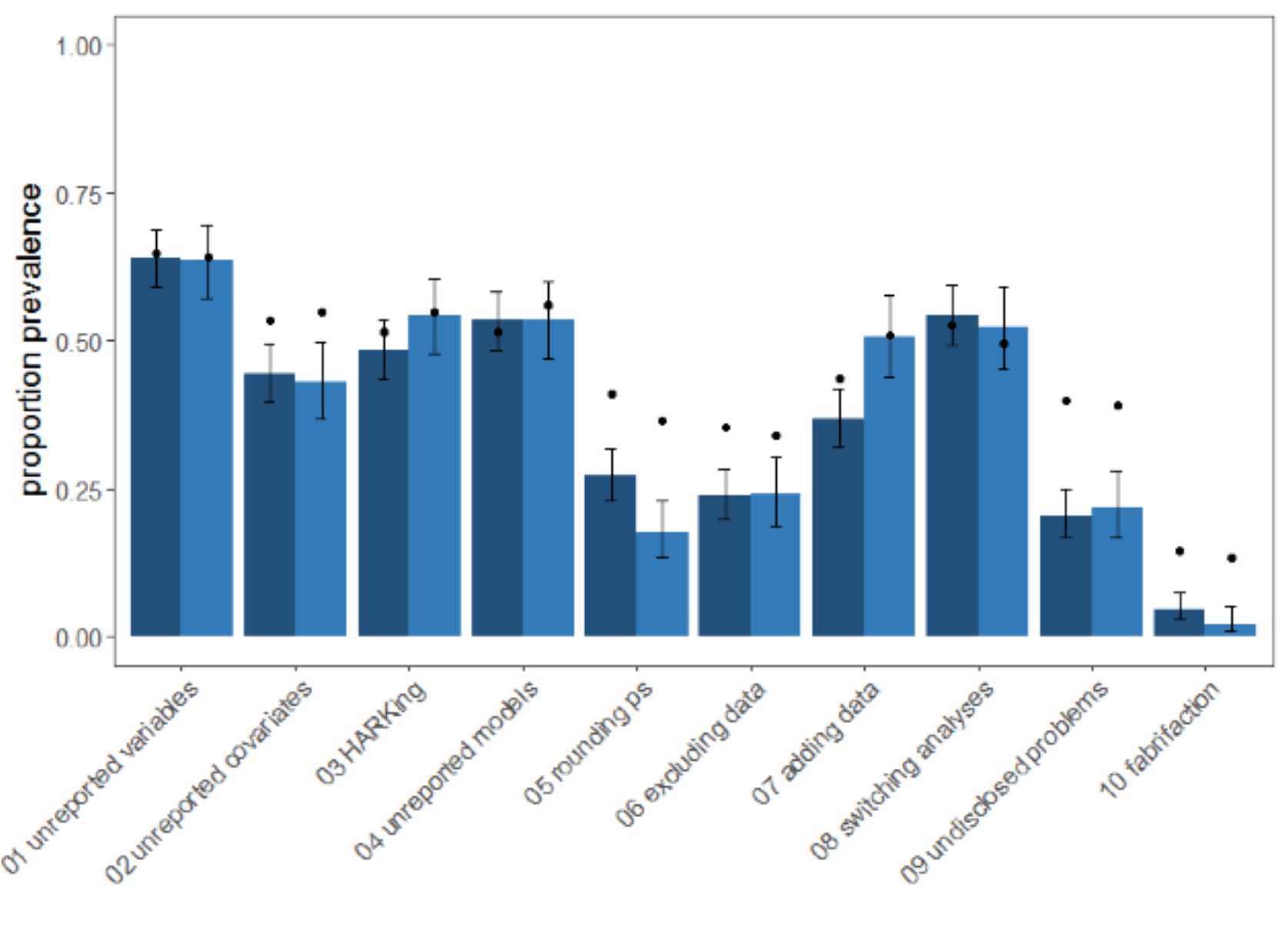
Background

- Initial meta-science research: Ecology and evolution not immune to reproducibility issues

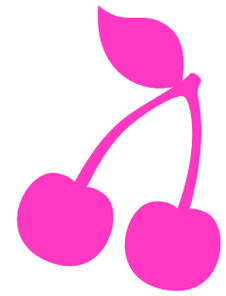

proportion prevalence
1.00
0.75
0.50
0.25
0.00
01 unreported variables
02 unreported covariates
03 HARKing
04 unreported models
05 rounding ps
06 excluding data
07 adding data
08 switching analyses
09 undisclosed problems
10 fabrifaction

Fraser, H., Parker, T., Nakagawa, S., Barnett, A., Fidler, F. (2018) Questionable research practices in ecology and evolution. (ed J. M. Wicherts). PLoS One. 13, e0200303.

