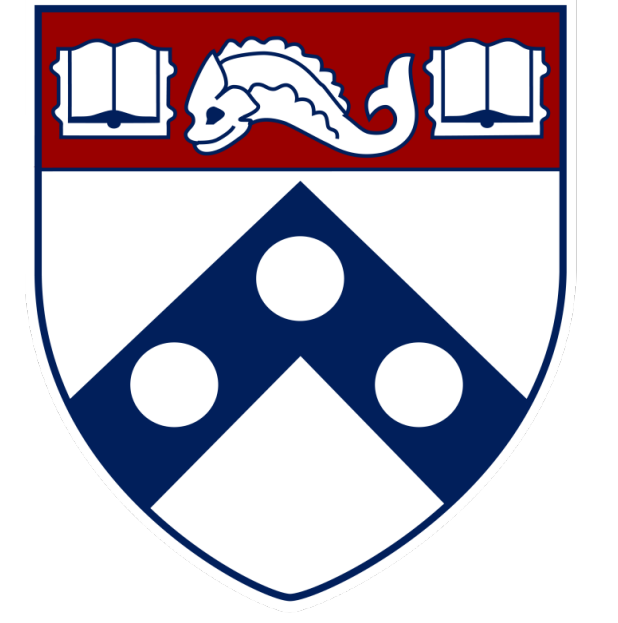


How Reality Could be Otherwise: Counterfactual Thinking and Preference



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Introduction

- ◆ Humans often think about counterfactual possibilities of an experienced reality and imagine how it could be otherwise (Kahneman & Miller, 1986).
- ◆ There are infinite alternative possibilities we can imagine, but in practice we only generate a limited set of counterfactual thoughts (Phillips, Morris & Cushman, 2019).
- ◆ We hypothesize that counterfactual thoughts that are more semantically similar to reality and highly preferred are more likely to come to mind.

Methods

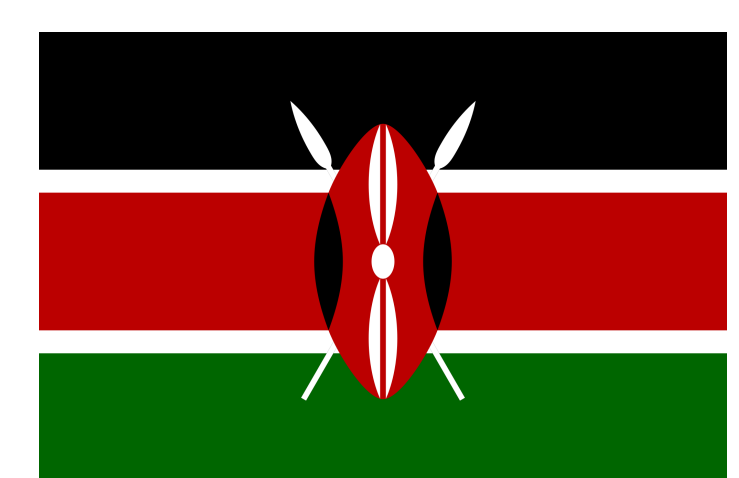
- ◆ Subjects $N = 49$ (ages 18-26, $M = 20.04$, $SD = 1.53$)
- ◆ Online study, two sessions separated by a week.
- ◆ In Session 1, subjects rate how much they would like to work in each of 193 countries in the world.
- ◆ In Session 2, subjects are:
 - told that they received a job offer in one of the four target countries:



