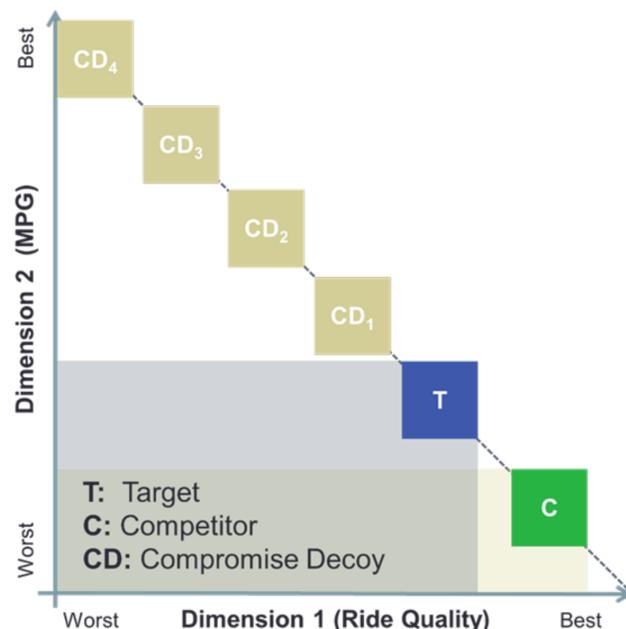


Figure 1. Example product space for choice sets when targeting alternative with the highest value on Dimension 2.

## Method

### Participants

- 146 undergraduates from SIUE received course credit for participation
  - $M_{age} = 19.42$  ( $SD_{Age} = 3.88$ )
  - 80.8% Female

### Stimuli

- Consumer choice sets (i.e. cars, computers, televisions, ect.) identical to Pettibone (2012)
- Alternatives were described on two dimensions (i.e. MPG and Ride Quality for cars)
- Each set contained two alternatives with equal EU and a compromise decoy that targeted (extended the range on both dimensions) either of the other alternatives in the set

### Design

- 4 (Distance of decoy to target) X 2 (Target of Decoy) within-subjects design
- Distance was manipulated within subjects in four equal steps:
  - CD 1: 50% farther from T on both dimensions than distance between T and C
  - CD 2: 75% farther from T on both dimensions than distance between T and C
  - CD 3: 100% farther from T on both dimensions than distance between T and C
  - CD 4: 125% farther from T on both dimensions than distance between T and C
- Target was manipulated within subjects, with a decoy extending the range for either of the equally attractive alternatives
- Participants saw 10 three items choice sets four times (40 total trials), once with a compromise decoy at each possible distance in a randomized order

## Results

### Main Effect of Target-

- Participants were more likely to choose the target (54.21% of trials) than the competitor (26.25%) across all distance conditions ( $F(1,435) = 106, p < .001$ , partial  $\eta^2 = .42$ )

### Interaction of Distance by Target-

- As the distance increases, preference for the target increased while preference for the competitor remained flat ( $F(3,435) = 9.38, p < .01$  partial  $\eta^2 = .04$ )
- Repeated contrasts between distance conditions were significant for all except distance 1 vs. 2

### Decoy-

- Preference for the decoy declines as distance increases ( $F(3,435) = 20.73, p < .001$ , partial  $\eta^2 = .13$ )

### Deliberation Time-

- The amount of time spent making a decision did not increase with increases in distance ( $F = 1.57$ )

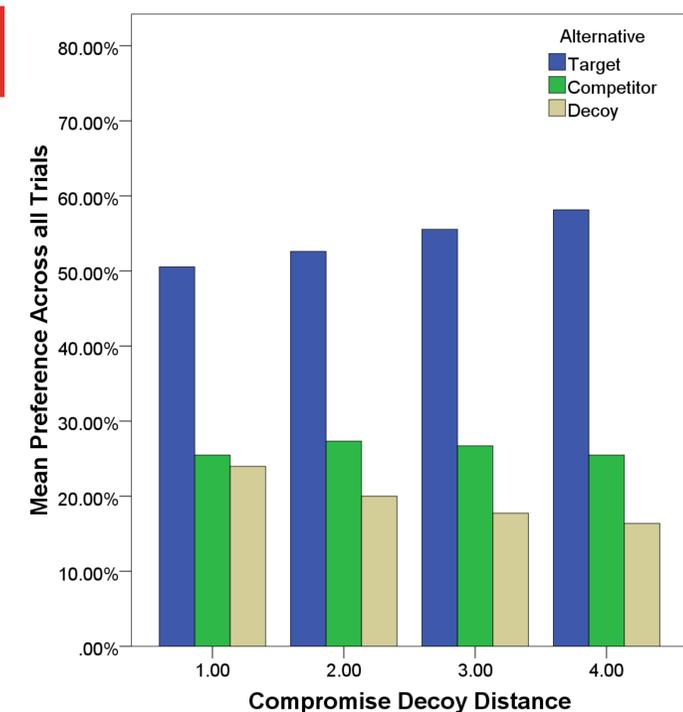


Figure 2. Mean preference (%) for alternatives across all trials as a function of the distance of the compromise decoy from its target (N = 146, Within-subjects design).

## Conclusions

Overall, results support the predictions of Howes et al. (2016) that the compromise decoy effect will increase as distance increases. This lends support to their argument that much of choice behavior is the result of maximizing in a noisy environment. It is possible, however, that participants are re-scaling the product space with each presentation of a choice set, and thus could still be behaving according to DFT (Hotelling, Busemeyer, & Li (2010)). To explore this possibility, a second experiment will be run where the CD<sub>4</sub> (the farthest decoy) set will be presented first in order to try to set the maximum range for participants when they encounter the other stimuli.

## References

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