# Behavior explanation - Experiment 1A replication - May 2020 (#41867)

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**1) Have any data been collected for this study already?**
No, no data have been collected for this study yet.

**2) What's the main question being asked or hypothesis being tested in this study?**
This is a direct replication (with minor modifications) of a previously conducted experiment. The hypothesis remains the same: when judging explanations of other people's behavior, subjects will rate explanations that are "rational" and "simpler" (as defined by our computational model) to be more satisfying.

**3) Describe the key dependent variable(s) specifying how they will be measured.**
Same as original experiment: Subjects will rate how satisfying each explanation is on a scale from 1 (very bad explanation) to 7 (very good explanation).

**4) How many and which conditions will participants be assigned to?**
3 within-subjects conditions. The conditions are identical to the original experiment. They vary in where the person described in the story sat in a row of chairs relative to three other people. The only difference between this replication and the original experiment is that the original was between-subjects.

**5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.**
Analysis 1: A Bayesian ordinal regression on explanation rating, using condition and explanation as fixed effects and subject as a random effect. We will then conduct several specific hypothesis tests:

(1) Whether the coefficients assigned to the condition factors are significantly different from zero, to test whether people made different judgments across conditions
(2) To test whether subjects took simplicity into account when judging explanations:
- Whether the coefficient for the "Near A" explanation is significantly greater than the "Near A, Far B, Far C" explanation in Condition 1
- Whether the coefficient for the "Near B" explanation is significantly greater than the "Far A, Far C" in Condition 3

Analysis 2: A Bayesian ordinal regression on explanation rating, using the best-fitting rational support-only model predictions and simplicity-only model predictions (for each explanation in each condition) as fixed effects and subject as a random effect.

We will perform hypothesis tests to see whether the coefficients on rational support and simplicity are significantly greater than 0. This is another way of testing whether subjects took rational support and simplicity into account, respectively, into their judgments.

**6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.**
Subjects who fail an attention check will be excluded from analysis.

**7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.**
We will collect data from at least 85 subjects after exclusions. This was determined using a power analysis based on the original experiment. 85 subjects should provide 95% power to detect an effect half the size of the difference we found between subjects' ratings of the "Near A" and "Near A, Far B, Far C" explanations in the original experiment.

**8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)**
Nothing else to pre-register.