Development and Psychopathology (2025), 1–8
doi:10.1017/S0954579425100552

CAMBRIDGE UNIVERSITY PRESS

Regular Article

Improving research on developmental psychopathology with Registered Reports

Moin Syed[1] and Willem E. Frankenhuis[2,3]

[1]Department of Psychology, University of Minnesota, Minnesota, USA, [2]Evolutionary and Population Biology, Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, Amsterdam, The Netherlands and [3]Max Planck Institute for the Study of Crime Security and Law, Freiburg, Germany

Abstract

The quality of research across psychology needs improvement. Ample evidence has indicated that publication bias, specifically making publication decisions based on a study's results, has led to a distorted literature (e.g., high rates of false positives). Registered Reports, which can now be submitted to *Development and Psychopathology,* are a recent publication format designed to combat publication bias and problematic research practices. The format represents a shift from a system in which publication decisions are based on the nature of the findings, to one that is based on the quality of the study conceptualization and design. In this invited *Views* article, we introduce the Registered Reports format to *Development and Psychopathology* by arguing that they *can* and *should* be used in developmental psychopathology research. We first describe what Registered Reports are and why they are useful. We then review 10 commonly expressed concerns about publishing Registered Reports – including that they are not appropriate for studies using preexisting data, that they do not allow for exploratory analyses, and that they take too long to publish – explaining why these concerns are unwarranted. We hope that this article will allay concerns about publishing Registered Reports, and that readers will submit them to *Development and Psychopathology.*

Keywords: Credibility; replication crisis; reproducibility; Registered Reports; transparency

(Received 2 July 2025; revised 29 July 2025; accepted 30 July 2025)

What kind of science do we want? This is a broad question, and yet most people can readily provide answers. We want our science to be *reliable*, something that we can have confidence in. We want it to be *rigorous*, relying on state-of-the-art methods and analytic techniques. We want it to be *cumulative*, creating a sense of progress toward our shared goals. We want it to be *meaningful*, connected to the people we seek to help. We want it to be *healthy*, supported by incentives that promote, rather than undermine, the well-being of scientists.

Unfortunately, we have been falling short of these ideals. The replication crisis in psychology that began in the early 2010s (Spellman, 2015) consolidated decades of concern (Gelman, 2016) about how we approach our science. Increasing awareness about questionable research practices, p-hacking, hypothesizing after the results are known (HARKing), publication bias, toxic "publish or perish" cultures, low statistical power, statistical literacy, lack of diversity, generalizability, low-quality theory, and practical relevance, among others, shook the foundations of the field (Munafò et al., 2017; Open Science Collaboration, 2015).

Problems of research practice have been identified across the full range of psychology, including social psychology (Nosek & Lakens, 2014), clinical science and psychopathology (Tackett et al., 2017), developmental (Gennetian et al., 2022), personality (Sotola & Credé, 2023), and many more. Moreover, such concerns have also been observed in other disciplines, including biomedicine (Errington et al., 2021; The Brazilian Reproducibility Initiative et al., 2025), genetics (Collins et al., 2003), behavioral ecology (Deressa et al., 2023), environmental sciences (Yang et al., 2022), criminology (Bruinsma, 2016), public health (Harris et al., 2018), political science (Lupia & Elman, 2014), and physics (Junk & Lyons, 2020), among many others (Rahal et al., 2022). Whereas the nature and degree of problems varies across fields, any discipline that has engaged in self-examination of its research processes has found something to be desired.

What about the field of developmental psychopathology? To what extent have researchers within this field engaged in self-examination and committed to practices that would improve the state of the science? In our view, not enough, and we can certainly do better. In this *Views* article, we argue that it is high time that research in developmental psychopathology take the problems surfaced via the replication crisis seriously and begin to take steps to improve the state of the science. We do so by advocating for the integration of Registered Reports within developmental psychopathology, which holds great promise for developing the kind of science we all want. The core message of this article is that researchers studying developmental psychopathology *can* and *should* make use of the Registered Reports format. We understand that some readers may be skeptical about whether or not Registered Reports are appropriate for the types of research they conduct. Accordingly, after introducing the format, we address 10 common myths or assumptions about Registered Reports,

Corresponding author: Moin Syed; Email: moin@umn.edu

Cite this article: Syed, M., & Frankenhuis, W. E. (2025). Improving research on developmental psychopathology with Registered Reports. *Development and Psychopathology*, 1–8, https://doi.org/10.1017/S0954579425100552

debunking nearly all of them. We conclude that the format is both possible and desirable for the variety of research approaches evident in the field.

Registered Reports: a publication model for modern times

With the identification of problems also comes proposed solutions. For example, some have argued for making research data, analytic code, and study materials openly available, permitting the scientific community to fully evaluate the work that underlies what is reported in articles (Vazire, 2017; Wicherts et al., 2006). Others have advocated for preregistration, which pertains to creating a public, time-stamped, unalterable document that outlines the study design and/or analysis plan prior to implementation (Nosek et al., 2018). Registered Reports reflects an extension of preregistration, of sorts, and is a powerful intervention because it simultaneously addresses several long-standing issues in the field (Chambers, 2013).

The unreliability of our scientific knowledge has been baked into the system via our long-standing publication model. Many years ago, Sterling (1959) identified a 97% "success" rate across four journals in psychology, meaning that 97% of published articles reported statistically significant support of the central hypotheses. This success rate is strikingly similar to what has been observed in recent studies (Open Science Collaboration, 2015; Scheel et al., 2021). Such success strains credibility. Either researchers in psychology are particularly clairvoyant (Bones, 2012), only test hypotheses that are true (Ingre & Nilsonne, 2018), or there is some kind of flaw in our publication model.

We favor the latter explanation, and can clearly identify the flaw in the model: publication bias. Publication bias refers to a variety of behaviors that lead to distortions in the scientific literature (Ferguson & Heene, 2012). These behaviors can come from journals, editors, and reviewers, who show bias *towards* statistically significant findings (Mahoney, 1977), including those that are seen as novel or surprising. They also can show bias *against* findings that run contrary to prevailing scientific or sociocultural views. These behaviors also come from authors, who select which results to report and which manuscripts to submit for publication based on their expectations of how journals will respond. Publication bias provides a context that incentivizes undesirable research behavior. That is, problems such as questionable research practices, p-hacking, and HARKing primarily exist due to the pressures of needing statistically significant results in order to get published (Bakker et al., 2012).

