

When more is less:

Incorporating irrelevant information into judgments and decisions can be less effortful than ignoring it

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Background

There is a widespread assumption that decision effort can be conserved by considering less information.

“A heuristic is a strategy that ignores part of the information, with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods.”

-Gigerenzer & Gaismaier (2011)

But, we also know that inhibition is effortful (Thomson & Oppenheimer, in press).

Research Questions

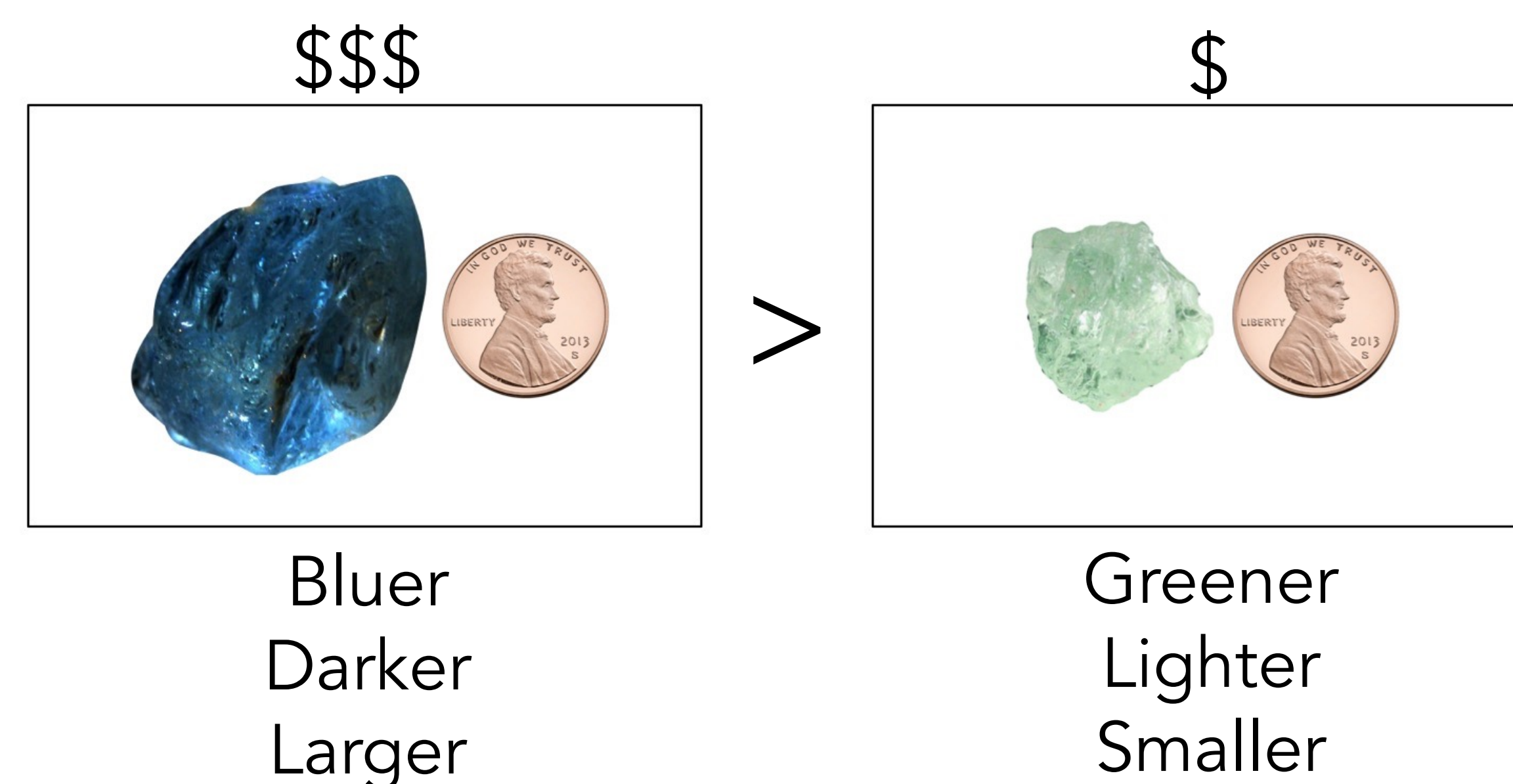
1. Are people always capable of ignoring extraneous information?
2. Assuming people can ignore the information, does ignoring it always conserve effort, or could it consume more effort?

