

Partner Effects May Be Weaker Than We Thought. What Does That Mean for Relationship Science?

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Background

- In relationship science, researchers often focus on studying the interpersonal effects among dyads (e.g., romantic couples).
- The **Actor-Partner Interdependence Model (APIM)** is a type of statistical analysis commonly used by relationship scientists to examine dyadic effects: how an individual's variable may affect the other member of the dyad (Kenny et al., 2006).
- APIM simultaneously tests for *actor effects* and *partner effects*:
 - Actor effect:** Partner 1's independent variable on their own dependent variable (e.g., the effect of Partner 1's depression on Partner 1's relationship satisfaction).
 - Partner effect:** Partner 1's independent variable on Partner 2's dependent variable (e.g., the effect of Partner 1's depression on Partner 2's relationship satisfaction).

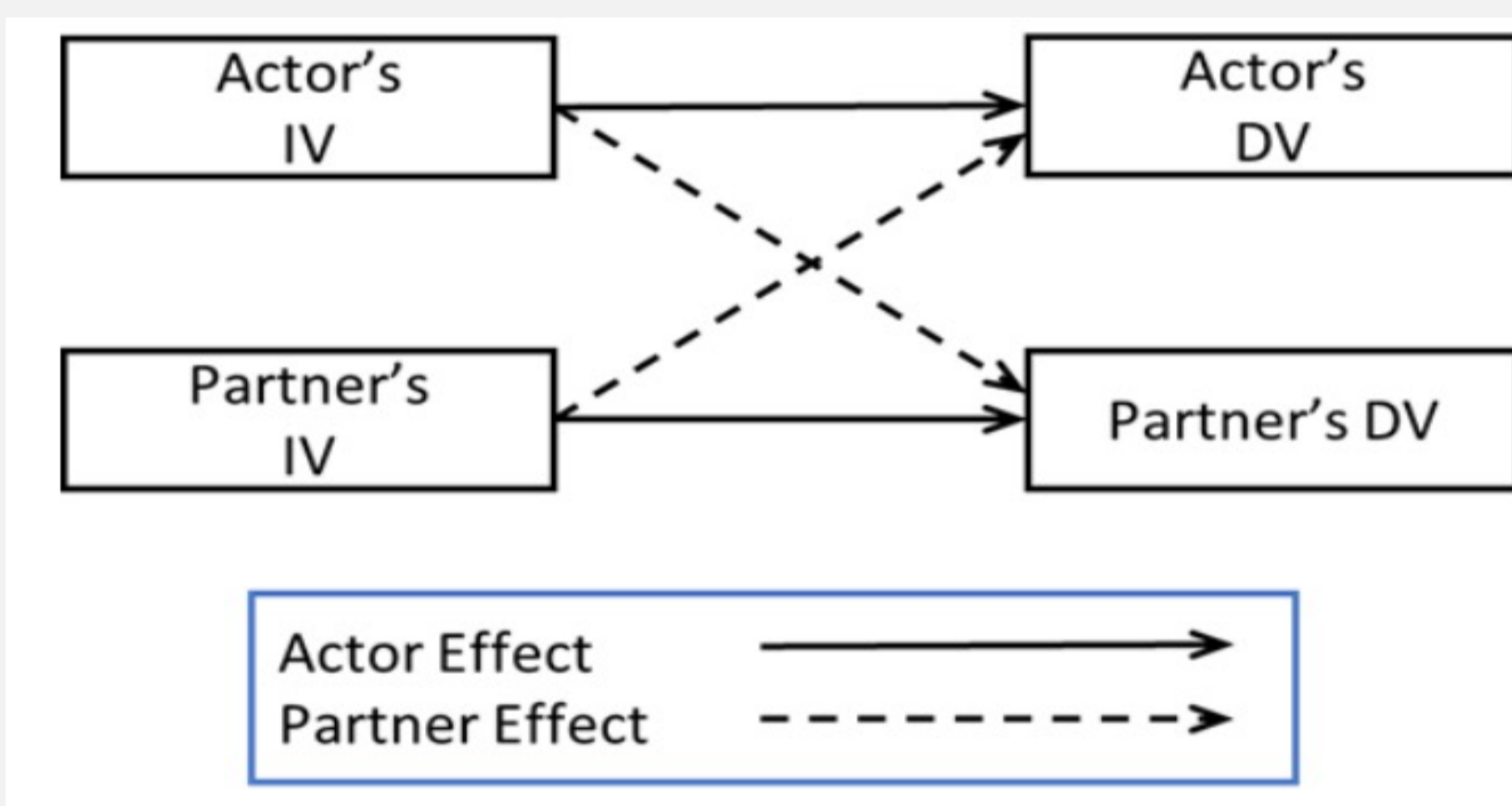


Figure 1. An example Actor Partner Interdependence Model.

- Relationship scientists have used APIM in studies of romantic dyads to assess common relationship outcomes such as relationship quality, satisfaction, commitment, etc.
- However, a recent meta-analysis of 11, 196 romantic couples by Joel et al. (2020) found that partner effects were weak in predicting relationship quality initially and at a follow up.
- More specifically, actor variables predicted 2-4 times more variance than partner-reported variables.