Germany



Saudi Arabia



Kenya

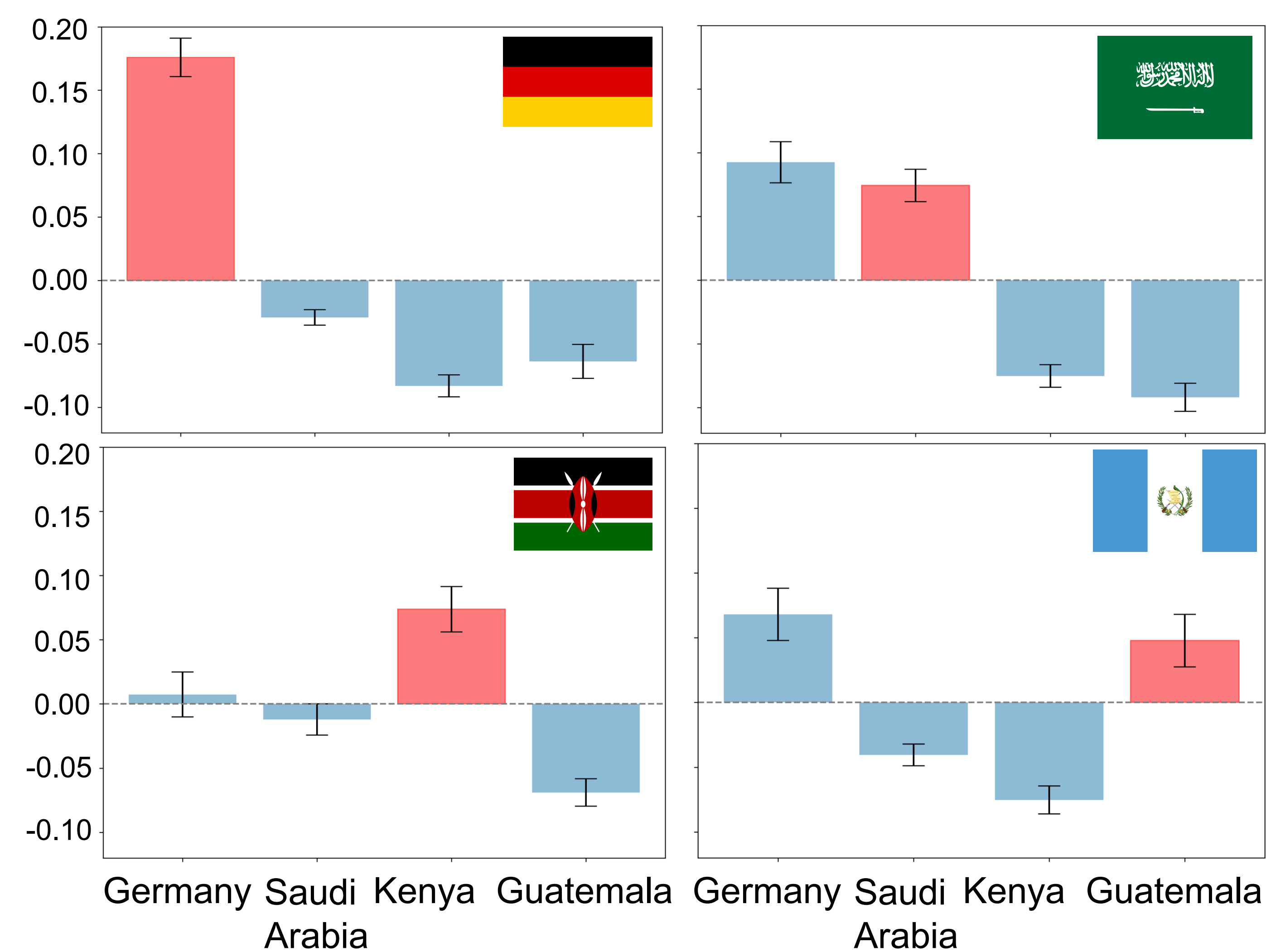


Guatemala

- list 10 other countries that come to mind while thinking about the target country;
- rate how much they would like to work in the target country as well as the 10 counterfactual countries.

Semantic Similarity Effects

We are more likely to imagine counterfactual possibilities that are high in relative semantic similarity to the reality.