It doesn't have to be this way. The current publishing system is not natural nor inevitable; it was a system created in a particular time and context, which has evolved only minimally with changing technology and scientific understanding. In the current system we primarily select articles for publication based on the *nature of the results*, asking the questions: Are these findings interesting? Are they novel? Are they useful? Selecting for the nature of results is how we get exciting findings based on flawed methods and statistics, and is how we get massive publication bias.

An alternative, stronger approach is to instead select articles for publication based on the *quality of the conceptualization and design*. This is the intention behind Registered Reports (Chambers & Tzavella, 2022). Registered Reports represent a break from our traditional publishing model by separating the review process into two stages (Figure 1). At Stage 1, authors submit the Introduction, Method, and Planned Analysis sections to a journal for peer review. They do this before conducting the study, in the case of new data collection, or before conducting the analysis, in the case of preexisting data. From there, the review process looks similar to the traditional model: reviewers and editors provide feedback on the study plans, the authors revise their plans, and they continue this cycle until all parties are satisfied. At that point, the journal issues an in-principle acceptance, meaning that not only can the researchers now carry out the study, but that the journal has committed to publishing the study *regardless of the results*. Once the researchers complete the study, they add the Results and Discussion sections to the previous Stage 1 manuscript to create a Stage 2 manuscript, which is submitted back to the journal for review. At this stage, the job of the editor and reviewers is to ensure that the authors carried out the plans as specified and did so competently, and that they report deviations from the plans in a transparent and well-motivated way. Because the journal has already committed to publishing the study, there cannot be any requests to revise the conceptualization or design of the study, and the paper cannot be rejected because it yielded null or mixed results. Thus, rather than asking, "are these results interesting?," with Registered Reports we ask the question, "is this study informative, regardless of the results?"

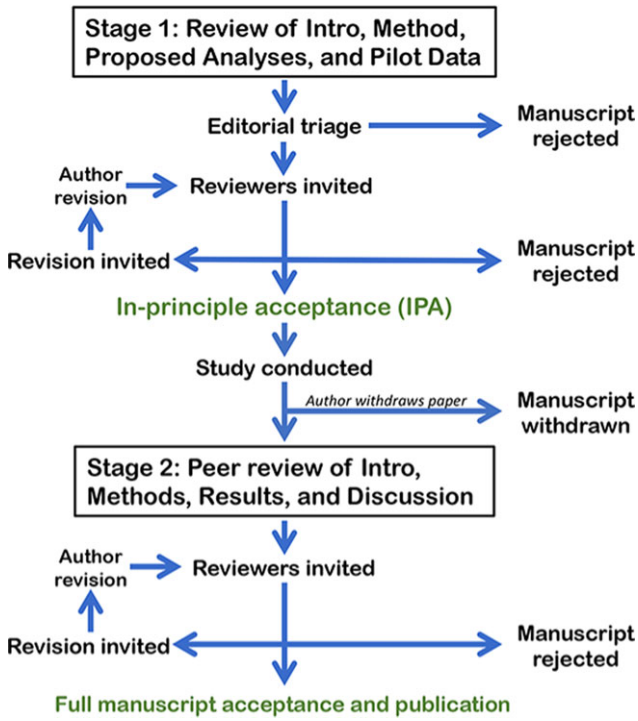

Figure 1. A full workflow for the review process of Registered Reports. Used with permission from the Center for Open Science under CC BY 4.0.

There are now over 300 journals across the sciences that have adopted Registered Reports, with the majority being in psychology (Montoya et al., 2021). Many of these include outlets with close ties to developmental psychopathology, including *Developmental Psychology*, *Child Development*, *Developmental Science*, *Infant and Child Development*, *Developmental Cognitive Neuroscience*, *Journal of Psychopathology and Clinical Science*, *Personality Disorders: Theory, Research, and Treatment*, and *Nature Human Behavior*, as well as others (see full list: https://www.cos.io/initiatives/registered-reports).

The empirical evidence investigating Registered Reports is promising, albeit limited. There is some initial evidence that

https://doi.org/10.1017/S0954579425100552 Published online by Cambridge University Press

reviewers of Registered Reports rate them as more rigorous than standard reports along numerous dimensions, both before and after knowing the findings of the study (Soderberg et al., 2021). Scheel et al. (2021) found that the frequency with which the first hypothesis was supported in standard reports was 96%, compared with only 44% in Registered Reports, with the difference being similar for replication studies as for original research. Allen and Mehler (2019) similarly found that 40% of hypotheses were supported in Registered Reports, using a sample that partially overlapped with the one used in Scheel et al. (2021)[1]. These observations align closely with our own experience as editors and authors of Registered Reports, where we suddenly see null results appear everywhere.

At the same time, not everything is sunshine and roses. Journals are not always sufficiently clear in their policies and procedures for Registered Reports (Montoya et al., 2021). Moreover, although computational reproducibility is higher with Registered Reports than standard reports, it is still not as high as one would like or expect (Obels et al., 2020). Finally, the small set of studies to date has not yet been able to rule out several potential confounds in comparisons of Registered Reports and standard reports, such as differences in the riskiness of the hypotheses that are tested or researchers' motivations and diligence when reporting on the study (see Scheel et al., 2021, for further discussion).

Despite the steady increase and generally positive evidence for Registered Reports, in our view the uptake among researchers in developmental psychopathology has been slow. The establishment of Registered Reports at *Development and Psychopathology* is thus a welcome change, and one that meets a call that has come from within its pages (Hanson et al., 2024; see also Nivison et al., 2025). Moreover, there are some within our research community who have already conducted Registered Reports, including studies based on existing datasets, such as Vermeent et al. (2024) using the Adolescent Brain Cognitive Development study and Nivison et al. (2024) using the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development.

Registered Reports also have the potential to improve the well-being of scientists (Frankenhuis & Nettle, 2018; Wagenmakers & Dutilh, 2016). First, they reduce the chokehold of needing to find "positive" results; rather, we can just relax while letting the data speak. Second, they reward quality, which is under our control; rather than outcomes, which are not (or at least, should not be). Third, they enable us to explore data transparently and comfortably; without the uneasy feeling that we are blurring the lines between preplanned and data-driven analyses. Fourth, the review process for Registered Reports seems to be more constructive than that for standard reports. After all, there is more scope for reviewers to provide suggestions, and for authors to incorporate them, before a study has taken place. Finally, Registered Reports can improve the meaningfulness of our work, as part of the review process may involve assessing whether or not the study is worth doing; that is, will the study make the contribution to the scientific literature or have the translational impact that the authors hope it will? Altogether, a win-win for research *and* researchers.

