

QRRPs — 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

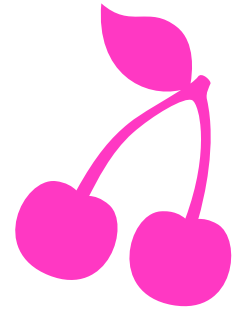
Rounding off a P-value or other quantity to meet a pre-specified threshold

Deciding to exclude data points after first checking impact on statistical significance

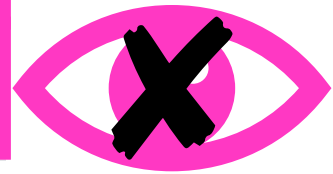
Collecting more data after inspecting whether results are statistically significant

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)

Researcher degrees of freedom

- (Nearly) all QRP research focussed on Null Hypothesis Significance Testing
- Applied Ecology, Conservation Decision Making: non-frequentist methods, Bayesian statistics, decision theoretic approaches, cost-benefit analysis, etc.
- Researcher degrees of freedom: *“Researcher degrees of freedom are typically are opportunities for undisclosed decisions researchers make during data analysis and collection that can increase the probability of a false-positive result”*
- *Modelling choices: development, fitting, calibration, validation, reporting.*
- *Institutional and editorial disincentives for full and transparent reporting practices*

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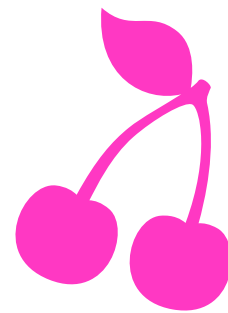
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