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Tracking and mainstreaming replications in the social, cognitive, and behavioral sciences

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Data Accessibility Statement

The data pertaining to this work is accessible at https://forrt.org/apps/fred_explorer.html and is described in Röseler et al. (2024). The dataset is accessible at https://osf.io/9r62x/. The R package can be found at https://forrt.org/FReD/index.html and is described in more detail in Röseler et al. (2025).

Declarations of Conflicting Interests

The authors declare the following competing interests: We all are or were in the past members of the Framework for Open and Reproducible Research Training (FORRT; forrt.org). LR is Editor in Chief of the *Replication Research* journal that is dependent on researchers conducting replications. FA and LW are Senior Editors there. SV and TRE are Associate Editors there. TRE is an Associate Editor for *Royal Society Open Science*, *PCI: Psychology* and *Collabra: Psychology*.

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Abstract

Replicability is a cornerstone of scientific progress. Yet, replications are often undervalued, and are sometimes seen as redundant, unimportant, or lacking novelty. This impedes their broader adoption in research and beyond. In response, the credibility revolution calls for slower, more deliberate science and greater responsiveness to fallibility. In this perspective piece, we argue that (a) replications are essential for validating scientific claims, (b) replications need to be made more visible, recognized, and integrated into research and educational practices, and (c) we can change the way we view and judge replication results. We propose a framework where replication studies can be systematically tracked and normalized through the Replication Hub as part of the Framework for Open and Reproducible Research Training (FORRT) initiative, with the goal of enhancing the visibility, integration, and cumulative impact of replication research across disciplines.

Keywords: Metascience; Open scholarship; Open science; Replicability; Replications; Reproducibility; Replication Crisis

Introduction

Replication is the process by which researchers test whether the same claims, in identical, similar, or varying contexts, lead to conclusions consistent with those of the original study (Parsons et al., 2022). Replications are a cornerstone of empirical research, where independent sources contribute cumulative evidence to support or refute a given claim. However, recent metascientific studies across scientific fields, particularly those in social, cognitive, and behavioral sciences, have found that many prominent findings 'fail' to replicate, that is, their results do not converge with those from the target studies and challenge the credibility of previous scientific claims (Brodeur et al., 2024; Ioannidis, 2005; Nosek & Errington, 2020).

Even when studies do replicate, the observed effects are often much smaller (Patil et al., 2016), averaging half of the originally reported effect sizes (Camerer et al., 2018; Open Science Collaboration, 2015). Such patterns appear across fields, including psychology (Klein et al., 2014, 2018; Wagenmakers et al., 2011), medicine (Hope et al., 2021), biology (Begley & Ellis, 2012; Errington et al., 2021a; 2021b), economics (Camerer et al., 2016), and neuroscience (Boekel et al., 2015). This has been coined as a 'replication crisis', raising concerns regarding the robustness of scientific knowledge and challenging the validity of decades of research. In response, this so-called crisis has given rise to a grassroots open science reform movement and the emergence of the field of metascience, that is, research on how science is conducted.

Despite this movement and evidence that many studies do not replicate, replication attempts are still rare (Ankel-Peters et al., 2023; Clarke et al., 2024; Hardwicke et al., 2021; Kamermans et al., 2024; Kelly, 2006; Kobrock et al., 2023; Makel et al., 2012; Makel & Plucker, 2014; Marsden et al., 2018; Martin and Clarke, 2017; McNeeley & Warner, 2015; Mueller-Langer et al., 2019). Moreover, journals are often unwilling to publish replication studies, which compromises our ability to build robust bodies of evidence to inform policy and practice. It also highlights that replications are not yet given the recognition they deserve, particularly by journal editors, funders, policymakers, and even researchers themselves. In contrast, novel results are often less scrutinized regarding reproducibility, published more readily, and cited more frequently (Scheel et al., 2021; Serra-Garcia & Gneezy, 2021).

Contrasting the underappreciation of replications, especially those that challenge long-established original findings, we argue for replications to be seen as a critical resource for designing, conducting, and interpreting research. Viewing the 'replication crisis' as a 'credibility revolution' (Korbmacher et al., 2023; Vazire, 2018) and an opportunity (Munafò et al., 2022), we are not alone in calling for slower, more deliberate science (Alleva, 2006; Frith, 2020; Owens, 2013; Stengers, 2017) and greater responsiveness to fallibility (Bishop, 2018). In the following sections, we discuss (a) the essential role of replications in science, (b) the need for their increased visibility and recognition through systematic tracking, (c) necessary changes in the way we judge replication results, and (d) future directions for replication practices in professional and educational contexts.

