

Relevance of open science practices to research integrity

@Lakens

Of Cooking. This is an art of various forms, the object of which is to give to ordinary observations the appearance and character of those of the highest degree of accuracy.

One of its numerous processes is to make multitudes of observations, and out of these to select those only which agree, or very nearly agree. If a hundred observations are made, the cook must be very unlucky if he cannot pick out fifteen or twenty which will do for serving up.

A scientist runs several experiments, but only reports those experiments that show the results they want to see. In your view, how morally acceptable or unacceptable is this?

Table 1 Experimental findings: community members' evaluations of data falsification and fabrication ($n = 415$) versus selective reporting ($n = 406$) (Study 1)

Variables	Falsification and fabrication Support (%)	Selective reporting Support (%)	z	p
Morally unacceptable	96	71	9.59	<.001
Should be fired	96	63	11.75	<.001
Should receive funding ban	93	73	7.75	<.001
Should be a crime	66	37	8.34	<.001

‘Withholding research results’ is deemed ‘unacceptable’.

- Authors and publishers consider negative results to be as valid as positive findings for publication and dissemination.

Table 2. Cross-tabulation between statistical results of TESS studies and their publication status.

Entries are counts of studies by publication status and results. Bolded entries indicate observations included in the final sample for analysis (40). Results are robust to the inclusion of book chapters (table S7).

	Unpublished, not written	Unpublished, written	Published	Book chapter	Missing	Total
Null results	31	7	10	1	0	49
Mixed results	10	32	40	3	1	86
Strong results	4	31	56	1	1	93
Missing	6	1	0	2	12	21
Total	51	71	106	7	14	249

**Around 68% [42%] of psychologists
admit they selectively report studies
[regarding a specific finding] that
'worked' *at least once.***

[John et al., 2012; Fiedler & Schwarz, 2017]

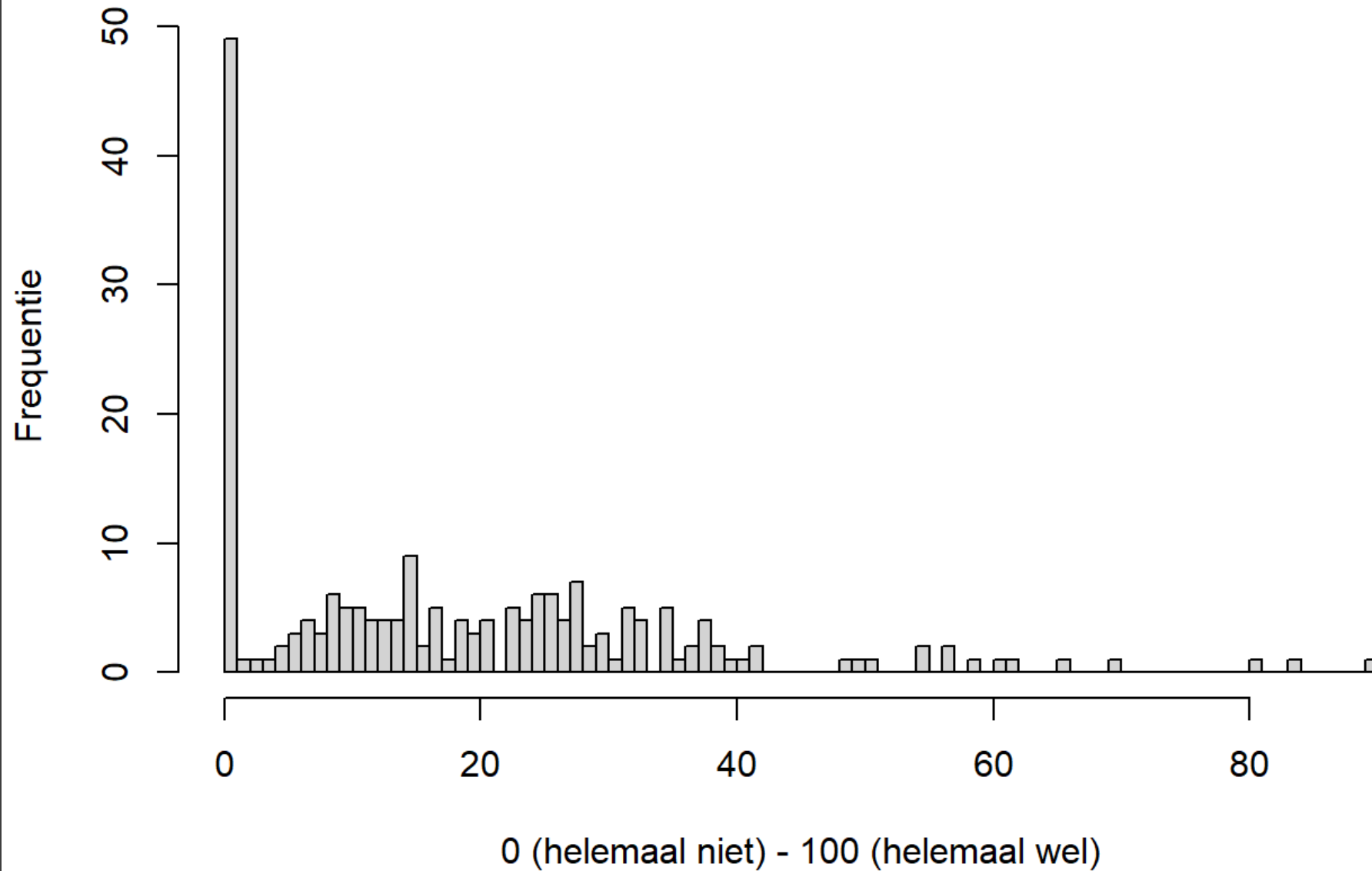
Other practices researchers admit to are **selectively reporting** measures or conditions, **optional stopping**, and rounding $p = .054$ to $p < .05$ (see Michelle Nuijten's next talk).

