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#### **Authors**

Veinott, Beth  
Jessup, Ryan K.  
Todd, Peter M.

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# Leaving the Store Empty Handed: Decision Field Theory and Choice

Beth Veinott (eveinott@indiana.edu), Ryan K. Jessup (rkjessup@indiana.edu)  
Peter M. Todd (pmtodd@indiana.edu)

Indiana University, Department of Psychological and Brain Sciences,  
1101 E. 10<sup>th</sup> St., Bloomington, IN 47405 USA

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## Too Much Choice Effect

Economic models of choice suggest that more choice is better. People tend to prefer more options and seek them out. Intuitively, it makes sense that the more options one has, the more likely one will be to find the best alternative. However, are more options always better?

In an intriguing counter-example, Iyengar and Lepper (2000) observed that people shopping in a grocery store were more likely to purchase jam when confronted with a sample display of six jams than a sample display of 24 jams. Here, more options increased the likelihood that people would leave the store empty-handed. Iyengar and Lepper referred to this as the too-much-choice effect (TMC). However, the TMC effect has not been consistently observed in situations where it would be expected (e.g., Chernev, 2003). Our research goal is to understand what decision mechanisms may underlie the appearance or absence of the effect: Why do people leave the store empty-handed sometimes and not other times?

We evaluated several different psychological explanations of the TMC effect using a unified theoretical framework, Decision Field Theory (DFT; Busemeyer & Townsend, 1993). DFT is a random walk model of forced choice in which preference for an option accumulates overtime, and the first option to cross the decision threshold is chosen. Extending DFT to account for the “leaving the store empty-handed” (i.e., no-choice) outcome allows us to evaluate different explanations and identify conditions under which the effect occurs.

## Methods

Three explanations of the TMC effect were implemented in the model and evaluated.

*Preference/Lead change:* If the options are too difficult to differentiate (seem too similar), then people may switch back and forth between their most-preferred option and consequently decide not to choose any.

*Time out:* If the decision is taking too long relative to the payoff, then people may also leave empty handed.

*Extra option:* If not choosing is identified as a distinct option, then when people’s preference for it reaches the decision threshold first, people will leave empty-handed.

In each simulation, we varied only two parameters to produce the effect: the decision boundary and a method-specific parameter. Each method was simulated over a large parameter value range. We also examined the effect of varying the distribution of the values of the options between low variance (roughly uniform) and high variance (exponential distribution).

## Results and Discussion

Based on these simulations, we identified two psychological mechanisms that differentially predicted the TMC effect: preference change and time out. These mechanisms provide explanations for why TMC is observed sometimes, but not others. Preference change predicted changes in the presence and size of the TMC effect only with a uniform distribution of options. The Time out method, predicts the TMC effect using either distribution of option values. The extra option method did not predict the TMC effect.

Ironically, what leads people to the store may also make them leave empty handed—sometimes. DFT makes testable predictions about conditions under which the TMC effect occurs or does not occur and these are guiding our future behavioral studies.

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