The need for replications

There is a common and longstanding narrative of science being built on replications, but recently they have been heralded as a key tool for 'saving science' (Edlund et al., 2021), for example, by ensuring the reliability and validity of scientific findings, strengthening confidence in research outcomes, and identifying potential biases in original studies. Two fundamental aspects of science make replications indispensable: First, given the probabilistic nature of research and the myriad contextual and random factors affecting outcomes, no single study can be conclusive — including in the social, cognitive, and behavioral sciences. Second, science should be self-correcting, cumulative, and incremental, with progress building on prior work.

Despite this, current scientific practice often prioritizes novelty over replication and treats individual findings as definitive rather than part of a larger evolving picture (for example, see Owen, 2013). The credibility revolution has underscored the dangers of prioritizing flashy and unexpected results over robustness. For example, research on social priming appeared so convincing that Nobel laureate Daniel Kahneman dedicated a chapter to it in his bestselling book *Thinking, Fast and Slow* (Kahneman, 2011), and others began exploring its applications in business and health interventions (Papies et al., 2016). However, once preregistered replications were conducted more systematically, multiple independent research teams failed to replicate the originally reported social priming effects (for example, Mac Giolla et al., 2024), and the field became emblematic of the concerns surrounding research integrity (Chivers, 2019; Kahneman, 2012; Leys, 2024; Schimmack et al., 2017; Yong, 2012).

Direct replications are a crucial safeguard against the immense resource waste of building a literature on false positive findings (Zwaan et al., 2018). By recreating studies with highly similar or identical methods and sample characteristics, direct replications help to identify which findings are reliable, and, therefore, worth expanding upon (as opposed to previously more common *conceptual* replications, that is, attempts to identify the same effects but often including differences in sample, research designs, measurement approaches and/or analysis pathways; LeBel et al., 2018; Parsons et al., 2022). Given the regular occurrence of false positive results — significantly amplified by publication bias and questionable research practices (John et al., 2012; Nagy et al., 2025; Simmons et al., 2011) — multiple and direct replications are essential for science, specifically for ensuring reliable, unbiased results, fostering cumulative knowledge generation, and strengthening scientific rigor. Although replications are not immune to errors, there has been an increasing effort to conduct them with higher statistical power than the original studies and to employ preregistered study designs and analysis plans, thus providing stronger evidence for the robustness of key findings (Hedges & Schauer, 2019; Simonsohn, 2015). On the other hand, replications per se are not 'better' than original studies and each study needs to be judged on its own merits.

Beyond verifying the existence of an effect, especially when science moves towards application, it is crucial to estimate accurate effect sizes to determine practical significance — whether an effect is meaningful enough to act on or not (Anvari et al., 2023; Peetz et al., 2024). For example, knowing that a medication reliably increases sleep by eight minutes is vital in judging its usefulness, effectiveness, and overall cost-benefit (Ferracioli-Oda et al., 2013). Achieving greater precision in effect size estimates is dramatically improved through larger sample sizes, and biases in the literature often exaggerate effect sizes (for example, publication bias; Schäfer & Schwarz, 2019). Therefore, multiple or large-scale replications can help to provide more precise, reliable, and generalizable estimates of true effects (Forscher et al., 2023; Hunter, 2001; Tiokhin et al., 2019; but see also Ghai et al., 2024).

In addition to simply corroborating or challenging original claims, replications also help identify 'boundary' conditions that affect the presence and/or magnitude of effects (Bauernfeind, 1968). When replication results challenge original studies, authors often cite contextual factors to explain failures. While this may seem like deflecting criticism, it presents opportunities to test such potential factors and generate further hypotheses (Zwaan et al., 2018). If authors of original research more widely adopt statements of constraints on generality (Simons et al., 2017; Zhu et al., 2025), this process can accelerate. This is particularly crucial when moving beyond limited contexts (for example, Western, Educated, Industrialized, Rich, and Democratic" [WEIRD] populations; Ghai et al., 2024; Henrich et al., 2010), where findings need to be tested for broader applicability and generalizability (such as different locations or financial resources).

While not sufficient on their own, direct or close replications play an integral role in scientific progress, as they ensure that the core effects hold under similar circumstances. Conceptual replications are a crucial next step. In contrast to direct replications, they deliberately vary contextual or methodological features and thus allow assessing the robustness and generalizability of an effect. For example, Tunç and Tunç (2023) propose the Systematic Replications Framework (SRF) to design a pre-planned series of systematically interlinked close and conceptual replications (see also Hüffmeier et al., 2016).