References

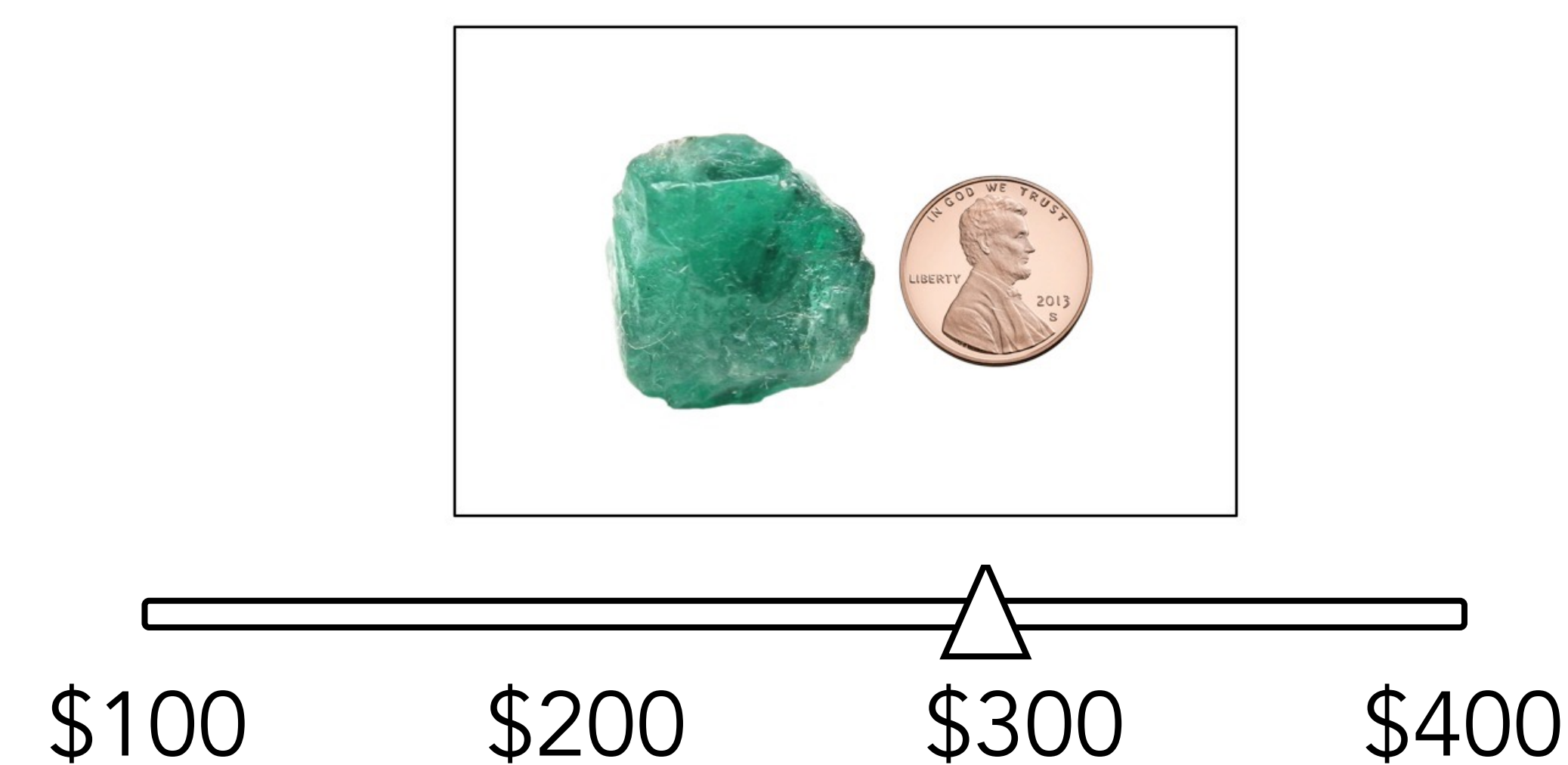
Gigerenzer, G. & Gaissmaier, W. (2011). Heuristic decision making. *Annual Review of Psychology*, 62(1), 451-482.
Thomson, K. S. & Oppenheimer, D. M. (in press). The (effort) elephant in the room: What is effort, anyway? *Perspectives on Psychological Science*.

Method: Phase 1 (topaz)

369 Turkers were instructed how to estimate topaz gemstone prices on the basis of hue, darkness, and size (using visual examples like those below).



Next, for 135 training trials Ps estimated each stone's price, then received correct price feedback.



Method: Phase 2 (aquamarine)

Ps were then instructed that aquamarine valuation was the same as topaz, except...

