



The is-ought problem in deciding what to replicate: Which motives guide current replication practices?

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This commentary examines whether the motives that currently guide replication practices align with normative proposals for selecting replication targets. Drawing on the preliminary analysis of 1,075 replication studies in psychology, we find that researchers most often conduct replications to self-replicate, extend previous findings, or test their generalizability, whereas motives related to a study's influence or uncertainty are mentioned less frequently. These findings suggest a discrepancy between what researchers do replicate and what meta-scientific frameworks recommend should be replicated, highlighting the continued influence of novelty-oriented incentives even within the replication landscape.

Keywords: replication, replication value, replication motive, conceptual replication, self-replication, publication bias

Isager et al. (2025) proposes a framework to determine which studies should be replicated in order to allocate resources in a sustainable way. They argue that deciding what to replicate should involve an assessment of the target study's value and uncertainty. In their framework, value is operationalized as a study's citation count and meant to measure to what extent the study impacts scientific theory, clinical practice, public policy, and the like. Uncertainty focuses on how much information can be gained from claims that may not have been sufficiently investigated yet and is operationalized through sample size. Both value and uncertainty are included in their framework to quantify the expected replication value as a basis for more formalized selection procedures for replication studies. Isager and colleagues present a validation of their proposal showing that studies that have been selected for replication indeed have a higher replication value than comparable studies that haven't undergone replication, suggesting that authors of replication studies at least implicitly are guided by value and uncertainty when choosing studies for replication. Our commentary concerns replication authors' explicit motives for replication.

Isager (2018) collected self-reported justifications for selecting studies for replication. In 52 out of 68 replication studies, factors related to value (such as citation impact, theoretical importance, citation in textbooks, and influence on policy) were mentioned. Factors related to uncertainty were mentioned in 51 out of 68 reports (including lack of replication, imprecise estimates, and prevalence of questionable research practices). Ad-

ditionally, low costs were mentioned 4 out of 68 times and personal preferences (i.e., research interest of the authors) 16 out of 68 times. Consequently, Isager et al. (2023) suggest that researchers mainly consider a) the value/ impact of a research topic, b) the uncertainty about a research claim, c) the quality of the study that is proposed for replication, and d) the costs/feasibility of the replication. This proposal is offered further credibility by a recent survey of experts on replication in which a) interest, b) doubt, c) impact, d) methodology, and e) feasibility emerged as the most common replication motives (Pittelkow et al., 2023). An ongoing study by the authors of this commentary expands on these findings by assessing the explicit replication motives of authors of replications in 100 psychology journals between 2012 and 2021. This was achieved by identifying all replication studies in the top 100 ranked journals (by 5-year journal impact factor) in the Social Science Citation Index (SSCI) of the Web of Science Core Collection by Clarivate. These replication studies were coded for replication type and the motive(s) for replication mentioned by the author(s). Following Hüffmeier et al. (2016) we distinguished between exact, close, constructive, and conceptual replications. Exact replications are replications that aspire to be as identical as possible to an original study and are carried out by the same researchers. Close replications aspire to be as similar as possible to the original study but are conducted by independent researchers. Constructive replications are similar to the original study but additionally introduce new elements. Often this takes the form of a consecutive

study within the same paper. Lastly, conceptual replications aim to investigate whether a finding arises in a different context or with another methodology. Nine motivation categories were determined in a bottom-up fashion by determining the major themes among the explicit replication motives: 1) reference to the replication crisis, 2) methodological concerns, 3) conflicting results, 4) alternative explanations, 5) influential / fundamental, 6) self-replication, 7) extension, 8) generalizability, 9) or other – which are described in more detail in Table 1. Among these categories, influential/fundamental maps directly onto value from Isager et al. (2025), while methodological concern, conflicting results, and alternative explanation all pertain to aspects of uncertainty. The proposal by Isager and colleagues does not directly bear on the remaining replication motives.