In our experience, researchers' lack of familiarity with the format and how it works is a major barrier to them pursuing Registered Reports in their own work. Accordingly, in the remainder of this article, we address 10 commonly expressed concerns, arguing that they are either myths or not as serious as imagined (see Briker & Gerpott, 2024, for some data on beliefs among researchers in management and applied psychology).

Registered Reports are appropriate for research with existing datasets

The very common concern that Registered Reports are only appropriate for certain types of study designs is almost always wrong. Much of the initial development and implementation of Registered Reports did indeed occur in the context of new data gathered via lab experiments (Chambers, 2013), a context that does not reflect the full breadth of research in developmental psychopathology. Rather, our field relies heavily on longitudinal data, analyses of secondary data, and potentially identifying data, all of which are less controlled than lab experiments.

The good news is that this problem has been long known and fully addressed. A recent special issue of *Child Development* featuring Registered Reports (Syed et al., 2023) included articles across nearly the full spectrum of developmental science, including lab studies, interventions, meta-analysis, and national public data. Similarly, a special issue of *Journal of Research in Personality* featured studies using longitudinal, secondary, and sensitive data (Tackett et al., 2021). Two special issues have focused specifically on Registered Reports with secondary data (Davis-Kean et al., 2024; Syed & Donnellan, 2020), and there is both a template for preregistering secondary data analyses (https://osf.io/x4gzt/), and an associated tutorial paper (van den Akker et al., 2021). Guidelines and recommendations have also been developed for Registered Reports with qualitative studies (Demkowicz & Hickman Dunne, 2024; Karhulahti et al., 2023). Peer Community in (PCI) Registered Reports – a journal-independent preprint review service – has developed extensive resources and guidelines for preparing Registered Reports that covers a wide variety of study designs (see https://rr.peercommunityin.org/; (PCI Registered Reports, n.d.).

Whereas Registered Reports can be conducted with preexisting data, doing so requires close consideration of researchers' prior knowledge of the data. The situation is not as simple as thinking dichotomously in terms of new or existing data. With large-scale datasets, researchers may have previously worked with some measures or sub-samples but not others, or may have worked with prior waves in an ongoing longitudinal project. All of these scenarios may be well-suited to conducting a Registered Report. What is important is that researchers are transparent about their experience with the data, and we suggest including a subsection titled "Prior knowledge of the data" to make it clear to readers (see Duncan et al., 2024 and Spiegler et al., 2024, for examples). PCI Registered Reports have developed a helpful bias-control taxonomy for researchers to understand and declare their prior knowledge of the data, if any (PCI Registered Reports, n.d.).

An additional consideration when conducting Registered Reports with preexisting data is that the review process may be more likely to identify "fatal flaws" in the Stage 1 proposal that cannot be addressed as the data have already been collected, a situation not relevant to Registered Reports based on new data collection. Thus, altogether there are clearly additional constraints when it comes to conducting Registered Reports with preexisting data, but they are nevertheless possible and, indeed, desirable.

[1]Liu et al., (2025) found a rate of 63% significant results in Registered Reports compared with 86% in standard reports, after excluding replication papers. We cite this paper with caution, however, due to clear errors in the coding, most notably that only 89% of Registered Reports were coded as being preregistered, when the only possible value is 100%.

https://doi.org/10.1017/S0954579425100552 Published online by Cambridge University Press

Registered Reports allow for exploratory research

Registered Reports are perfectly consistent with conducting exploratory analyses. Researchers are welcome to conduct as many nonregistered exploratory analyses as they wish, but they must be clearly labeled as such. Moreover, the inferences based on these analyses need to be appropriately calibrated (e.g., as having weaker evidentiary value than confirmatory analyses, or as generating hypotheses to be tested in future research), and they cannot be overly highlighted in the manuscript (e.g., the abstract cannot report only the exploratory findings, without mentioning the outcomes of the preregistered confirmatory analyses).

Some researchers claim to conduct only exploratory research, and so the hypothesis-testing focus of Registered Reports is not well-suited. This may be the case and that is fine; exploratory research is crucial for science. If you are truly engaging in an exploratory study, then the Registered Report format might not be a good fit. The argument is not that *every* study needs to be a Registered Report. However, it is crucial that exploratory research is reported as such, rather than masquerading as confirmatory. As Daniel Nettle (2021) notes, "People often misunderstand the preregistration revolution as being the requirement to only do confirmatory analyses. But (. . .) it's not this at all. It's the freedom to do confirmatory analyses when these are appropriate, and exploratory ones when these are appropriate, and be clear and unashamed about which it really is: don't muddle the one with the trappings of the other."

That said, in our experience, researchers will often claim they are conducting exploratory research, but in reality they have clear hypotheses that they seek to test – sometimes more tentatively referred to as "expectations." Such an approach is ill-advised; if you have hypotheses, you should state them clearly and test them appropriately, preferably via a Registered Report.

Registered Reports can increase theoretical rigor

A concern expressed about science reform efforts is that they are too focused on procedures – checklists, standards, and rules – at the expense of core concerns such as theory, validity, and inference (e.g., Penders, 2022). At first glance, this criticism could be levied at Registered Reports, which seem to emphasize planning and protocol over serendipity and exploration. As we have already discussed, and will elaborate later, these perceptions are ill-founded. In fact, Registered Reports can facilitate theoretically-rich research and are well-suited to improving theory. Psychology has long been plagued by a reliance on vaguely specified verbal theories (Borsboom et al., 2021; Frankenhuis, Panchanathan, et al., 2023; Fried, 2020; Guest & Martin, 2021; Smaldino, 2020; van Rooij & Baggio, 2021). Despite the fact that theory is central to research on developmental psychopathology in general, and in the pages of *Development and Psychopathology* in particular, the vast majority of theories in the field are gravely underspecified. That is, there is a lack of clarity about the observations that would be consistent or inconsistent with the theory. Rather, most theories are sufficiently flexible that nearly any pattern of data can be claimed as showing support. For instance, a theory can be re-interpreted more expansively to absorb data outside of its original scope (*theory stretching*), or more narrowly so the theory appears more precisely aligned with the data (*post hoc precision*; Frankenhuis, Panchanathan, et al., 2023). Moreover, there are few constraints on the number and type of tests that a researcher can conduct to find support for a vaguely specified theory. Taken together, these practices slow, rather than contribute to, theory development.