Only 27% (Wicherts et al., 2004) to 38% (Vanpaemel et al, 2015) share their data upon request.

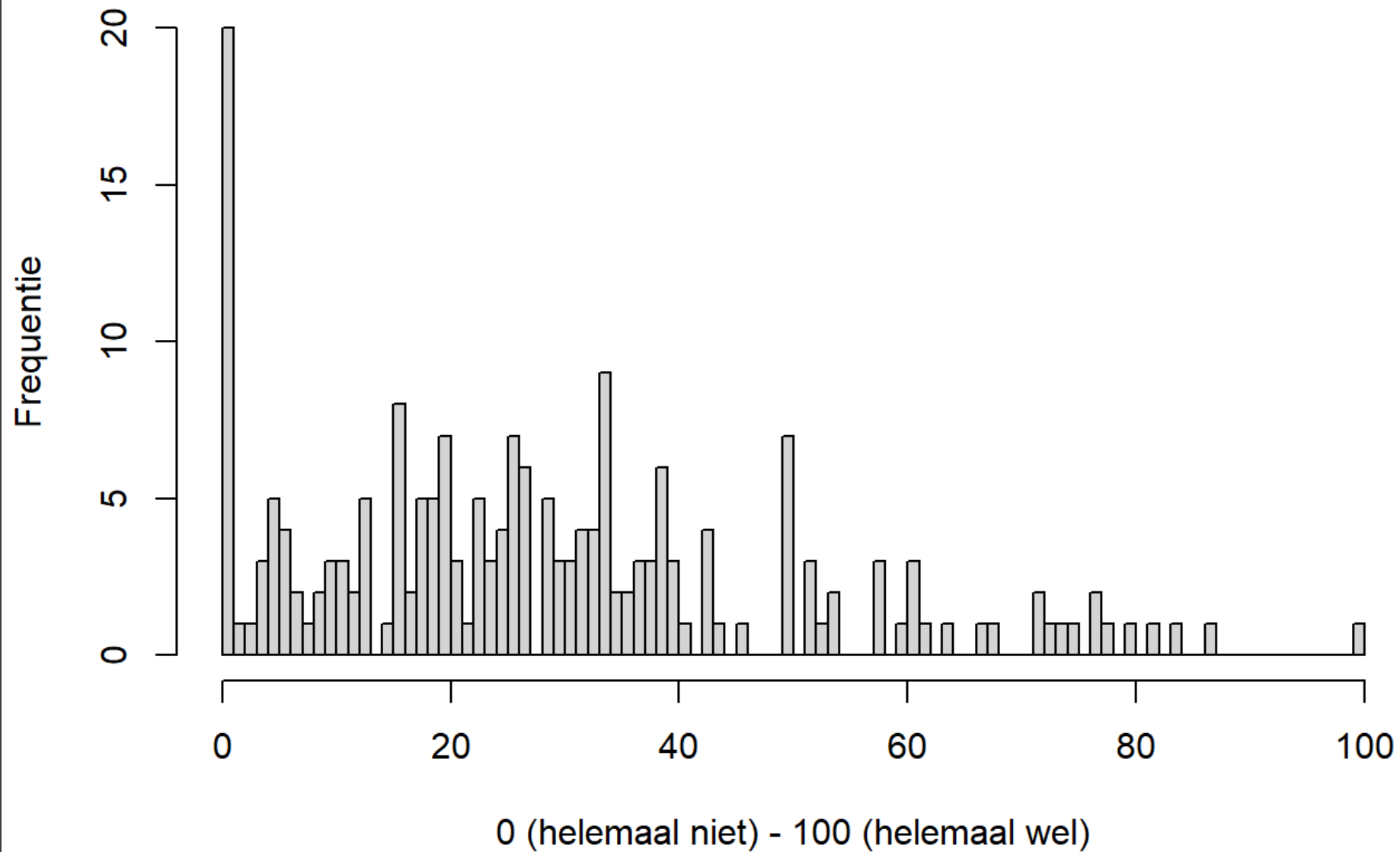
What does the Dutch public think of this? In a pilot, we (Anna van 't Veer, Maaïke Verburg, and me) asked 200 people on Prolific.