Our findings are preliminary in that the reliability of the coding still has to be established, but the general pattern is telling of current research practices. Our preliminary findings based on an investigation of 1075 replication studies, indicate that value and uncertainty are not among the most mentioned motives for replication. With only 5% of the replication studies referring to the influence of the target study, influential/fundamental is among the least mentioned motives for replication. Uncertainty seems to be valued somewhat more strongly with methodological concerns, conflicting results, and alternative explanations being mentioned in 14%, 7%, and 6% of replication studies, respectively. Replication authors engage in self-replication most often (46%) and indicate extension (38%) and generalisability (32%) as the second and third most important reasons for replication (see Figure 1 for preliminary results). This is consistent with our observation that of all 1075 replication studies assessed, we identified about 52% as conceptual, 22% as exact, 18% as constructive, and the remaining 8% as close replications. Note that the large majority of self-replications are not due to authors who have lost confidence in an earlier published finding, but occur within a multi-study article, where a subsequent study is used to confirm the results of a preceding study. Such self-replications constitute a large part of the exact and constructive types of replications.

The relative popularity of conceptual replications and related motives such as extending or generalising previous studies reveals that a predominantly novelty-oriented research culture even pervades the replication landscape. This is particularly disheartening considering that only less than 1% (in our findings roughly half a percent) of all studies published in psychology are replications (Makel et al., 2012) – with an even smaller number counting as close replications of original findings. Motives addressing uncertainty or value

aren't reported as much by replication authors as one would expect based on the importance attributed to them by meta-scientists (Field et al., 2019; Isager et al., 2023, 2025; Makel et al., 2012; Murphy et al., 2022; Pittelkow et al., 2023). The observation that several authors practice self-replication by conducting exact and/or constructive replications in multi-study articles can be considered a silver lining in that replicating oneself before moving to publication is one way to reduce the uncertainty of research findings. It is, however, not a sure proof of avoiding that ambiguous findings enter the scientific literature because of undetected problems with the original and replicated studies (Rotello et al., 2015). Incidentally, this also raises the question which type of replication should be undertaken when a study is identified as having high replication value (see Lynch et al., 2015, for discussion). We suspect that the nature of the associated uncertainty might be a decisive factor here. Our findings indicate that there are several aspects to uncertainty, which aren't all reflected to the same extent when uncertainty is operationalized through sample size. This also suggests, that in addition to formalized procedures for selecting replication targets, methodological and content experts will still be likely to devote their efforts to replicating studies they consider to be flawed or mistaken. While replication can certainly be a means of correcting the scientific record, an advantage of the proposal by Isager et al. (2025) is that it does not appear biased toward studies that are unlikely to successfully replicate, and as such may lead to a healthier scientific literature that is neither distorted by file drawer bias, nor repeat study bias or gotcha bias (Berinsky et al., 2020). Ultimately, such efforts could help restore public trust in (psychological) science by increasing the number of successful replications (Anvari & Lakens, 2018; Wingen et al., 2020).

Take Home Message

We believe that our findings highlight a discrepancy between what is motivating researchers to conduct replication studies and what according to Isager et al. (2025) and others ought to motivate researchers when deciding what to replicate. The validation of their replication value framework indicates that studies that have been selected for replication indeed have a higher expected utility gain than non-replicated studies. However, our preliminary findings suggest that (even) in the replication landscape novelty is valued more than reducing uncertainty or obtaining more accurate knowledge about influential findings. This could be due to prevailing publication policies which still expect or require researchers to submit novel findings. As such, researchers who are convinced about the value of replica-

Table 1*Taxonomy of motives for conducting replication studies as mentioned by the author(s)*

Motive	Coding	Interpretation
Explicit reference to replication crisis	RC	the author(s) actively refer to the replication crisis within the social sciences, and emphasize the need for and value of replication studies
Methodological concern	MC	the author(s) have concerns about the methodology of the original study and aim to improve on the method, analysis, and/or design of the original study
Conflicting results	CR	the literature shows inconsistent results about the phenomenon under study, where the author(s) of the replication study want to add to and/or settle the debate
Alternative explanation	AE	the author(s) suspect the phenomenon under scrutiny might have a different origin than initially thought
Influential / Fundamental	I/F	it is important to replicate because the original study has societal impact and/or implications, or is otherwise academically important, for instance because it is often cited or regularly features in textbooks
Self-replication	SR	the author(s) want to conduct a replication study to see whether their original results are reliable
Extension	EX	the replication study is meant to add on to the original findings, and to provide additional insights into the phenomenon discussed
Generalisability	GEN	the replication study uses different tasks, materials, or participants to generalize the original findings; validations of new methods are also included in this category
Other	O	Replication motives that do not fall under the preceding categories