Registered Reports can be helpful in this regard. As completed empirical products, Registered Reports will generally provide reliable results that can be used to build and refine theories. The format can also be used to generate stronger tests of existing theories. When implemented well, they encourage greater specificity about predictions that constitute stronger tests of hypotheses than standard reports. The degree to which they do so, however, depends on those involved. It is incumbent on researchers to work to improve specificity as a path to greater theoretical specification, and it is incumbent on reviewers and editors to demand it. A good starting point is to become familiar with the concepts of theoretical and empirical *estimands*, which pertain to what specific quantity we seek to estimate and how we will go about doing so (Lundberg et al., 2021). With more time and experience, researchers can then begin to use computational modeling and simulations as a way to work out their theoretical expectations (Fraley et al., 2013; Frankenhuis, Borsboom, et al., 2023; Frankenhuis, Panchanathan, et al., 2023; Grahek et al., 2021) and even make hypothesis tests machine-readable (Lakens & DeBruine, 2021; Van Lissa, 2023). The value of this level of specificity is evident with replication studies, in which there is often disagreement about whether or not a particular replication attempt was successful in replicating the original result. This situation arises because there is not one criterion for determining replication (i.e., not a single estimand), and so researchers can selectively focus on estimands after their values are known. Setting the terms for what would constitute a successful replication before seeing the results is one way to contribute to a theoretically progressive field. At *Development and Psychopathology*, researchers conducting replications are encouraged to do so as Registered Reports, or even as Registered Replication Reports, which constitute coordination across many independent research labs to each carry out an identical study protocol and then aggregate the results (Simons et al., 2014).

Registered Reports allow for deviations from the research plan

When journals guarantee publication following the in-principle acceptance, that guarantee is conditional on researchers carrying out the study as approved, and doing so competently. But most studies don't go quite as planned. If you have received an in-principle acceptance for your project and anticipate some necessary changes to the study, the best course of action is to get in touch with the editor who issued the decision (Henderson & Chambers, 2022). They may provide approval for the changes, may determine that the changes need to be passed by the reviewers, or perhaps are grounds for withdrawal of the in-principle acceptance. If changes need to be made on the fly (e.g., during a testing session), authors may contact the editor afterwards and explain why they deviated from their plan. In our experience, editors tend to be sympathetic and supportive; however, we are not aware of empirical research on this topic. In general, though, a nice feature of Registered Reports is that they create a system in which dialog between parties is baked into the process, and authors would be wise to take full advantage. If the manuscript ultimately must be withdrawn as a Registered Report, the authors always have the option to conduct the study anyway and submit it as a traditional manuscript (while having benefited from the Stage 1 reviewer feedback).

Registered Reports do not require embracing "open science"

Open science is a broad term with no singular agreed-upon definition (see Silverstein et al., 2024). Parsons et al. (2022)

https://doi.org/10.1017/S0954579425100552 Published online by Cambridge University Press

provided a succinct and inclusive definition: "An umbrella term reflecting the idea that scientific knowledge of all kinds, where appropriate, should be openly accessible, transparent, rigorous, reproducible, replicable, accumulative, and inclusive, all which are considered fundamental features of the scientific endeavor" (p. 312). This definition clearly comprises a vast array of principles and behaviors, some of which individual researchers may value highly, whereas others they may treat with deep skepticism. Some may perceive the heavy emphasis on replicating past studies as misplaced (Feest, 2019) or may be dubious of open science because of its perceived lack of consideration for research focused on diversity in psychology (Fuentes et al., 2022). Concerns about one aspect of open science, then, could lead to a rejection of all others.

The good news is that open science is not "all or nothing" (Corker, 2018), and researchers can and should think about the principles and practices that are most relevant to their research methods and goals (Bergmann, 2023; Nuijten, 2019). Publishing Registered Reports does not require researchers to embrace open science generally or identify with open science in any way. Rather, open science offers a buffet of principles and practices, from which we can select those that are relevant for enhancing the quality and impact of our work (Bergmann, 2023).

Registered Reports offer more benefits than preregistration alone

Preregistration has some overlap with Registered Reports, with a few crucial differences. Registered Reports subsumes preregistration, in that preregistration is automatically a part of the Registered Report publication process – this is the function of the Stage 1 proposal that receives the in-principle acceptance from the journal. Unlike with Registered Reports, preregistrations do not figure heavily into the manuscript review process. Researchers frequently deviate from their preregistration plan, which on its own is not a problem, but these deviations are too often undisclosed in the manuscript (Claesen et al., 2021; Willroth & Atherton, 2024). Moreover, there is evidence that reviewers and editors rarely check the preregistration plans during the review process (Syed, 2025). Most centrally, journals do not commit to publishing a study based on a preregistration. Researchers can produce a high-quality preregistration and engage in detailed reporting, but a journal could still reject the paper if the results are not deemed sufficiently novel or not consistent enough to warrant strong conclusions. Thus, preregistration does not sufficiently contribute to a shift away from selection based on findings and toward selection based on conceptualization and design.

Registered Reports offer greater control over timelines

There is a perception that Registered Reports take longer to publish than standard reports. It is not so clear that this is the case, and there are no good data to bring to bear, partially due to the difficulty in identifying the proper comparison (see Syed, 2022 for discussion). It is true that the *review* process for Registered Reports will likely take longer given that the review is split into two stages. However, because of the in-principle acceptance of the Stage 1 proposal, Registered Reports greatly reduce engagement in the submission-rejection cycle in which manuscripts are "shopped around" until they "find a home." Although we lack the appropriate comparative data, Registered Reports provide researchers with greater control over their timelines and with a sense of comfort that accompanies the certainty that their paper will be accepted at the journal that issued the in-principle

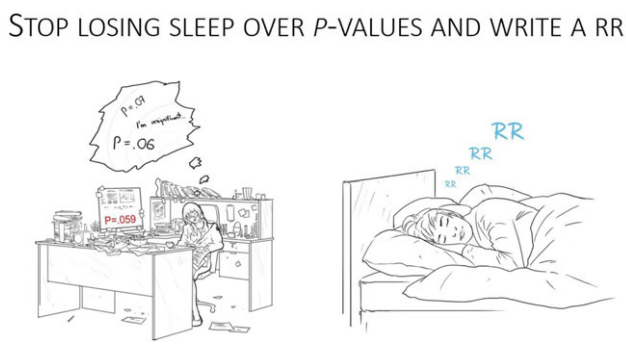

Figure 2. A cartoon illustrating the anxiety over needing significant results in the traditional publishing model vs. the peace of mind that comes with Registered Reports. Used with permission from Henderson (2019) under CC BY 4.0.

acceptance (as illustrated in Figure 2). Additional innovations such as the scheduled review track at PCI Registered Reports, in which reviewers are lined up in advance of a future target submission date, provide researchers with even more predictability and efficiency. The preceding notwithstanding, we are well aware that there is a perception that Registered Reports take longer to publish than standard reports, and absent strong data, those perceptions cannot be empirically corroborated or refuted. Timely review is a concern for all publication formats, across all of the sciences, and as Registered Reports increase in prevalence, so too will data that can speak to this understandable concern.