Therefore, studies might ideally first reproduce and replicate previous findings before strategically adding conditions or measures that can provide further insights (that is, *extensions,* cf. constructive replications in Hüffmeier et al., 2016). While many studies replicate main effects before testing interactions, moderators, or mediators, these tests are rarely labeled as replications and often deviate from original study protocols (for example, Röseler et al., 2024; Urminsky et al., 2024). This lack of consistency in naming and methods surrounding replications limits the accumulation of evidence and the tracing of 'failed' replications. One reason for this is that the latter usually remain unpublished. Importantly, 70% of researchers have reported failing to replicate findings at least once (Baker, 2016). Yet, the low publication rate of replications suggests many of these unsuccessful attempts are left in the metaphorical 'file drawer' (Rosenthal, 1979), and are never published, keeping potentially flawed research lines alive (Ferguson, 2012).

Taken together, these developments highlight why replicating results and making these results more visible are fundamental to producing reliable, trustworthy science (Anvari & Lakens, 2018; Wingen et al., 2020). While fostering a replication culture is vital, choosing replication targets comes with its own challenges (see Field et al., 2019, for a similar perspective). Relying on findings from a single sample is risky, and can lead to a waste of research resources and a loss of trust in science (Isager et al., 2024). In this context, fostering a culture of replication offers benefits beyond merely assessing individual claims (Feldman, 2025). The expectation of future replication can, for example, improve reporting practices, making research more reproducible, reducing errors, and potentially even preventing fraud (Soderberg et al., 2021). Shifting incentives toward replicable findings rather than novelty (or at least giving them equal attention) could enhance scientific rigor. Additionally, replications can generate open materials and code, further facilitating future research. Replications are also increasingly integrated into research training, offering valuable opportunities for students and fostering international collaborations through large-scale, multi-lab studies (for example, the Many Labs projects; Quintana, 2021; Wagge et al., 2019).

Despite these promises, existing estimates suggest that between 0.2% and 5% of published studies in psychology are replications, with even lower rates in other fields (see Clarke et al., 2024, for results on the 100 highest-impact psychology journals from 2010–2021; Hardwicke et al., 2021; Makel et al., 2012, for results on the 100 psychology journals with the highest 5-year impact factors since 1900). While replications are currently rarer as compared with original studies, there is also no standardized way for indexing them. Consequently, tracking replication outcomes remains particularly challenging, making it difficult to accurately estimate their prevalence. Developing comprehensive databases of replication studies is one way to remedy this and help to prominently recognize the value of replications at the same time.

Tracking replications systematically

Practical solutions are essential to shift replication studies from a niche effort to a mainstream scientific practice. To achieve the aim of making replications more mainstream and visible, we created a comprehensive database of replications as a resource for research and teaching. At present, the *FORRT Replication Database* (FReD) contains a large index of original studies, their replications, and their raw statistics and effect sizes (n = 1,118 original articles and n = 1,137 replication references from 151 different journals and 167 contributors as of 2025-02-11; Chawla, 2024; Röseler et al., 2024). With over 160 researchers at the time of publication having contributed to the project since its conception in April 2022, we aim for this resource to be a living, community-driven solution for collecting, updating, and disseminating replications, as well as capturing a broad range of past results and aggregating knowledge to assist both research and teaching (as done routinely for living meta-analyses; Nikolakopoulou et al., 2018; and community-augmented meta-analyses; Burgard et al., 2022).

This database is further embedded within the *FORRT Replication Hub* (https://forrt.org/replication-hub), a comprehensive and living resource where authors, reviewers, educators, and editors can log and access replication studies. In this hub, the *FORRT Replication Database* (FReD) hosts a strong infrastructure providing information about replications, and features a large and growing list of resources: 1) The FReD Explorer (see Figure 1) is a database of original studies and their replications; 2) The FReD Reference

Annotator (see Figure 2) is a tool to check reference lists for replications listed in that database; 3) A list of large-scale replication projects. This centralized resource facilitates finding replications in the first place, stimulates discussions amongst scholars from different disciplines, and eases accessibility and integration into scholarly workflows. Moreover, it facilitates the citation of replications alongside original studies, making them easier to incorporate into future research and education. In addition, the database is available to meta-scientists for integration into other platforms, and forms the foundation for dissemination tools such as browser plug-ins that are currently under development.