Research Question

Are 'partner effects' significant contributors to dyadic data analysis or are relationship researchers overemphasizing their importance?

Research Goals & Method

- Identify all papers published in 4 top social psychology journals in the last 5 years that used APIM to study romantic couples.
- Extract all actor effects and partner effects in these papers, and determine the range of statistical significance by coding the reported p-values of these effects.
- Conduct p-curve analysis (Simonsohn et al., 2014):
 - Compare distribution of p-values for actor and partner effects with a hypothesized p-curve shape.
 - If distribution of p-values does not follow the hypothesized p-curve shape, it suggests evidence of publication bias.

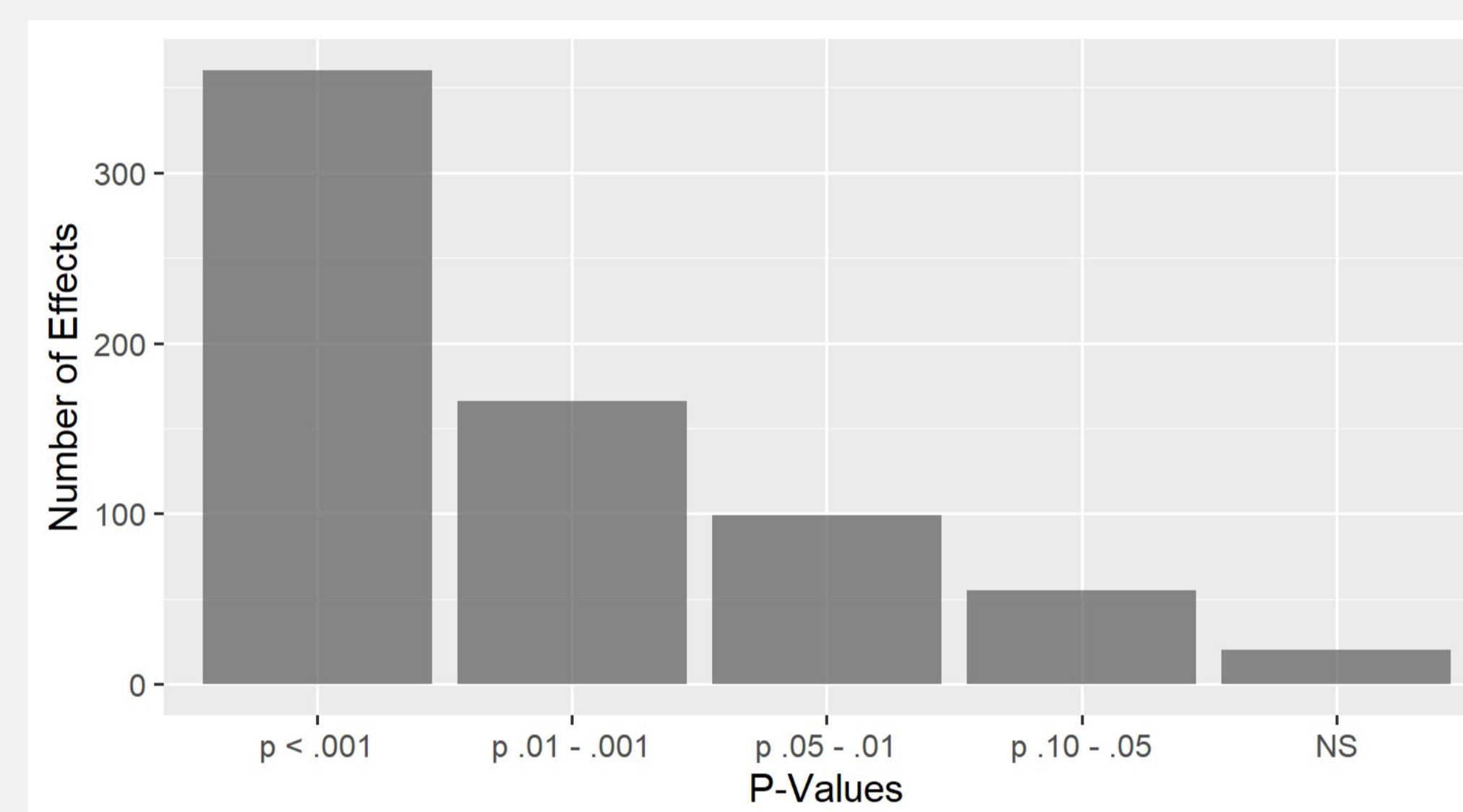


Figure 2. Hypothesized p-curve distribution indicating no publication bias

Data Analysis & Results

- A total of 164 papers were identified and extracted.
- From this, a total of 1748 actor effects and 1640 partner effects were coded.