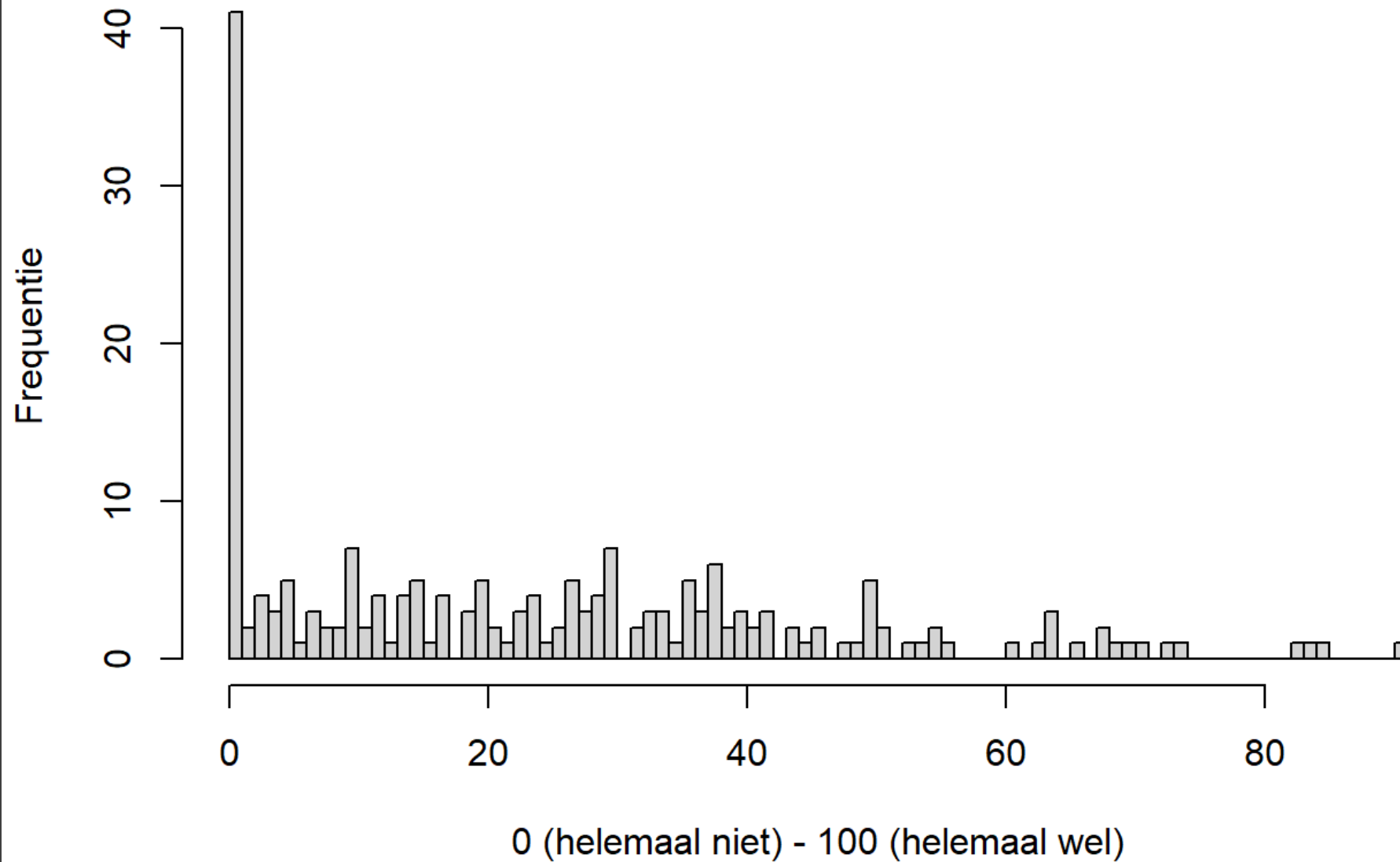
Hoe moreel acceptabel vindt u het als wetenschappers selectief rapporteren?