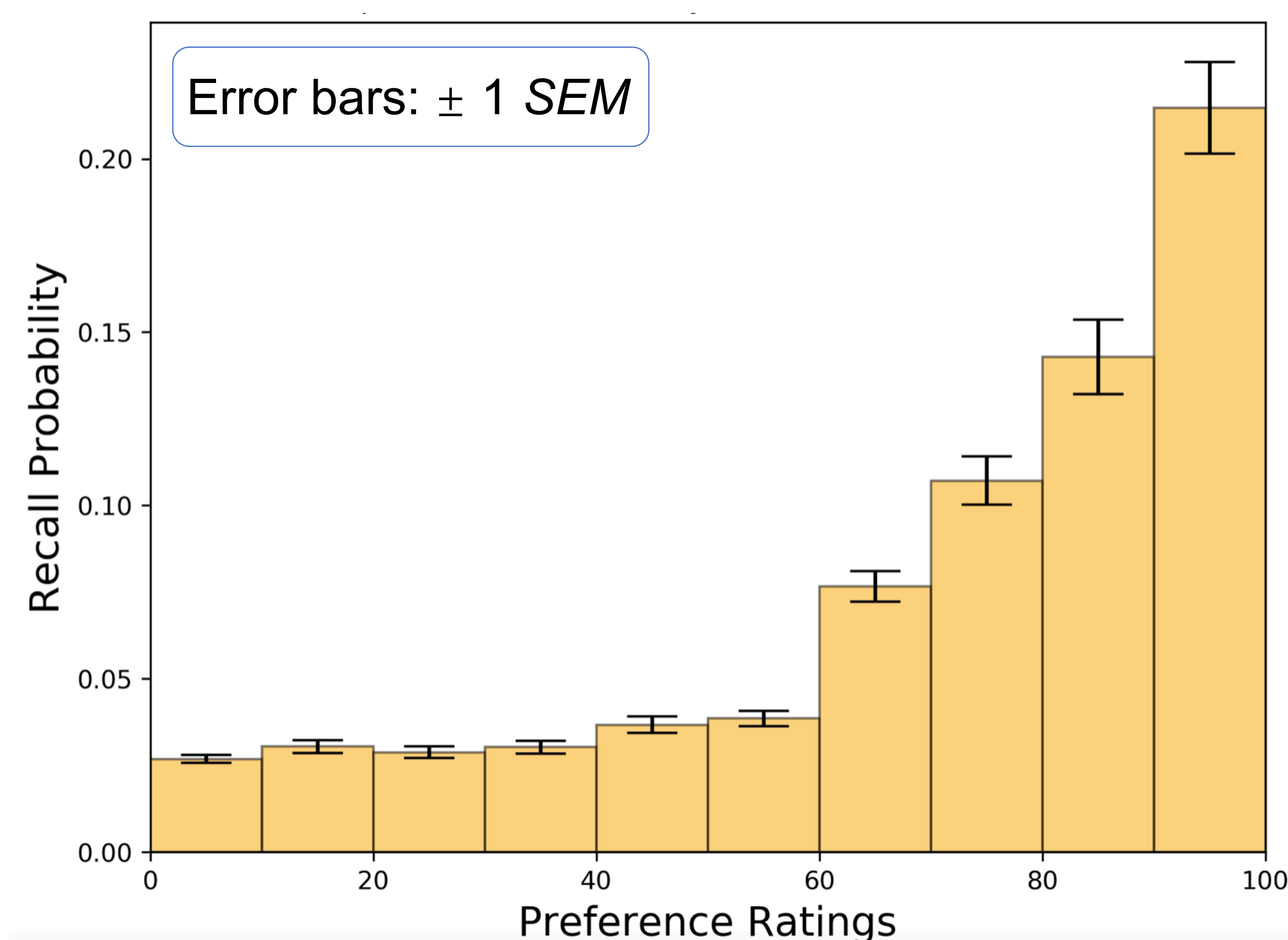
Markov Model Parameters

	Semantic Similarity	Preference	Target Similarity	Frequency	Negative Log Likelihood	P value
Full Model	6.22	0.24	2.21	1.20	2035.33	-
Semantic Similarity Removed	/	0.31	3.71	1.25	2200.74	<.001
Preference Removed	6.45	/	1.92	1.39	2055.49	<.001
Target Similarity Removed	6.79	0.21	/	1.19	2057.57	<.001
Frequency Removed	6.76	0.55	2.33	/	2193.67	<.001

- ◆ We adopted the model from two of the authors' previous work.

Preference Effects

We are more likely to think about countries that we prefer.



Conclusions

- ◆ Counterfactual thoughts are highly influenced by our preferences and other memory-based mechanisms:
 - We are more likely to imagine a possibility when it is more semantically similar to the reality.
 - We are also more likely to imagine a possibility when it is more preferred.

References

- Kahneman, D., & Miller, D. T. (1986). Norm theory: Comparing reality to its alternatives. *Psychological review*, 93(2), 136.
- Phillips, J., Morris, A., & Cushman, F. (2019). How we know what not to think. *Trends in cognitive sciences*, 23(12), 1026-1040.