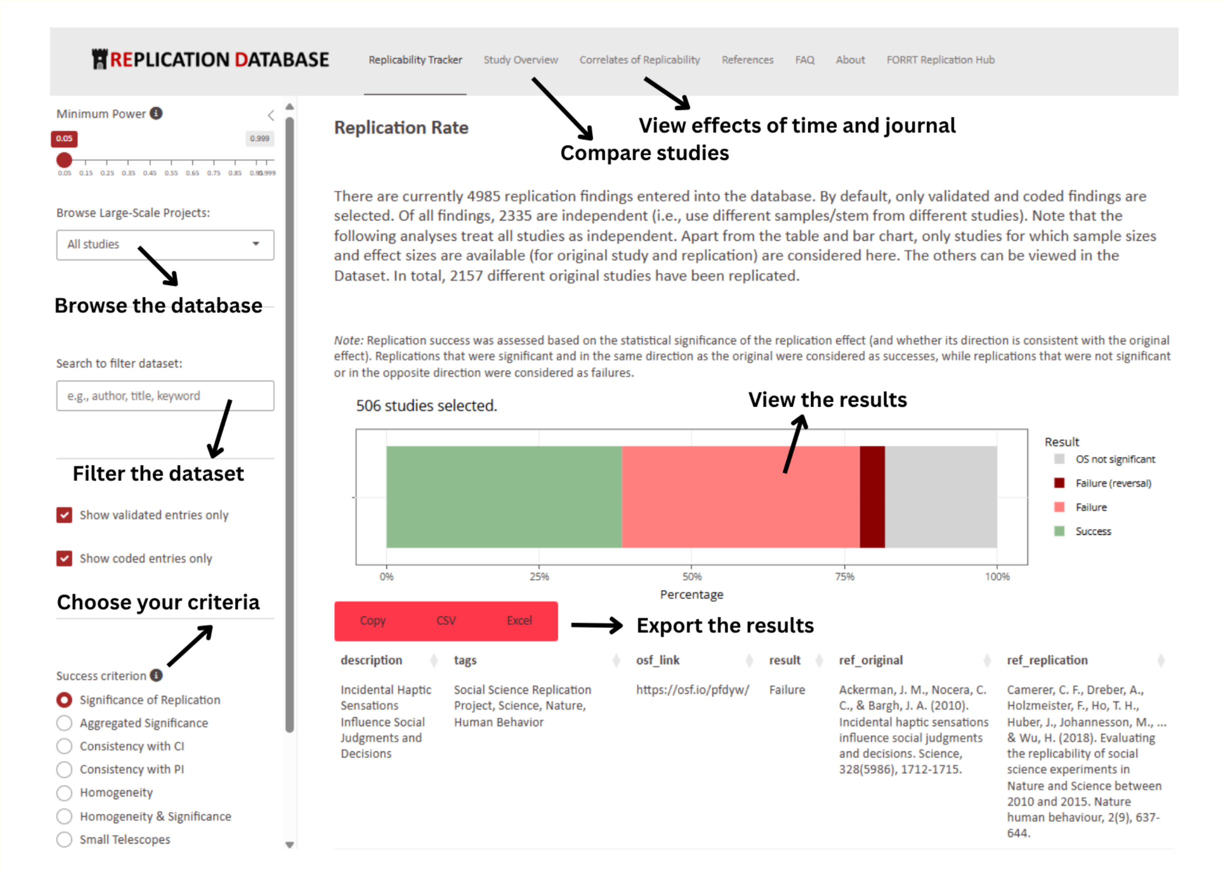

Figure 1. The FORRT Replication Database (FReD) Explorer (as of August 2025), which includes an automated summary of selected replications and success rates as well as filtering options for minimum replication power, project type (for example, Many Labs, Registered Reports, individual replications), validation status, and replication success criterion.