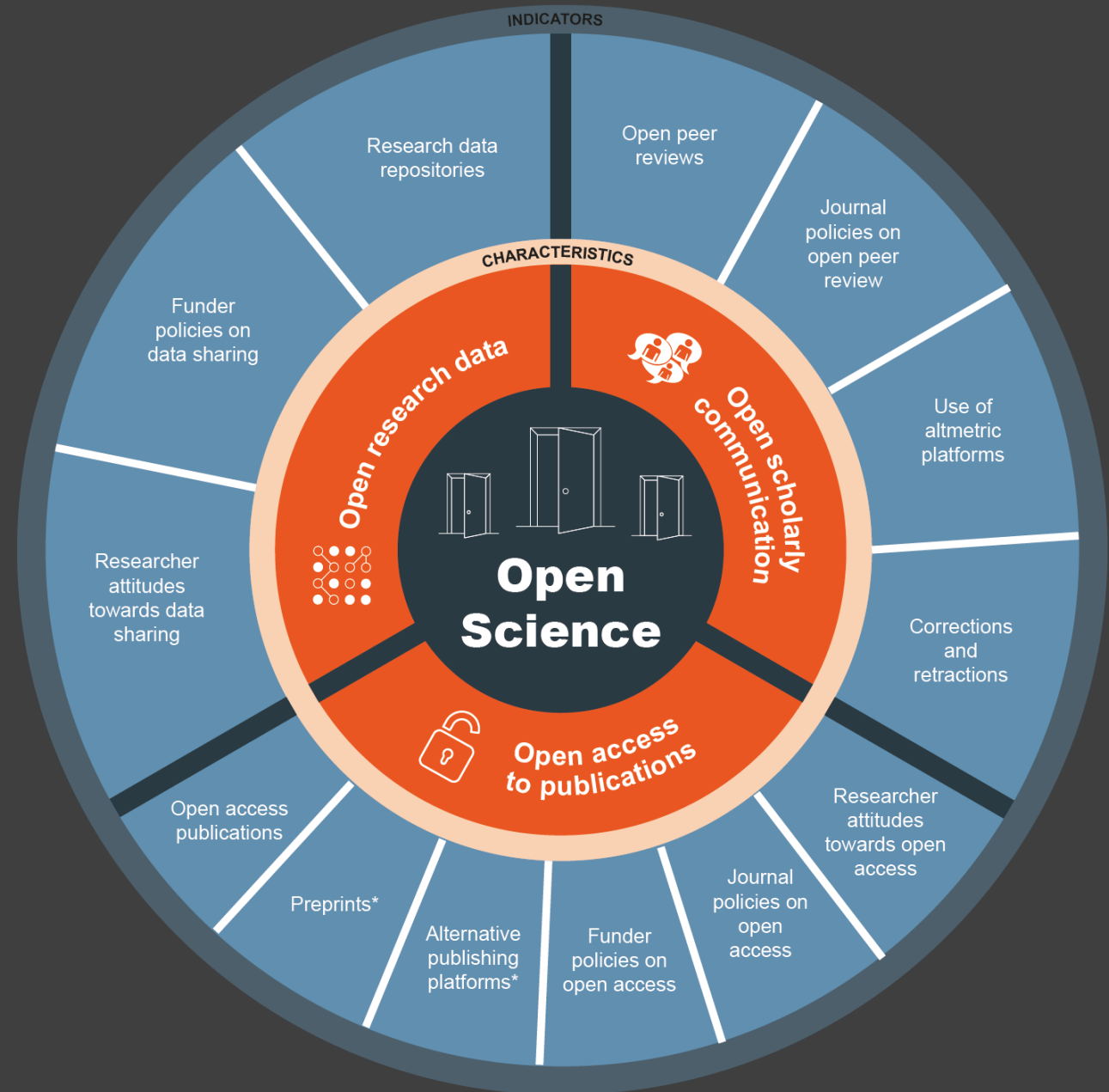
Hoe moreel acceptabel vindt u het als publicatiebias plaatsvindt in de wetenschap?



