

Table 1. Coding of the Fallacies in the Textbooks' Presentation of Statistical Significance (Based on Kline, 2009)

	Category of Fallacy	Description of the Fallacy
1	Odds against chance	Statistical significance means that the likelihood that the result is due to chance is less than 5%.
2	Local Type I error	Statistical significance means that the likelihood that a Type I error was committed is less than 5%.
3	Inverse-probability error	Statistical significance means that the likelihood that the null hypothesis is true is less than 5%.
4	Replicability	Statistical significance means that the probability of finding a statistically significant result in a replication is greater than 95%.
5	Validity	Statistical significance means that the probability that the alternative hypothesis is true is greater than 95%.
6	Meaningfulness	A finding of statistical significance confirms the alternative hypothesis and the research hypothesis.
7	Quality	A finding of statistical significance means the study was of good quality.
8	Other	Unclassifiable fallacy

Remember that a p -value is the probability of obtaining results as extreme or more extreme than the results we observed, assuming the null hypothesis is true.

Therefore, a p -value of $< .05$ means that there's a 5% probability of obtaining results as extreme or more extreme than the results we observed.

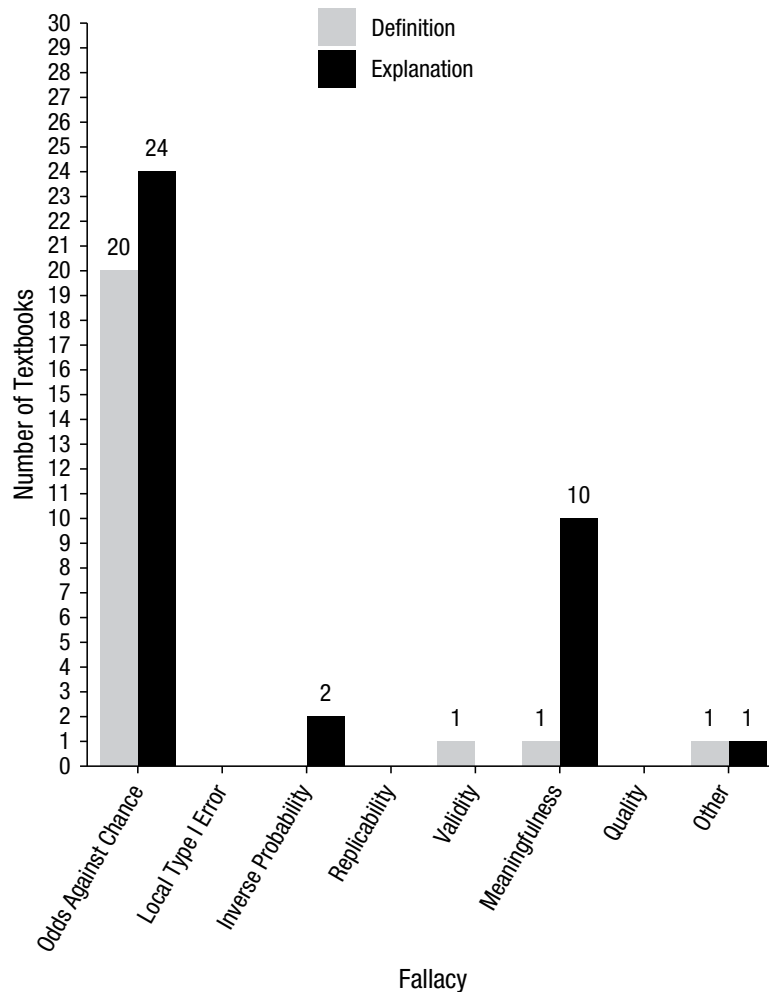


Fig. 2. Frequency of each of the coded fallacies in the textbooks' definitions and explanations of statistical significance.

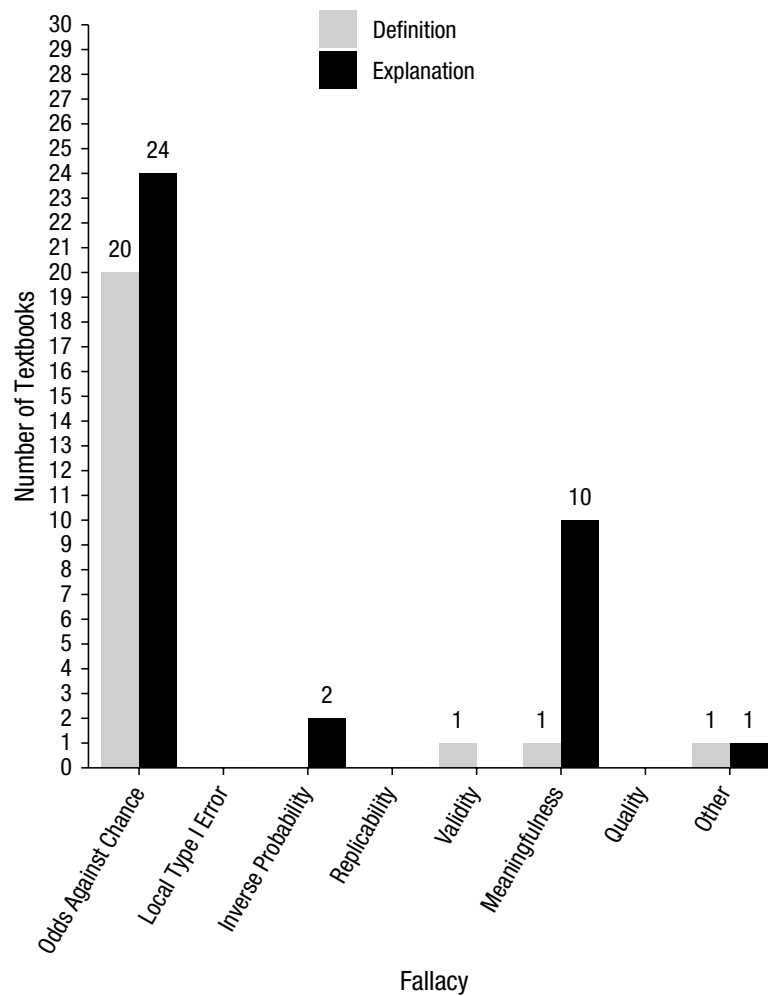


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Action Editor

Simine Vazire served as action editor for this article.

Author Contributions

Order of authorship was determined alphabetically by last name. J. R. Spence generated the idea for this study. B. Giguère acquired the textbooks. B. Giguère, J. R. Spence, and D. J. Stanley coded the data. J. R. Spence and D. J. Stanley wrote the manuscript, and S. A. Cassidy and R. Dimova helped code a previous version of the manuscript.

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Declaration of Conflicting Interests

The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

Open Practices



Open Data: <https://osf.io/z7kq2/>

Open Materials: <https://osf.io/z7kq2/>

Preregistration: no

All data and materials have been made publicly available via the Open Science Framework and can be accessed at <https://osf.io/z7kq2/>. The complete Open Practices Disclosure for this article can be found at <http://journals.sagepub.com/doi/suppl/10.1177/2515245919858072>. This article has received badges for Open Data and Open Materials. More information about the Open Practices badges can be found at <http://www.psychologicalscience.org/publications/badges>.

Notes

1. We would like to thank Kimberley Veevers, an executive portfolio manager at Pearson, for providing us with this information.