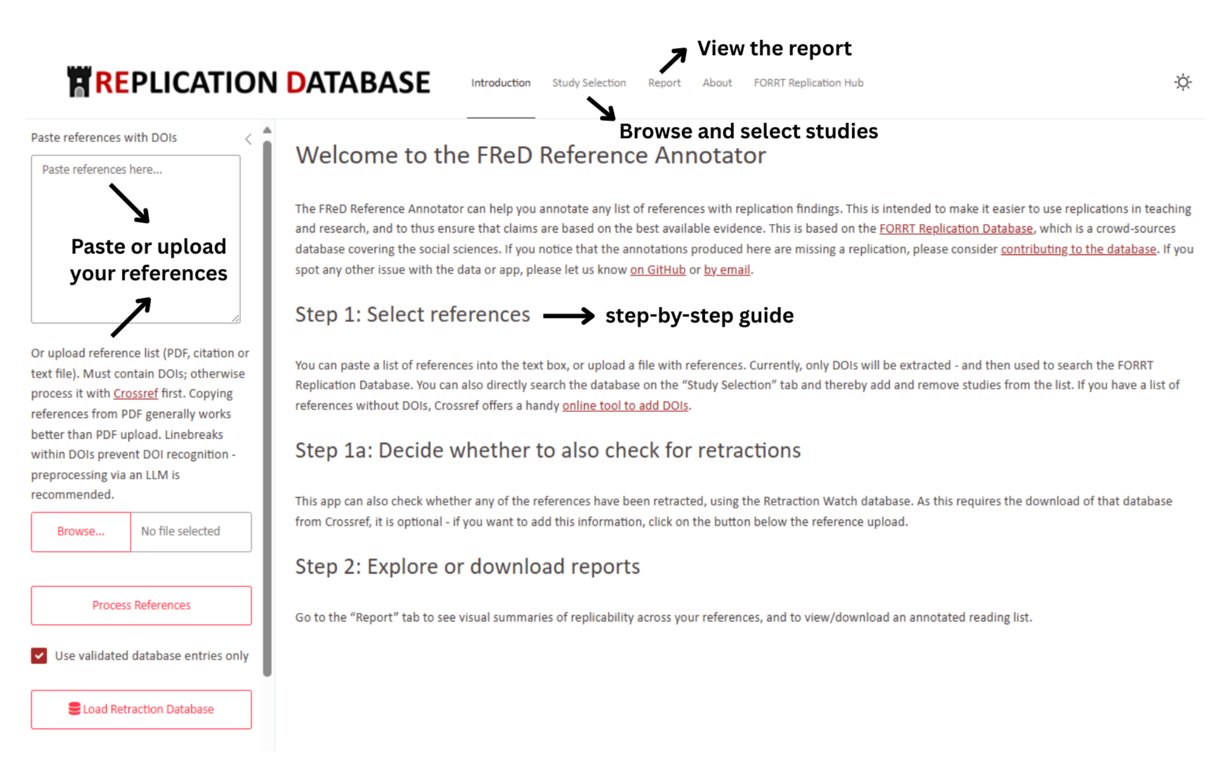

Figure 2. The FORRT Replication Database (FReD) Annotator (as of August 2025), which includes the ability to check reference and reading lists in order to identify pertinent replication studies.

Historically, the initial version of the database was created by gathering instances of replication failures and successes from various sources such as scientific mailing lists, blogs, and social media platforms (LeBel et al., 2018; see also the *FORRT Replications & Reversals* project; https://forrt.org/reversals), enabling teachers and educators to include replications more readily in their curriculum. Subsequently, participating volunteers at FORRT contributed information about replication studies from their respective subfields over multiple years and at various hackathons starting in 2018. These studies were then sorted by the effect or claim, and the collected information was recorded for each study, which included the citation of the study, as well as the study design, sample sizes, and effect sizes of both the original and replication work.

This database does have some limitations worth noting. Due to the self-selected sample of studies, we explicitly refrained from presenting simple summaries or inferential statements about fields or subfields based on the database alone in this manuscript. Furthermore, the resource is not an exhaustive list of replications or even 'failed' replications, as our initial collection process was biased towards famous original works, and surprising replication results may have been identified more easily by contributors in their respective fields. However, new evidence about many effects is added weekly (still largely volunteer-driven and -dependent, with recent financial support from the Center for Open Science) and we are making efforts to safeguard against such selection biases, which will become less of a problem with the rising popularity of our database. Lastly, our own effort to collate quantitative features of replications has its own subjectivity and researcher degrees of freedom. For instance, the original papers often consist of a series of experiments testing several hypotheses and reporting several statistical analyses, and volunteers may choose to add only experiments or effects they subjectively consider to be most pertinent.

Making replications more visible

Once researchers begin to conduct more replications, the next challenge is ensuring that replications become a more easily accessible, valued, and normative part of scientific practice. Key interested parties, including researchers, journals, funders, and policymakers, play critical roles in embedding replication into the research culture (Evans et al., 2022).

The full value of replications can only be realized if they are systematically incorporated into grant applications, publications, and educational curricula. This integration will increase the citations and recognition of replication in the academic community. For example, educators could include replication studies in their syllabi to ensure students build their work on a solid foundation of robust findings and let their students conduct their own small-scale replications (Frank & Saxe, 2012; Hawkins et al., 2018; Kohrs et al., 2023; see Pennington, 2024, for a reflection).

Our own bottom-up efforts need to be reinforced by top-down support from journals and funders. This includes providing explicit incentives for replication research, establishing more replication-specific journals, and revising manuscript evaluation criteria to reduce the emphasis on novelty and innovation during the review process. For instance, a few journals already explicitly invite and publish replication studies (e.g., the journal *Replication Research*, http://replicationresearch.org), and initiatives like the *Registered Reports* format incentivize replications by reviewing study designs before data collection, thus reducing publication bias (Scheel et al., 2021). Especially high-impact journals introducing a dedicated article type to promote replications and regularly releasing special issues on this topic would set strong examples for the community and might further stimulate literature databases and search engines to add 'replication' filters to their setup. Moreover, funders like the Dutch Research Council (NWO) and the German Research Foundation (DFG) already offer grants for replication studies.