Registered Reports afford a more positive and collaborative review process

The purpose of the Stage 1 review process is to ensure that the proposed project will be informative of the research questions regardless of the results. This is done, as publishing generally is, with input from reviewers and an editor. Because the study has not yet been conducted, however, there could be concerns about reviewers having too great an influence over the direction and content of the study. For example, reviewers may ask researchers to answer the questions that they would like to see answered (e.g., "In your planned data collection, it would be great to also measure [reviewer's preferred topic]") or may request that authors use their preferred instruments (e.g., "To measure [reviewer's preferred topic], you can use the scale I have developed"). These are certainly plausible scenarios. However, concerns about reviewers having too much power are certainly not new to Registered Reports. Authors have long complained about the demands of reviewers, so much so that "Reviewer 2" is frequently used as shorthand for the general annoyance of reviewer behavior. This is anecdotal, but in our personal experience the review process for Registered Reports is more positive and more collaborative. Not surprisingly, reframing the job of reviewers from "how do I find fault with this" to "how do I help this be the best project it can be" leads to a more positive experience for all.

There are resources to support early career researchers

Registered Reports reflect a major change in the approach to publishing research, and thus can be unsettling and disruptive to those who are used to, or comfortable with, the existing system. If you have supervisors or collaborators who are skeptical about open science, taking a gradual approach could be productive. Kathawalla et al. (2021) developed a resource for "easing into" open science,

https://doi.org/10.1017/S0954579425100552 Published online by Cambridge University Press

which helps researchers to get started without feeling overwhelmed or experiencing a radical change to their process. Silverstein et al. (2024) created a parallel resource for cautious journal editors. The article, "Ten simple rules for writing a Registered Report" by Henderson & Chambers (2022) is required reading for anyone venturing into Registered Reports for the first time (as well as for those with experience). Finally, as noted, PCI Registered Reports has developed a wealth of resources to support interested researchers (PCI Registered Reports, n.d.).

It is also worth noting that Registered Reports very closely resemble how PhD dissertations are handled in the U.S. and several other countries. Students develop a proposal of their plan, which is then reviewed by a committee and ultimately approved, at which point the student can conduct the project. The (un)official contract between the student and the committee is that if they do what they proposed, and do so competently, then they will pass their final exam. That is, the PhD degree is based on strong conceptualization and design, and not contingent on producing a particular set of findings. This is nearly identical to the process of Registered Reports. If this approach is the standard for awarding PhDs, then it should be the standard for publishing research.

Registered Reports help address most malignant behaviors

Registered Reports will not solve all of the problems with how research is conducted or disseminated. Transparency itself is a positive value, but it does not ensure credibility; rather, transparency allows for a stronger assessment of credibility (Vazire, 2017). Researchers can still suppress null or contradictory findings and reframe exploratory findings as if they were preplanned. Journals can still display bias in the types of projects for which they issue in-principle acceptances, and can make unreasonable demands during the Stage 2 review process. And, of course, they do nothing to prevent outright fraud. The reality, however, is that Registered Reports *greatly reduce* these behaviors, while better aligning the values and incentives in science (Chambers & Tzavella, 2022; Nosek et al., 2012). In our experience, when some of these problems have come up, it was related to editors' lack of expertise with the format. Knowledgeable editors who are trained in how to handle Registered Reports can ensure that the practice comes as close as possible to the ideal. Fortunately, the editorial team at *Development and Psychopathology* meets this standard, and so researchers and readers are in good hands.

Conclusion

We opened this article asking what kind of science we want, stating that we could probably all agree that we want it to be reliable, rigorous, cumulative, meaningful, and healthy. We should also ask ourselves, *is this the kind of science we currently have?* Although your initial response may be affirmative, we would push back and respond that you may need to take a closer look. When people do, and if they are honest with themselves, they find something to be desired. This is not to say that all findings in our field are suspect and that we are totally lost. That is not what we are claiming, at all. But we can do better, and fortunately we have the tools to do better. Registered Reports are one such tool. As we argued in this article, Registered Reports are good for science and they are good for scientists. They are a welcome addition to the pages of *Development and Psychopathology*, and we hope that you will submit one soon.

Data availability statement. This manuscript does not report any data.

Acknowledgments. This manuscript does not report any data, so the TOP disclosures are not relevant, and the work was not preregistered.

Funding statement. WEF's research has been supported by the Dutch Research Council (V1.Vidi.195.130) and the James S. McDonnell Foundation (https://doi.org/10.37717/220020502). MS did not receive any direct funding to complete this work.

Competing interests. The authors have no conflicts of interest to declare.

References

Allen, C., & Mehler, D. M. A. (2019). Open science challenges, benefits and tips in early career and beyond. *PLOS Biology*, *17*(5), e3000246. https://doi.org/10.1371/journal.pbio.3000246

Bakker, M., van Dijk, A., & Wicherts, J. M. (2012). The rules of the game called psychological science. *Perspectives on Psychological Science*, *7*(6), 543–554. https://doi.org/10.1177/1745691612459060

Bergmann, C. (2023).The buffet approach to open science. *Cog Tales*. https://cogtales.wordpress.com/2023/04/16/the-buffet-approach-to-open-science/

Bones, A. K. (2012). We knew the future all along: Scientific hypothesizing is much more accurate than other forms of precognition—A satire in one part. *Perspectives on Psychological Science*, *7*(3), 307–309. https://doi.org/10.1177/1745691612441216

Borsboom, D., van der Maas, H. L. J., Dalege, J., Kievit, R. A., & Haig, B. D. (2021). Theory construction methodology: A practical framework for building theories in psychology. *Perspectives on Psychological Science*, *16*(4), 756–766. https://doi.org/10.1177/1745691620969647

Briker, R., & Gerpott, F. H. (2024). Publishing registered reports in management and applied psychology: Common beliefs and best practices. *Organizational Research Methods*, *27*(4), 588–620. https://doi.org/10.1177/10944281231210309

Bruinsma, G. (2016). Proliferation of crime causation theories in an era of fragmentation: Reflections on the current state of criminological theory. *European Journal of Criminology*, *13*(6), 659–676. https://doi.org/10.1177/1477370816667884

