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Inducing Cognitive Reflection and its Impact on Contradictory Belief Holding

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SROP 2021, University of Louisville

Introduction

Cognitive reflection is the propensity to reflect on one's intuitions.¹ Some people are more likely than others to engage in cognitive reflection. This tendency can be measured with the Cognitive Reflection Test (CRT).²

Cognitive reflection appears to be an important individual difference factor. For example, lower CRT performance has been linked to greater belief in conspiracy theories³ and greater social conservatism.⁴ Hence, it is important to test whether reflection can be induced among people who do not spontaneously engage in it.

The present research will also test whether cognitive reflection is related to yea-yeaing. Yea-yeaing is a form of cognitive inconsistency where one agrees with two contradictory statements.⁵ Yea-yeaing has been linked to authoritarianism⁵ and may support prejudicial thinking.⁶

Research Questions

Q1: Are lower rates of cognitive reflection associated with higher rates of yea-yeaing?

Q2: Do explicit induction techniques increase cognitive reflection?

Q3: If the answer to Q1 and Q2 is Yes, does increasing cognitive reflection produce a decrease in yea-yeaing?

Methods

CRT

- 5 cognitive reflection questions (3 numerical, 2 verbal)
- Ex: "In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half the lake?"
 - Intuitive answer = 24 days
 - Correct answer = 47 days

Yea-yeaing test

- The yea-yeaing test contains 10 pairs of contradictory statements. One statement from each pair will appear on a separate virtual page of the test.
 - Ex: "People are largely responsible for their own outcomes in life." / "Outcomes in life are primarily determined by forces outside of people's control."
- The test will also include filler statements to reduce the salience of contradictory pairs.

Questionnaires

- Political ideology
- Authoritarianism

Each participant will be randomly assigned to one of three conditions:

Feedback:	Prompt:	Control:
CRT + feedback	Prompt + CRT	CRT
Yea-yeaing test	Yea-yeaing test	Yea-yeaing test
Questionnaire	Questionnaire	Questionnaire

Predicted Results

Q1:

- Lower scores on the CRT will be correlated with higher rates of yea-yeaing.

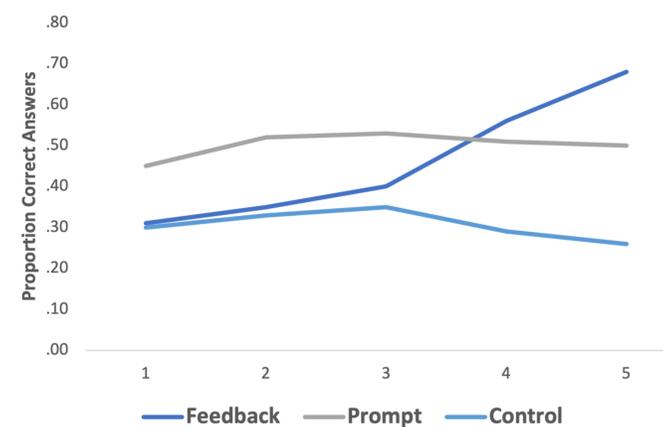
Q2:

- The feedback and prompt conditions will yield better performance on the CRT compared to the control condition

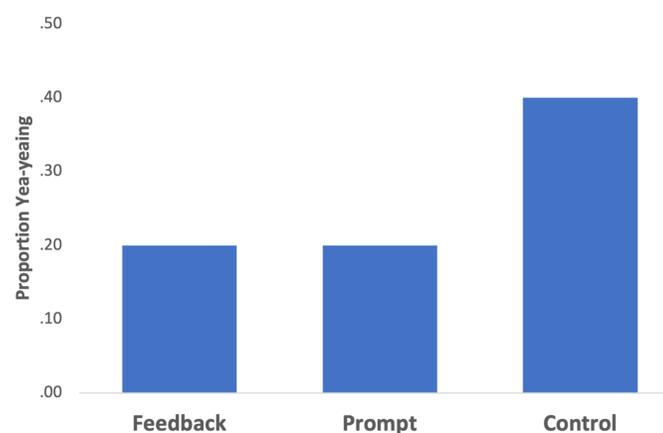
Q3:

- The feedback and prompt conditions will yield lower rates of yea-yeaing compared to the control condition

Potential CRT Results



Potential Yea-Yeaing Results



Potential Implications

- If our hypotheses are correct, this study:
- Will provide evidence that cognitive reflection can be induced.
 - Could be a way to promote cognitive reflection among lawmakers and citizens and decrease political polarization. Inducing cognitive reflection could generate a more logical basis from which to create compromise.
 - Could provide a way to improve critical thinking which could be applied to stereotypes and prejudice.

Future Research

- This study could be the first in a series of cognitive reflection experiments.
- This method could be used to study the impact of induced cognitive reflection on stereotyping and prejudice.
- The duration of induction could be tested (short- vs. long-term change).

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