In addition, universities and other educational institutions can be supported to adapt curricula that prioritize transparent and robust science, using resources such as *FORRT's Lesson Plans* (Pownall et al., 2024; https://forrt.org/lesson-plans), *Clusters* (https://forrt.org/clusters), and *Curated Resources* (https://forrt.org/resources). Lastly, researchers, science communicators, and journalists should shift away from highlighting "sensational" findings (see Sumner et al., 2016) and instead promote research focused on replicability, metascience, and robustness.

Judging replication results

Replication plays a critical role in ensuring the robustness and reliability of scientific claims, but it is vital to acknowledge the complexity behind failed replications. Replication failures can arise for many reasons, and understanding these reasons is essential to fostering a constructive — rather than punitive — approach to scientific progress. Potential explanations for low replicability range from questionable research practices and publication bias to more inherent issues such as measurement error, the inherent heterogeneity of social and psychological phenomena, or the heterogeneous methods of measuring them (Meehl, 1978).

One significant factor is the historic and widespread issue of low statistical power. Studies with insufficient sample sizes for the effects they are intending to examine, particularly in the social sciences, are more prone to false positives and inflated effect sizes. In addition, measurement precision has been suggested to affect power (for an example in neuroscience, see Nebe et al., 2023). Furthermore, the so-called 'crud factor' — the tendency for almost everything to be weakly correlated — makes it challenging to distinguish meaningful effects from statistical noise (see Bakan, 1966; Mehl, 1990; Orben & Lakens, 2024). This means that studies with large sample sizes may detect effects that lack real-world significance, highlighting the need for new and context-dependent thresholds for clinical or practical meaningfulness when interpreting effect sizes.

Moreover, it is essential to recognize the broader context in replication outcomes. Social, cognitive, and behavioral effects are not universal and may vary across factors such as time, population, location, or context. Heterogeneity in study conditions can cause genuine effects to fail under different circumstances, but this does not necessarily invalidate the original findings. There is also ongoing discussion on the exact distinction between direct and conceptual replications, which may influence interpretation of replication results (see Derksen & Morawski, 2022). Instead, replication failures can help identify the above-mentioned boundary conditions, and clarify where and when certain effects are likely to hold, thus adding to the diverse knowledge surrounding a certain effect. As such, it is important to approach replication failures with nuance, recognizing that they may reveal the presence of moderators or mediators rather than indicating a lack of support for the hypothesis.

The credibility revolution underscores systemic factors pushing science toward greater transparency, robustness, and replicability (Nosek et al., 2022). The increased scrutiny of research practices, the growing emphasis on open data, analysis code, and materials, and the demand for higher methodological standards all contribute to a more accountable and reliable scientific process (see the *Registered Reports* format; Soderberg et al., 2021). While there is no consensus on how to classify replications as being on a spectrum between successful and failed, ongoing efforts focus on identifying factors that enhance replicability by analyzing replication outcomes (Boyce et al., 2023). Rather than only being seen as a failure, the credibility revolution gives us the chance to drive reform, fostering a culture of reproducibility and rigorous evaluation that strengthens the foundations of empirical research going forward (Korbmacher et al., 2023).

Replications in the future

We propose four key features that a scientific ecosystem can adopt to take full advantage of replication research going forward: 1) findability of replications, 2) widespread adoption of open science practices, 3) education and training surrounding replications, and 4) incentivizing replications.