Chambers, C. D. (2013). Registered reports: A new publishing initiative at Cortex. *Cortex*, *49*(3), 609–610. https://doi.org/10.1016/j.cortex.2012.12.016

Chambers, C. D., & Tzavella, L. (2022). The past, present and future of registered reports. *Nature Human Behaviour*, *6*(1),29–42. https://doi.org/10.1038/s41562-021-01193-7

Claesen, A., Gomes, S., Tuerlinckx, F., & Vanpaemel, W. (2021). Comparing dream to reality: An assessment of adherence of the first generation of preregistered studies. *Royal Society Open Science*, *8*(10), 211037. https://doi.org/10.1098/rsos.211037

Collins, F. S., Morgan, M., & Patrinos, A. (2003). The human genome project: Lessons from large-scale biology. *Science*, *300*(5617), 286–290. https://doi.org/10.1126/science.1084564

Corker, K. S. (2018). Open science is a behavior. https://cos.io/blog/open-science-is-a-behavior/

Davis-Kean, P. E., Ellis, A., & Syed, M. (2024). Registered reports with secondary developmental data: Introduction to the special issue. *Infant and Child Development*, *33*(2), e2506. https://doi.org/10.1002/icd.2506

Demkowicz, O., & Hickman Dunne, J. (2024). Commentary: Expanding the vision of Registered Reports for qualitative mental health research: A response and extension to Misaligned incentives in mental health research – the case for Registered Reports. *Journal of Child Psychology and Psychiatry*, *65*(11), 1538–1542. https://doi.org/10.1111/jcpp.14039

Deressa, T., Stern, D., Vangronsveld, J., Minx, J., Lizin, S., Malina, R., & Bruns, S. (2023). *More Than Half of Statistically Significant Research Findings in the Environmental Sciences are Actually Not*, https://ecoevorxiv.org/repository/view/4966/

Duncan, R. J., Nordgren, I., Schmitt, S. A., & Vandell, D. L. (2024). Additive and synergistic relations of early mother–child and caregiver–child interactions and socioeconomic outcomes in adulthood. *Infant and Child Development*, *33*(2), e2406. https://doi.org/10.1002/icd.2406

https://doi.org/10.1017/S0954579425100552 Published online by Cambridge University Press

Errington, T. M., Mathur, M., Soderberg, C. K., Denis, A., Perfito, N., Iorns, E., & Nosek, B. A. (2021). Investigating the replicability of preclinical cancer biology. *eLife*, *10*, e71601. https://doi.org/10.7554/eLife.71601

Feest, U. (2019). Why replication is overrated. *Philosophy of Science*, *86*(5), 895–905. https://doi.org/10.1086/705451

Ferguson, C. J., & Heene, M. (2012). A vast graveyard of undead theories: Publication bias and psychological science's aversion to the null. *Perspectives on Psychological Science*, *7*(6), 555–561. https://doi.org/10.1177/1745691612459059

Fraley, R. C., Roisman, G. I., & Haltigan, J. D. (2013). The legacy of early experiences in development: Formalizing alternative models of how early experiences are carried forward over time. *Developmental Psychology*, *49*(1), 109–126. https://doi.org/10.1037/a0027852

Frankenhuis, W. E., Borsboom, D., Nettle, D., & Roisman, G. I. (2023). Formalizing theories of child development: Introduction to the special section. *Child Development*, *94*(6), 1425–1431. https://doi.org/10.1111/cdev.14020

Frankenhuis, W. E., & Nettle, D. (2018). Open science is liberating and can foster creativity. *Perspectives on Psychological Science*, *13*(4), 439–447. https://doi.org/10.1177/1745691618767878

Frankenhuis, W. E., Panchanathan, K., & Smaldino, P. E. (2023). Strategic ambiguity in the social sciences. *Social Psychological Bulletin*, *18*, 1–25. https://doi.org/10.32872/spb.9923

Fried, E. I. (2020). Theories and models: What they are, what they are for, and what they are about. *Psychological Inquiry*, *31*(4), 336–344. https://doi.org/10.1080/1047840X.2020.1854011

Fuentes, M. A., Zelaya, D. G., Delgado-Romero, E. A., & Butt, M. (2022). Open science: Friend, foe, or both to an antiracist psychology? *Psychological Review*, *130*(5), 1351–1359. https://doi.org/10.1037/rev0000386

Gelman, A. (2016).What has happened down here is the winds have changed. https://statmodeling.stat.columbia.edu/

Gennetian, L. A., Frank, M. C., & Tamis-LeMonda, C. S. (2022). Open science in developmental science. *Annual Review of Developmental Psychology*, *4*(1), 377–397. https://doi.org/10.1146/annurev-devpsych-120920-042335

Grahek, I., Schaller, M., & Tackett, J. L. (2021). Anatomy of a psychological theory: Integrating construct-validation and computational-modeling methods to advance theorizing. *Perspectives on Psychological Science*, *16*(4), 803–815. https://doi.org/10.1177/1745691620966794

Guest, O., & Martin, A. E. (2021). How computational modeling can force theory building in psychological science. *Perspectives on Psychological Science*, *16*(4), 789–802. https://doi.org/10.1177/1745691620970585

Hanson, J. L., Kahhalé, I., & Sen, S. (2024). Integrating data science and neuroscience in developmental psychopathology: Formative examples and future directions. *Development and Psychopathology*, *36*(5), 2165–2172. https://doi.org/10.1017/S0954579424001056

Harris, J. K., Johnson, K. J., Carothers, B. J., Combs, T. B., Luke, D. A., & Wang, X. (2018). Use of reproducible research practices in public health: A survey of public health analysts. *PLOS ONE*, *13*(9), e0202447. https://doi.org/10.1371/journal.pone.0202447

Henderson, E. L. (2019).Reducing your results anxiety with Registered Reports. *PsyPAG Annual Conference, University of Sheffield, UK*. https://osf.io/tu2z9

Henderson, E. L., & Chambers, C. D. (2022). Ten simple rules for writing a registered report. *PLOS Computational Biology*, *18*(10), e1010571. https://doi.org/10.1371/journal.pcbi.1010571

Ingre, M., & Nilsonne, G. (2018). Estimating statistical power, posterior probability and publication bias of psychological research using the observed replication rate. *Royal Society Open Science*, *5*(9), 181190. https://doi.org/10.1098/rsos.181190

Junk, T., & Lyons, L. (2020). Reproducibility and replication of experimental particle physics results. *Harvard Data Science Review*, *2*(4). https://doi.org/10.1162/99608f92.250f995b