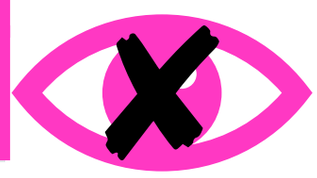
QRPs — what are they?

NHST

Not reporting response (outcome variables) that failed to reach statistical significance.
Not reporting covariates that failed to reach statistical significance
Reporting a subset of tested statistical models as if they were the complete tested set
Reporting Unexpected findings as having been predicted from the start
Rounding off a P-value or other quantity to meet a pre-specified threshold
Deciding to exclude data points after first checking impact on statistical significance
Collecting more data after inspecting whether results are statistically significant
Changing analysis methods after the initial analysis methods failed to reach statistical significance
Not disclosing problems with the methods or data quality that may impact conclusions



HARKing



"A practice that spuriously increases the likelihood of finding support for a false hypothesis" (type I error)

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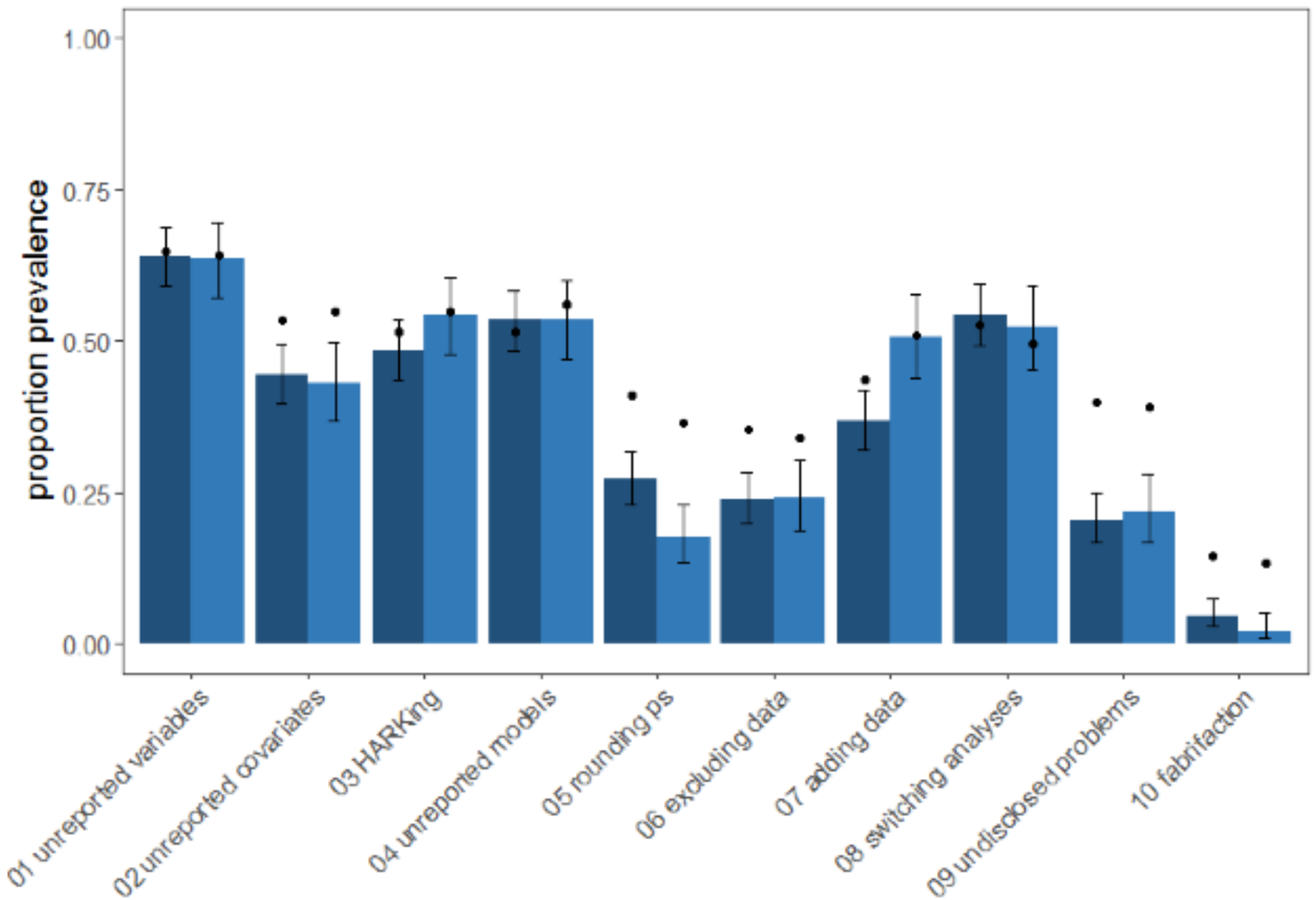

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