tions might still make the deliberate choice to include novel elements in their replication attempts to meet these (implicit) expectations. Currently, the proposal by Isager and colleagues offers a useful framework that allows researchers to objectively argue for the studies they decide to replicate. It therefore stands to reason that the expected utility of their framework could be further increased if researchers would not feel pressured by novelty; not only when selecting replication targets, but also when deciding on the type of replication. While there are several good reasons to replicate a study, the framework might be particularly useful for changing the incentive structure surrounding the publication of replications in that it provides objective arguments as to why and how replication studies should be conducted.

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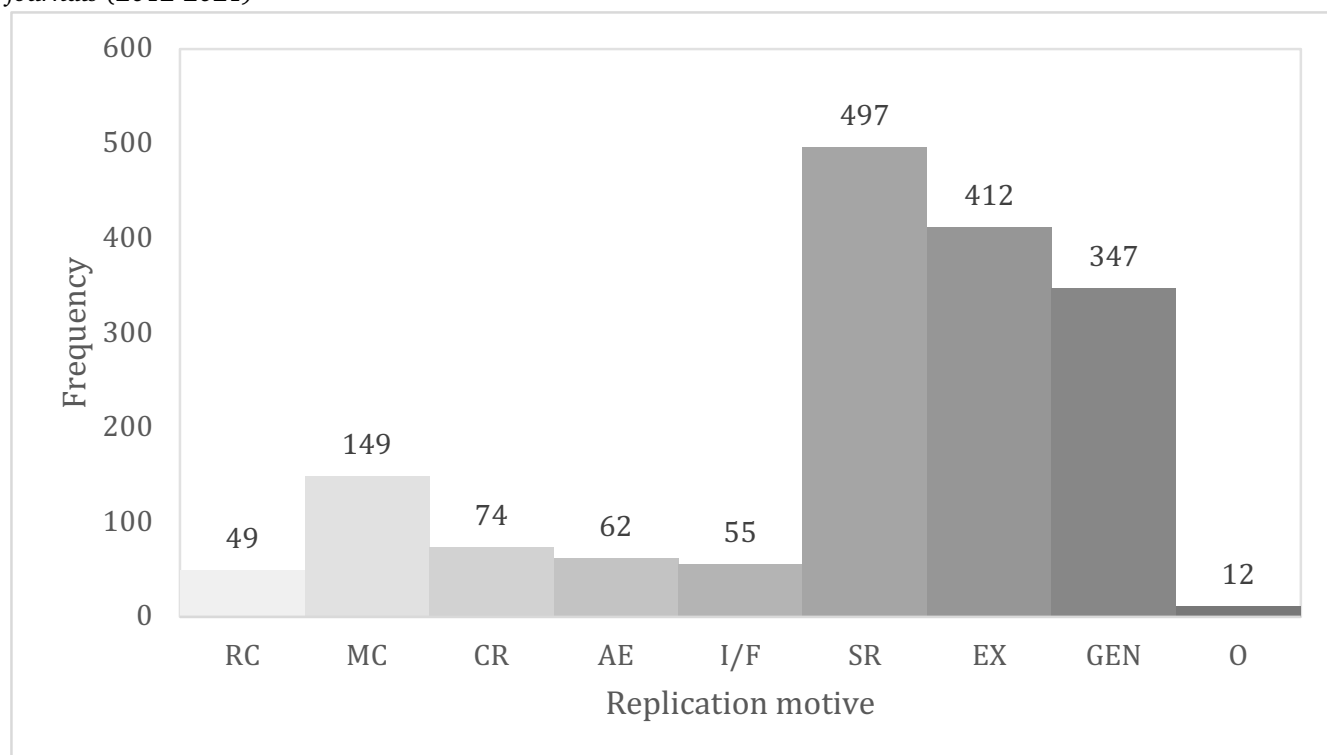
The possibility of KK and LD to obtain a PhD and pursue an academic career would be enhanced by a demonstration of their ability to publish a commentary. The evaluation, opportunities for promotion, and ability to obtain research funding of TD and SV are partly dependent on the number of articles they publish. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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Conceptualization: SV. Data curation: KK. Formal analysis: KK. Investigation: KK and SV. Methodology: SV. Project administration: TD and SV. Supervision: TD and SV. Visualization: KK. Writing - original draft: KK,

Figure 1

Preliminary findings on the frequency of motives mentioned by authors of replication studies in the top 100 of psychology journals (2012-2021)



LD, and SV. Writing - review & editing: KK, LD, TD, and SV.