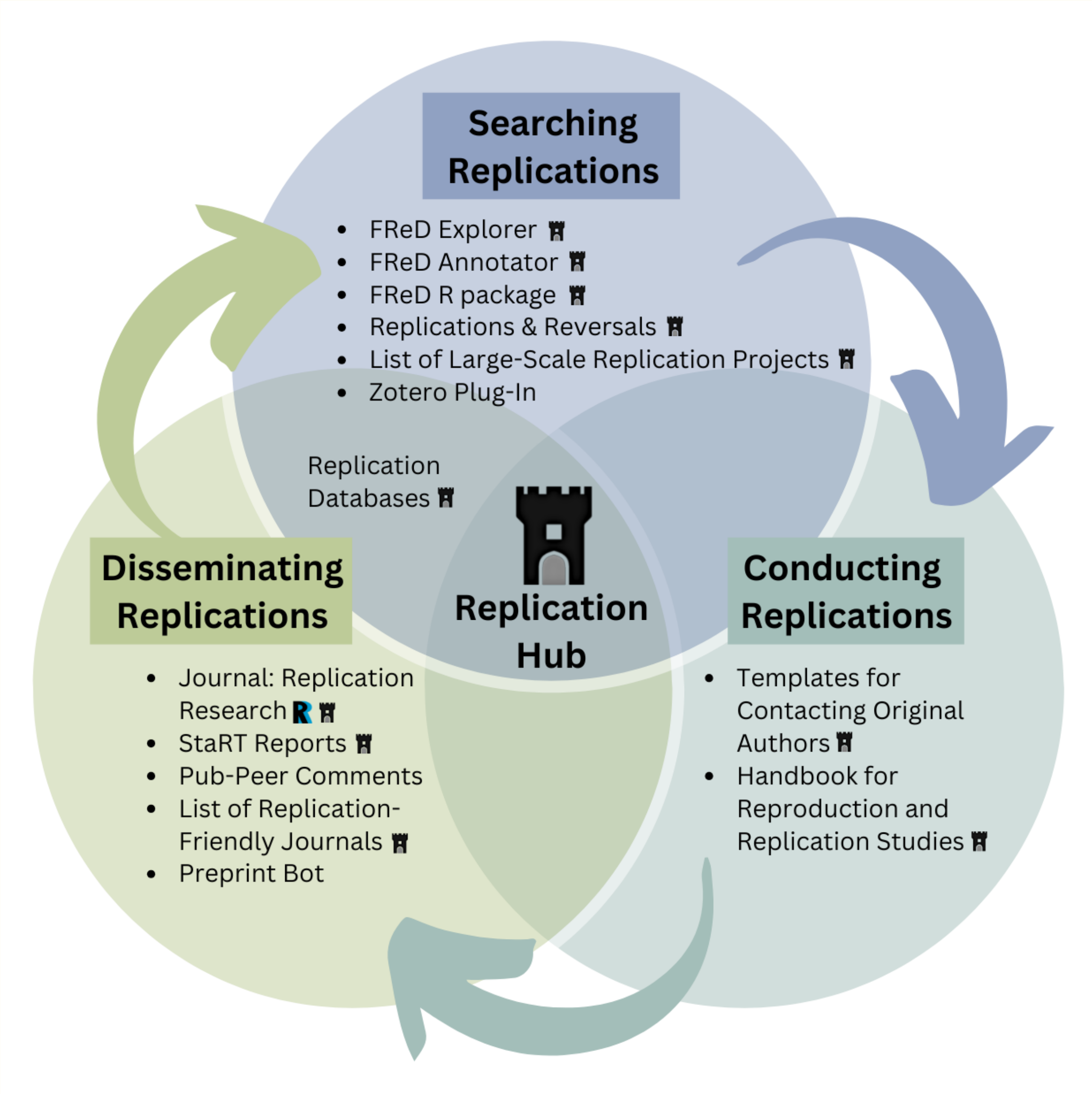

Figure 3. The FORRT Replication Hub. The FORRT tower icon indicates that a resource is available in the FORRT Replication Hub. All other projects are currently in development.

First, replication studies should be easy to find so they can be easily considered in one's new research. It would be ideal if search engines could automatically tag replication studies. However, this might be an error-prone process with artificial intelligence being needed to identify which journal articles that cite earlier studies are replications of those studies and which (merely) cite the earlier studies (Google Scholar, for instance, already tracks citations). Nonetheless, human, crowd-sourced validation is likely to remain essential to guarantee accuracy and interpretative nuance, even as automated artificial intelligence systems improve – an approach we have adopted in developing the *FORRT Replication Hub* (see Figure 3). Our Hub consolidates human-generated replication-related projects – in particular, the FORRT Replications & Reversals project, the *FORRT Replication Database* (FReD), and a handbook for conducting replication studies. In addition, this hub includes a dedicated journal *Replication Research* (http://replicationresearch.org) that we are developing with stakeholder engagement. Ultimately, we envision this hub to evolve into the go-to platform for academics and students to search for and publish replication studies, to engage in interdisciplinary dialogue about replication, and to consult in methods and statistics courses. Other innovations include *PubPeer* (https://pubpeer.com), which allows people to comment on original studies, highlight replications, and discuss conflicting results, and tools like Zotero plug-ins and Scite.ai that can flag articles with replication discussions and retraction notices, enabling more efficient literature reviews. To further address findability, we propose establishing dedicated platforms for replication studies, such as curated pre-print collections, databases, and journals dedicated to replication studies. These platforms would provide easier pathways to publish, make replication efforts findable through search functions, promote citation of replications, and enable interdisciplinary discussions on replication standards. If not published alongside each other, replication attempts could be systematically linked with the original studies to increase visibility and support cumulative research. Our *FORRT Replication Hub* and *FORRT Replication Database* are pioneers in this process.