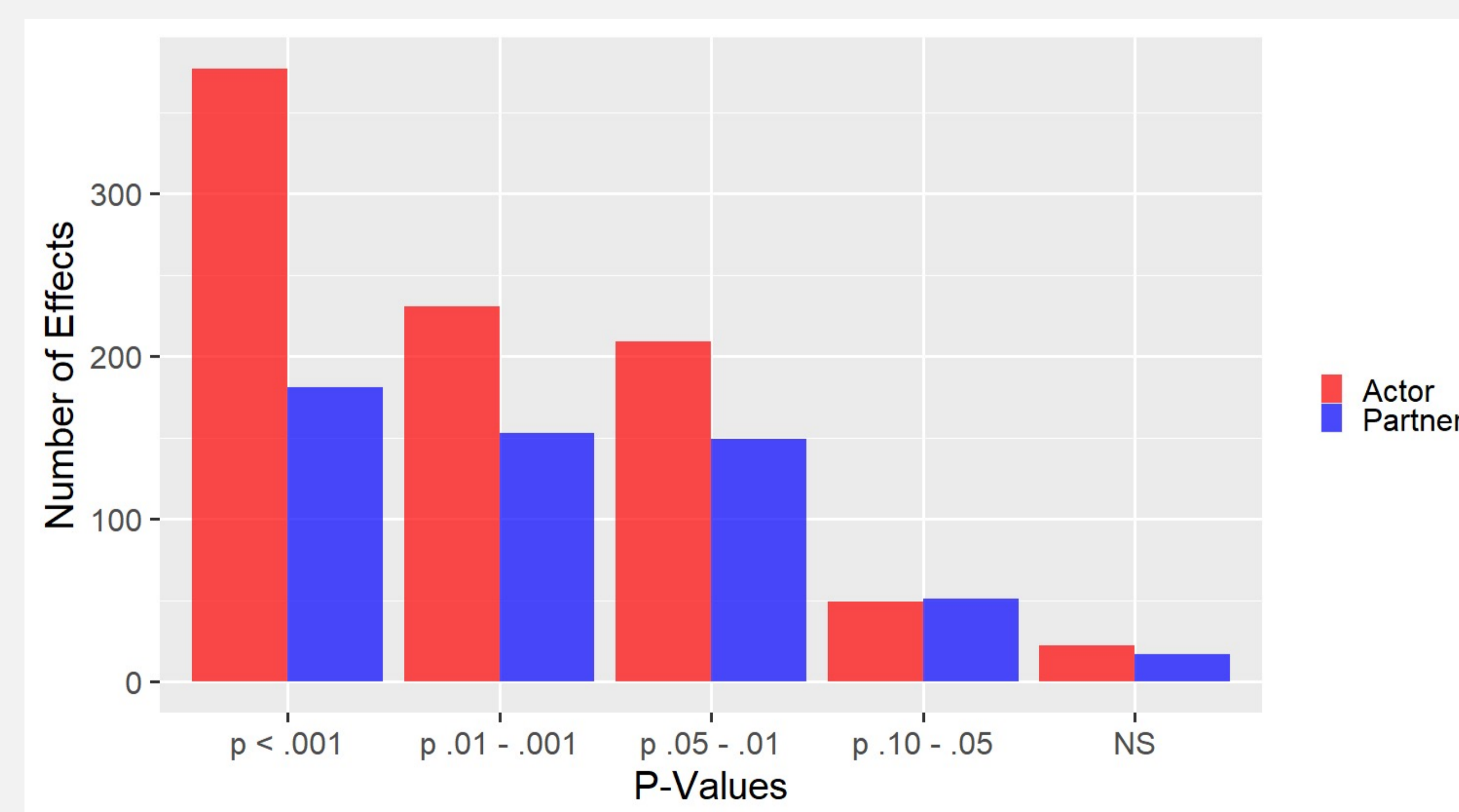


Figure 3. The number of actor and partner effects found at each p-value range. P-value ranges include $p < .001$, $p .01 - .001$, $p .05 - .01$, $p .10 - .05$, $p > .10$. Actor effects are in red and partner effects are in blue.

Results Cont'd

- Results showed that the p-curve for actor effects (in red) generally followed the hypothesized distribution, demonstrating limited evidence of publication bias.
- However, the p-curve for partner effects (in blue) did not follow the hypothesized distribution, suggesting evidence of publication bias.
- A relatively large number of partner effects can be found at the cusp of significance (at the range of $p .05 - .01$). This frequency of effects is almost equal to the number of effects found at $p < .001$ and $p .01 - .001$.

Discussion/Implications

- The purpose of the present analysis was to assess whether researchers overemphasize the importance of 'partner effects' contributions to dyadic data analysis for romantic couples.
- Limited evidence of publication bias was found for the actor effects in this analysis. In contrast, there was evidence of publication bias for partner effects.
- When effects are robust, there should be many effects found at the level of $p < .001$, few at $p < .01$, and even less at $p < .05$. This pattern was not found in examining partner effects.
- These results suggest researchers may be selecting for partner effects that just reach significance ($p < .05$), and publishing these effects when found.
- Additionally, we cannot dismiss what was found by Joel et al. (2020), which was that partner effects did not significantly contribute to predicting relationship quality.
- For future dyadic data analysis, the current research along with Joel et al. (2020) demonstrate that partner effects may be subject to selective reporting and publication bias, and their contribution to the prediction of relationship outcomes should be carefully scrutinized.

References

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