Karhulahti, V.-M., Branney, P., Siutila, M., & Syed, M. (2023). A primer for choosing, designing and evaluating registered reports for qualitative methods. *Open Research Europe*, *3*, 22. https://doi.org/10.12688/openreseurope.15532.2

Kathawalla, U.-K., Silverstein, P., & Syed, M. (2021). Easing into open science: A guide for graduate students and their advisors. *Collabra: Psychology*, *7*(1), 1–14. https://doi.org/10.1525/collabra.18684

Lakens, D., & DeBruine, L. M. (2021). Improving transparency, falsifiability, and rigor by making hypothesis tests machine-readable. *Advances in Methods and Practices in Psychological Science*, *4*(2), 2515245920970949. https://doi.org/10.1177/2515245920970949

Liu, Z., Wang, X. T. (XiaoTian), Wang, Z., Yan, W., & Hu, M. (2025). Registered reports in psychology across scholarly citations and public dissemination: A comparative metaevaluation of more than a decade of practice. *American Psychologist*. https://doi.org/10.1037/amp0001503

Lundberg, I., Johnson, R., & Stewart, B. M. (2021). What is your estimand? Defining the target quantity connects statistical evidence to theory. *American Sociological Review*, *86*(3), 532–565. https://doi.org/10.1177/00031224211004187

Lupia, A., & Elman, C. (2014). Openness in political science: Data access and research transparency: Introduction. *PS: Political Science & Politics*, *47*(1), 19–42. https://doi.org/10.1017/S1049096513001716

Mahoney, M. J. (1977). Publication prejudices: An experimental study of confirmatory bias in the peer review system. *Cognitive Therapy and Research*, *1*(2), 161–175. https://doi.org/10.1007/BF01173636

Montoya, A. K., Krenzer, W. L. D., & Fossum, J. L. (2021). Opening the door to registered reports: Census of journals publishing registered reports (2013-2020. *Collabra: Psychology*, *7*(1), 24404. https://doi.org/10.1525/collabra.24404

Munafò, M. R., Nosek, B. A., Bishop, D. V. M., Button, K. S., Chambers, C. D., Percie du Sert, N., Simonsohn, U., Wagenmakers, E.-J., Ware, J. J., & Ioannidis, J. P. A. (2017). A manifesto for reproducible science. *Nature Human Behaviour*, *1*(1), 1–9. https://doi.org/10.1038/s41562-016-0021

Nettle, A. D. (2021, May 17). The bosses pretend to have theories, and we pretend to test them. *Daniel Nettle*. https://www.danielnettle.eu/2021/05/17/the-bosses-pretend-to-have-theories-and-we-pretend-to-test-them/

Nivison, M. D., Caldo, P. D., Magro, S. W., Raby, K. L., Groh, A. M., Vandell, D. L., Booth-LaForce, C., Fraley, R. C., Carlson, E. A., Simpson, J. A., & Roisman, G. I. (2025). The predictive validity of the strange situation procedure: Evidence from registered analyses of two landmark longitudinal studies. *Development and Psychopathology*, *37*(1), 147–163. https://doi.org/10.1017/S0954579423001487

Nivison, M. D., Dagan, O., Booth-LaForce, C., Roisman, G. I., & Waters, T. E. A. (2024). Caregiving antecedents of secure base script knowledge inferred from the adult attachment interview: A comparative, pre-registered analysis. *Infant and Child Development*, *33*(2), e2410. https://doi.org/10.1002/icd.2410

Nosek, B. A., Ebersole, C. R., DeHaven, A. C., & Mellor, D. T. (2018). The preregistration revolution. *Proceedings of the National Academy of Sciences of The United States of America*, *115*(11), 2600–2606. https://doi.org/10.1073/pnas.1708274114

Nosek, B. A., & Lakens, D. (2014). Registered reports: A method to increase the credibility of published results. *Social Psychology*, *45*(3), 137–141. https://doi.org/10.1027/1864-9335/a000192

Nosek, B. A., Spies, J. R., & Motyl, M. (2012). Scientific utopia: II. Restructuring incentives and practices to promote truth over publishability. *Perspectives on Psychological Science*, *7*(6), 615–631. https://doi.org/10.1177/1745691612459058

Nuijten, M. B. (2019). Practical tools and strategies for researchers to increase replicability. *Developmental Medicine & Child Neurology*, *61*(5), 535–539. https://doi.org/10.1111/dmcn.14054

Obels, P., Lakens, D., Coles, N. A., Gottfried, J., & Green, S. A. (2020). Analysis of open data and computational reproducibility in registered reports in psychology. *Advances in Methods and Practices in Psychological Science*, *3*(2), 229–237. https://doi.org/10.1177/2515245920918872

Open Science Collaboration (2015). Estimating the reproducibility of psychological science. *Science*, *349*(6251), aac4716. https://doi.org/10.1126/science.aac4716

Parsons, S., Azevedo, F., Elsherif, M. M., Guay, S., Shahim, O. N., Govaart, G. H., Norris, E., O'Mahony, A., Parker, A. J., Todorovic, A., Pennington, C. R., Garcia-Pelegrin, E., Lazić, A., Robertson, O., Middleton, S. L., Valentini, B., McCuaig, J., Baker, B. J., Collins, E. . . . Aczel, B. (2022). A community-sourced glossary of open scholarship terms. *Nature Human Behaviour*, *6*(3), 312–318. https://doi.org/10.1038/s41562-021-01269-4

PCI Registered Reports. (n.d.). Retrieved June 12, 2025, from https://rr.peercommunityin.org/about/about

https://doi.org/10.1017/S0954579425100552 Published online by Cambridge University Press

Penders, B. (2022). Process and bureaucracy: Scientific reform as civilisation. *Bulletin of Science, Technology & Society*, *42*(4), 107–116. https://doi.org/10.1177/02704676221126388

Rahal, R.-M., Hamann, H., Brohmer, H., & Pethig, F. (2022). Sharing the recipe: Reproducibility and replicability in research across disciplines. *Research Ideas and Outcomes : RIO*, *8*(Article e89980). https://doi.org/10.3897/rio.8.e89980

Scheel, A. M., Schijen, M. R. M. J., & Lakens, D. (2021). An excess of positive results: Comparing the standard psychology literature with registered reports. *Advances in Methods and Practices in Psychological Science*, *4*(2), 25152459211007467. https://doi.org/10.1177/25152459211007467