Second, primary research needs to adopt open science practices across the board whenever possible. At a minimum, published studies should include detailed methods descriptions, open materials, open data (when ethically appropriate), and open analysis code. Moreover, research should be preregistered (if possible) or, better yet, take the form of *Registered Reports*, to ensure that confirmatory and exploratory analyses are clearly labeled. Unfortunately, transparency is still uncommon (Hardwicke et al., 2024). Furthermore, authors are not very responsive to requests to provide data (out of 65 contacted researchers from studies where data was 'available upon request', only 27% actually shared data; Hussey, 2025), and rates of data sharing differ by discipline, with psychology on the lower end (Tedersoo et al., 2021). These factors can make precise replication difficult – or even impossible. For example, Errington et al. (2021) could only replicate 50 experiments from 23 papers (even though they initially set out to replicate 193 experiments from 53 high-impact papers). We suggest that journals have a key role to play: they should enforce a rule that transparency is the default for submitted manuscripts, as several journals have done recently (for an overview, see Hardwicke & Vazire, 2024; for an example in the journal *Religion, Brain & Behavior*, see Wildman et al., 2024).

Third, researchers should be trained in replication-related methodologies, such as equivalence testing (Lakens, 2017, 2022), verification of original studies (Feldman, 2025), reproducibility tests (Lindsay, 2023), sample size planning and power analyses (Simonsohn, 2015), effect size and confidence intervals calculations of original studies (Jané et al., 2024), preregistrations (Brandt et al., 2014), and replication success criteria (LeBel et al., 2019).

In fact, we want to stress that teaching about replication research needs to be a major cornerstone of teaching science and the scientific method (Bauer et al., 2025; Boyce et al., 2023; Frank & Saxe, 2012; Hawkins et al., 2018), for example as part of undergraduate training (Button, 2018; Chopik et al., 2018; Grahe et al., 2012; Jekel et al., 2020; Pownall et al., 2023, 2024; Wagge et al., 2019).

Fourth, replication research needs to be rewarded. Universities and funders should officially recognize the value of replication studies, particularly when they contribute new theoretical insights, methodological advancements, or extensions of prior findings, rather than sideline them, as several key funding bodies currently do. For example, the Research Excellence Framework (REF) exercise in the United Kingdom evaluates a nominated study's originality, significance, and rigour. As replications arguably score highly on significance and rigour, such evaluation exercises should make reviewers aware to provide explicit recognition and reward for replication attempts. Updating journal submission guidelines to actively promote the submission of replication studies could include a Pottery Barn rule — "you break it, you buy it" (Srivastava, 2012) — which requires journals to publish replications of studies they previously published (a policy implemented by *Royal Society Open Science*). Editors and journals might even actively suggest replication attempts for studies on which new research is building. A significant proportion of recent replication research has involved large-scale efforts, sometimes comprising as many as a hundred independent studies (see Open Science Collaboration, 2015). Prestigious journals often favor such projects because of their extensive sample sizes and scope — something single-lab teams can rarely achieve (but see Boyce et al., 2023).

Some progress has been made, with 131 journals implementing policies that support replication studies, adhering to Transparency and Openness Promotion (TOP) Factor level 3 standards (as of February 2025; see also https://topfactor.org and Mellor et al., 2025). On the other hand, funders such as the Deutsche Forschungsgemeinschaft (German Research Foundation, DFG) tend to support large batches of replications, which puts smaller replication studies at a disadvantage. This model is not sustainable, as replication studies in specialized areas often require specific resources, equipment, or expertise, making large-scale replications impractical for specific fields. It can take years to conduct such extensive replications, and a single replication of a longitudinal study may demand as much effort and resources as several cross-sectional replications. Given the central role of replications, a more systematic evaluation process based on cost-benefit analyses could help determine which studies are most urgently needing replication, ensuring that resources are directed where they are most valuable (Feldman, 2025; Isager et al., 2023, 2024). How to choose such studies and the metrics to evaluate them on is a key topic for future investigations.

Conclusion

Replications are intricate and complex. We recommend that the scientific community adopts a pluralistic and dynamic approach to replication — one that appreciates the various reasons why effects may fail to replicate and avoids treating every replication failure as a definitive refutation. Replications should be valued for their role in refining theories and improving the cumulative understanding of scientific phenomena.

Furthermore, as we integrate replication more deeply into research practices, we have the power to ensure that these efforts are properly published, found, used, taught, and valued. Initiatives such as the *FORRT Replication Hub* provide a platform to make replications more visible, accessible, rewarding, and integral to scientific discourse. By systematically linking replication attempts to original studies, fostering interdisciplinary discussions, and by publishing (and thereby rewarding) high-quality replication studies, our *FORRT Replication Hub* hopes to overcome the barriers that have historically limited the role of replication in science. Ultimately, replications should not be seen as a final verdict but as a dynamic part of the scientific process that drives progress through a continuous and cumulative reassessment of claims and evidence.

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