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References

- Anvari, F., & Lakens, D. (2018). The replicability crisis and public trust in psychological science. *Comprehensive Results in Social Psychology*, 3(3), 266–286. <https://doi.org/10.1080/23743603.2019.1684822>
- Berinsky, A. J., Druckman, J. N., & Yamamoto, T. (2020). Publication biases in replication studies. *Political Analysis*, 29(3), 370–384. <https://doi.org/10.1017/pan.2020.34>
- Field, S. M., Hoekstra, R., Bringmann, L., & van Ravenzwaaij, D. (2019). When and why to replicate: As easy as 1, 2, 3? *Collabra: Psychology*, 5(1). <https://doi.org/10.1525/collabra.218>
- Hüffmeier, J., Mazei, J., & Schultze, T. (2016). Reconceptualizing replication as a sequence of different studies: A replication typology. *Journal of Experimental Social Psychology*, 66, 81–92. <https://doi.org/10.1016/j.jesp.2015.09.009>
- Isager, P. M. (2018). *What to replicate? justifications of study choice from 85 replication studies* (tech. rep.). Zenodo. <https://doi.org/10.5281/zenodo.1470153>
- Isager, P. M., van Aert, R., Bahnik, Š., Brandt, M. J., DeSoto, K. A., Giner-Sorolla, R., & Lakens, D. (2023). Deciding what to replicate: A decision model for replication study selection under resource and knowledge constraints. *Psychological Methods*, 28(2), 438–451. <https://doi.org/10.1037/met0000438>
- Isager, P. M., van 't Veer, A. E., & Lakens, D. (2025). Replication value as a function of citation impact and sample size. *Meta-Psychology*. <https://doi.org/10.15626/MP.2022.3300>

- Lynch, J. G., Bradlow, E. T., Huber, J. C., & Lehmann, D. R. (2015). Reflections on the replication corner: In praise of conceptual replications. *International Journal of Research in Marketing*, 32(4), 333–342. <https://doi.org/10.1016/j.ijresmar.2015.09.006>
- Makel, M. C., Plucker, J. A., & Hegarty, B. (2012). Replications in psychology research: How often do they really occur? *Perspectives on Psychological Science*, 7(6), 537–542. <https://doi.org/10.1177/1745691612460688>
- Murphy, J., Mesquida, C., Caldwell, A. R., Earp, B. D., & Warne, J. P. (2022). Proposal of a selection protocol for replication of studies in sports and exercise science. *Sports Medicine*, 53(1), 281–291. <https://doi.org/10.1007/s40279-022-01749-1>
- Pittelkow, M.-M., Field, S. M., Isager, P. M., van 't Veer, A. E., Anderson, T., Cole, S. N., Dominik, T., Giner-Sorolla, R., Gok, S., Heyman, T., Jekel, M., Luke, T. J., Mitchell, D. B., Peels, R., Pendrous, R., Sarrazin, S., Schauer, J. M., Specker, E., Tran, U. S., & van Ravenzwaaij, D. (2023). The process of replication target selection in psychology: What to consider? *Royal Society Open Science*, 10(2). <https://doi.org/10.1098/rsos.210586>
- Rotello, C. M., Heit, E., & Dubé, C. (2015). When more data steer us wrong: Replications with the wrong dependent measure perpetuate erroneous conclusions. *Psychonomic Bulletin Review*, 22, 944–954. <https://doi.org/10.3758/s13423-014-0759-2>
- Wingen, T., Berkessel, J. B., & Englich, B. (2020). No replication, no trust? how low replicability influences trust in psychology. *Social Psychological and Personality Science*, 11(4), 454–463. <https://doi.org/10.1177/1948550619877412>