Hoe moreel acceptabel vindt u het als wetenschappers hun data niet delen?



Open Science is not just about data and access, but also about transparency.



In Registered Reports, scientists submit a detailed theoretical rationale, method, and analysis plan for review. The article can receive *in principal acceptance* before the data is collected.

Null results are shared a lot more often in *Registered Reports*.

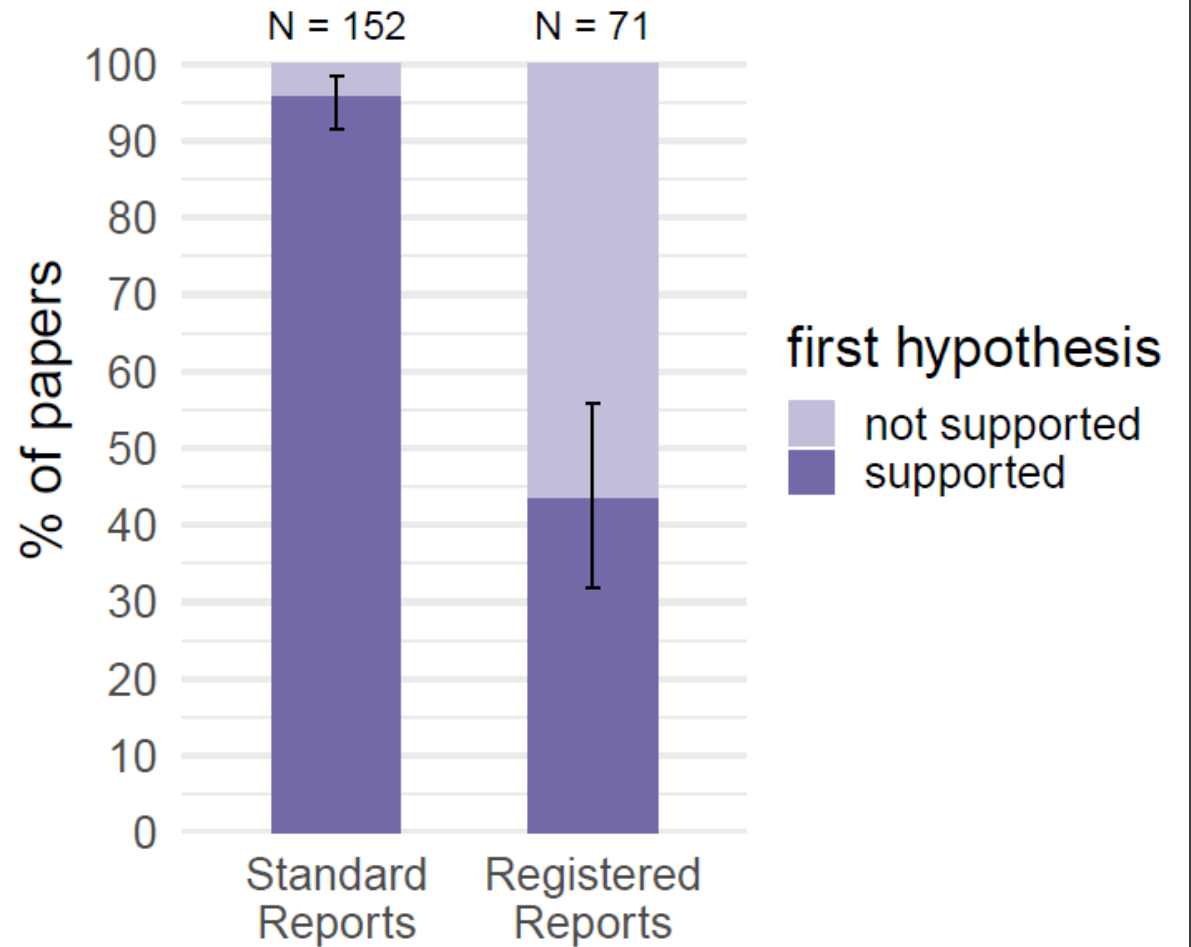


Figure 2. Positive result rates for standard reports and Registered Reports. Error bars indicate 95% confidence intervals around the observed positive result rate.

Questionable practices are centuries old. Open science facilitates **reliable** and **honest** work and increases **accountability**.