1. Cue relevance: Some Ps instructed that aquamarine hue was irrelevant (blue and green valued equally)
2. Cue knowledge: Some Ps would not know the aquamarine stones' hue (photos in greyscale)

2x2 experimental design

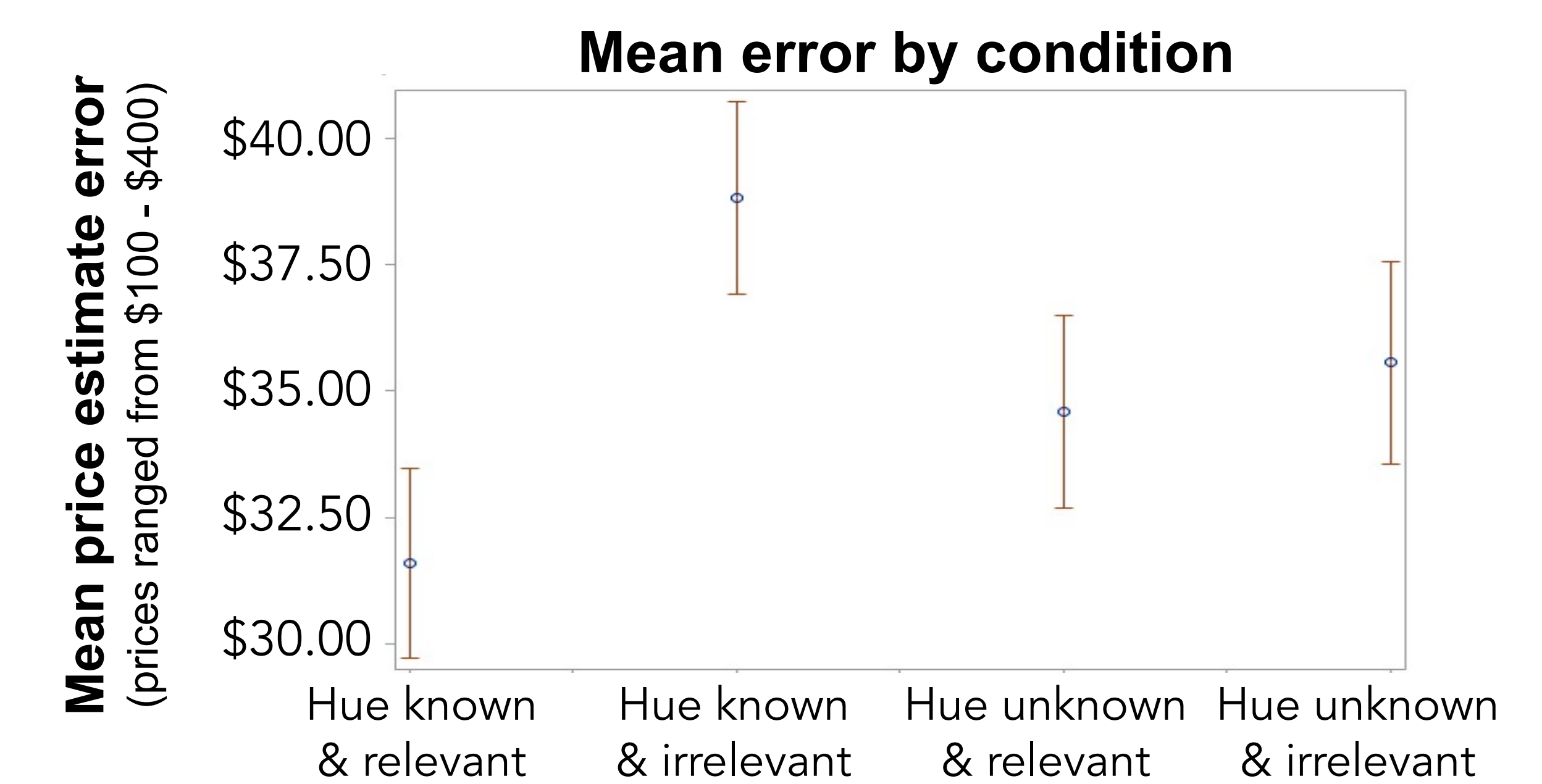
	Cue Relevant	Cue Irrelevant
Cue Known	“Known-and-relevant”	“Known-but-irrelevant”
Cue Unknown	“Unknown-and-relevant”	“Unknown-and-irrelevant”

Results: Inhibition Ability

Price estimates were still influenced by hue when it was known-but-irrelevant.

- Known-but-irrelevant hue influenced estimates **less** than known-and-relevant hue, $\gamma = -.55$, $t(365) = 14.32$, $p < .001$.
- Known-but-irrelevant hue influenced estimates **more** than both unknown-and-relevant hue, $\gamma = -.12$, $t(365) = -3.04$, $p = .003$, and unknown-and-irrelevant hue, $\gamma = -.12$, $t(365) = -2.93$, $p = .004$.

Estimation accuracy was **lowest** for the known-but-irrelevant cue.



Results: Inhibition Effort

RTs for known-but-irrelevant hue were longer than RTs for unknown-and-irrelevant hue, $\gamma = 0.088$, $t(365) = -1.97$, $p = .049$, but **did not differ** significantly from RTs for known-and-relevant or unknown-and-relevant conditions.

Discussion

- Judges could not completely ignore the cue of interest (hue) even though they knew it wasn't relevant.
- Attempting to ignore the irrelevant cue made judges less accurate.
- Attempting to ignore an irrelevant cue did not conserve effort. Results were mixed regarding whether it incurred more effort.