Silverstein, P., Elman, C., Montoya, A., McGillivray, B., Pennington, C. R., Harrison, C. H., Steltenpohl, C. N., Röer, J. P., Corker, K. S., Charron, L. M., Elsherif, M., Malicki, M., Hayes-Harb, R., Grinschgl, S., Neal, T., Evans, T. R., Karhulahti, V.-M., Krenzer, W. L. D., Belaus, A. . . . **Syed, M.** (2024). A guide for social science journal editors on easing into open science. *Research Integrity and Peer Review*, *9*(1), 2. https://doi.org/10.1186/s41073-023-00141-5

Simons, D. J., Holcombe, A. O., & Spellman, B. A. (2014). An introduction to registered replication reports at perspectives on psychological science. *Perspectives on Psychological Science*, *9*(5), 552–555. https://doi.org/10.1177/1745691614543974

Smaldino, P. E. (2020). How to translate a verbal theory into a formal model. *Social Psychology*, *51*(4), 207–218. https://doi.org/10.1027/1864-9335/a000425

Soderberg, C. K., Errington, T. M., Schiavone, S. R., Bottesini, J., Thorn, F. S., Vazire, S., Esterling, K. M., & Nosek, B. A. (2021). Initial evidence of research quality of registered reports compared with the standard publishing model. *Nature Human Behaviour*, *5*(8),990–997. https://doi.org/10.1038/s41562-021-01142-4

Sotola, L. K., & Credé, M. (2023). Estimating the replicability of statistically significant moderation effects in personality research using z-curve analysis. *Journal of Research in Personality*, *107*, 104435. https://doi.org/10.1016/j.jrp.2023.104435

Spellman, B. A. (2015). A short (personal) future history of revolution 2.0. *Perspectives on Psychological Science*, *10*(6), 886–899. https://doi.org/10.1177/1745691615609918

Spiegler, O., Zingora, T., & Jugert, P. (2024). Classroom ethnic diversity, teacher support, and peer victimization: Evidence from four European countries. *Infant and Child Development*, *33*(2), e2413. https://doi.org/10.1002/icd.2413

Sterling, T. D. (1959). Publication decisions and their possible effects on inferences drawn from tests of significance—Or vice versa. *Journal of the American Statistical Association*, *54*(285), 30. https://doi.org/10.2307/2282137

Syed, M. (2022). Do registered reports take longer to publish than traditional articles? The importance of identifying the appropriate counterfactual [Substack newsletter]. *Get Syeducated*, https://getsyeducated.substack.com/p/do-registered-reports-take-longer-22-09-08

Syed, M. (2025). Some data indicating that editors and reviewers do not check preregistrations during the review process. *Journal of Trial and Error*, https://doi.org/10.36850/e5ce-4cc5

Syed, M., & Donnellan, M. B. (2020). Registered reports with developmental and secondary data: Some brief observations and introduction to the special issue. *Emerging Adulthood*, *8*(4), 255–258. https://doi.org/10.1177/2167696820938529

Syed, M., Frank, M. C., & Roisman, G. I. (2023). Registered reports in child development: Introduction to the special section. *Child Development*, *94*(5), 1093–1101. https://doi.org/10.1111/cdev.14003

Tackett, J. L., Lilienfeld, S. O., Patrick, C. J., Johnson, S. L., Krueger, R. F., Miller, J. D., Oltmanns, T. F., & Shrout, P. E. (2017). It's time to broaden the replicability conversation: Thoughts for and from clinical psychological science. *Perspectives on Psychological Science*, *12*(5), 742–756. https://doi.org/10.1177/1745691617690042

Tackett, J. L., Ritchie, S. J., Syed, M., & Weston, S. J. (Eds.) (2021). Special issue of registered reports at the Journal of Research in Personality. *Personality Science*.

The Brazilian Reproducibility Initiative, **Amaral, O. B., Carneiro, C. F. D., Neves, K., Sampaio, A. P. W., Gomes, B. V., Abreu, M. B. de., Tan, P. B., Mota, G. P. S., Goulart, R. N., Souza Fernandes, N. R. de., Linhares, J. H., Ibelli, A. M. G., Sebollela, A., Andricopulo, A. D., Carvalho, A. A. V. de., Silva, A. P. e., Souza, A. S. O., Lima, A. C. C. de** . . . **Altei, W. F.** (2025). Estimating the replicability of Brazilian biomedical science. *bioRxiv*. https://doi.org/10.1101/2025.04.02.645026

Van den Akker, O.R., Weston,S., Campbell, L., Chopik, B., Damian, R., Davis-Kean, P., Hall, A., Kosie, J., Kruse, E., Olsen, J., Ritchie, S., Valentine, K. D., Veer, A. Van't, & Bakker, M. (2021). Preregistration of secondary data analysis: A template and tutorial. *Meta-Psychology*, *5*. https://doi.org/10.15626/MP.2020.2625

Van Lissa, C. J. (2023). Complementing preregistered confirmatory analyses with rigorous, reproducible exploration using machine learning. *Religion, Brain & Behavior*, *13*(3), 347–351. https://doi.org/10.1080/2153599X.2022.2070254

van Rooij, I., & Baggio, G. (2021). Theory before the test: How to build high-verisimilitude explanatory theories in psychological science. *Perspectives on Psychological Science*, *16*(4), 682–697. https://doi.org/10.1177/1745691620970604

Vazire, S. (2017). Quality uncertainty erodes trust in science. *Collabra: Psychology*, *3*(1), 1. https://doi.org/10.1525/collabra.74

Vermeent, S., Young, E. S., DeJoseph, M. L., Schubert, A.-L., & Frankenhuis, W. E. (2024). Cognitive deficits and enhancements in youth from adverse conditions: An integrative assessment using drift diffusion modeling in the ABCD study. *Developmental Science*, *27*(4), e13478. https://doi.org/10.1111/desc.13478

Wagenmakers, E.-J., & Dutilh, G. (2016). Seven selfish reasons for preregistration. *APS Observer*, *29*(9).

Wicherts, J. M., Borsboom, D., Kats, J., & Molenaar, D. (2006). The poor availability of psychological research data for reanalysis. *American Psychologist*, *61*(7), 726–728. https://doi.org/10.1037/0003-066X.61.7.726

Willroth, E. C., & Atherton, O. E. (2024). Best laid plans: A guide to reporting preregistration deviations. *Advances in Methods and Practices in Psychological Science*, *7*(1), https://doi.org/10.1177/25152459231213802

Yang, Y., Hillebrand, H., Lagisz, M., Cleasby, I., & Nakagawa, S. (2022). Low statistical power and overestimated anthropogenic impacts, exacerbated by publication bias, dominate field studies in global change biology. *Global Change Biology*, *28*(3), 969–989. https://doi.org/10.1111/gcb.15972