We need to change our attitude, and journals can help
Reflections in response to Spiller & Olff (2018)

Ineke Wessel¹ & Helen Niemeyer²

WORD COUNT: 1355 (including abstract, highlights and references)

¹ Department of Clinical Psychology and Experimental Psychopathology, University of Groningen, Grote Kruisstraat 2/1, 9712 TS Groningen, The Netherlands. E-mail: i.p.wessel@rug.nl; ORCID: <https://orcid.org/0000-0001-6312-376X>; Twitter: [@InekeWessel](https://twitter.com/InekeWessel); (Corresponding author)

² Department of Clinical Psychological Intervention, Freie Universität Berlin, Schwendenerstr. 27, 14195 Berlin, Germany. Phone 0049/3083854798; Fax 0049/30838454798. Email: hniemeyer@zedat.fu-berlin.de.

Abstract

Adopting Registered Reports is an important step for the European Journal of Psychotraumatology to promote open science practices in the field of psychotrauma research. However, adopting these practices requires us as individual researchers to change our perspective fundamentally. We need to put fears of being scooped aside, adopt a permissive stance towards making mistakes and accept that null-results should be part of the scientific record. This is difficult because the culture in academia is competitive. Incentives are on publishing novel and positive results in high impact journals. A change in journal policies, such that openness and transparency are reinforced, can facilitate an attitude change in individual researchers.

Highlights

- Adopting open science practices requires researchers to change their perspective on openness and transparency
- Lasting changes in individual researchers depend on a change in academic culture such that high quality studies rather than positive results are rewarded
- Journal policies, such as accepting Registered Reports and enforcing open data and materials, are important for facilitating both individual and cultural change

We need to change our attitude, and journals can help

Reflections in response to Spiller & Olf (2018)

Recently, the *European Journal of Psychotraumatology* (EJPT) introduced Registered Reports (RRs) (Spiller & Olf, 2018). This is an important step towards mitigating the problems that have become apparent in psychology in recent years. One issue is that the literature contains an abundance of positive results, whereas null-results are scarce (i.e., publication bias). Another problem is that the replicability of empirical findings is not as straightforward as it should be. This may be due to researchers' (inadvertent) use of Questionable Research Practices (QRPs; e.g., Wicherts et al, 2016). QRPs are strategies that increase the probability of false positive results, for example stopping the data collection prematurely because of a statistically significant result. We have no reason to believe that the field of psychotraumatology will be immune to these problems.

RRs provide a solution that has received increasing attention. Authors submit the background and methods of their study for review before data-collection. Only after in principle acceptance of the manuscript, the study is carried out. A second review procedure follows for the complete manuscript. If the reviewers are satisfied that the plan is carried out as intended and that the results are interpreted properly, the manuscript is published regardless of the results. Thus, the acceptance of a manuscript depends on the specificity and quality of the analysis plan rather than on the statistical significance or the newsworthiness of the outcomes. As such, RRs will safeguard against QRPs and publication bias, thus enhancing replicability.

1. Changing individual perspective

Generally there has been a call for openness and transparency in psychological research, and the number of journals offering RRs is growing (see <https://cos.io/rr/>). Submitting RRs means adopting research practices that clearly differ from the way research was conducted and published before. For us as individual researchers, RRs mean planning

research and analyses with maximized methodological and statistical rigor. This will prevent (inadvertent) QRPs, but may seem challenging to some. For example, we may have to recruit larger sample sizes or adopt analytical techniques that we are unfamiliar with (e.g., Bayesian statistics). One solution is to collaborate in multi-site teams and with applied statisticians (Dahy, 2019).

Importantly, adopting open research practices means that we should change our attitude towards transparency fundamentally. Traditionally, we have been protective of our (new) projects for fear of being scooped. We regard it as devastating if someone else publishes about our ideas before we do (see for example Powell, 2006). Openness can also include storing our data publicly. We might be reluctant to do so for fear of exposing mistakes or inadvertent QRPs that yielded false positives.

2. Changing research culture

For a large part such fears are fueled by the competitive environment we work in. The current culture in science is characterized by rewarding the frequent publication of positive and innovative results. High impact publications lie at the root of successful fundraising, prestigious academic positions and even entire careers. In this culture, trading a focus on individual success for transparency and sharing will be extremely difficult.

The scientific system, that is, the whole of researchers, editors, funders, and relevant institutions, has a limited capacity for publishing and even processing (i.e., reading, using, building on) all research findings. Attention for the most relevant publications in this system enhances the reputation of individual researchers and this, in turn, translates into material advantages, such as prestigious academic positions and grants. Careers are shaped by this mechanism, and researchers who lag behind drop out. Rewarding quantity and impact in such a system aggravates competitiveness. Fear is fostered by the unpredictability of statistical significance, and as null results are less likely to yield publications, they can threaten job positions. In this culture, inadvertently resorting to QRPs that generate positive

and publishable results is conceivable. Therefore, a prerequisite for good scientific practice is providing attention, reputation and material goods for a priori high quality study designs instead of significant findings. This will make QRPs inherently useless.

3. Journals can enable change

Journals can help because they are a major force in reinforcing research practices. Initiatives such as adopting RRs at EJPT can promote individual change in several ways. To begin with, incentivizing transparency will facilitate alternative perceived norms. Individual researchers in psychotraumatology are now explicitly supported by the EJPT to conduct open science. Normalizing transparency in research practices enhances the likelihood of an attitude change even in researchers who might be skeptical currently. In addition, the in principle acceptance of plans before data are collected will increase the number of publications with null-findings. This way, journals may help to increase our tolerance of negative results. All too often we feel that our study has failed when the results are not in line with our hypotheses. However, we need to realise that if we are dealing with probabilities, null-results are to be expected. RRs will help us to regard null-findings as an essential part of the scientific record. Moreover, the implementation of a thorough review process for RRs likely increases the quality of psychotraumatology research. However, transparency will go hand in hand with an enhanced probability of detecting mistakes. Adopting a permissive attitude towards mistakes is daunting, but unavoidable to progress towards “an efficient, progressive and ultimately self-correcting scientific system” (citing Hardwicke et al., 2018).

We hope that the new trend will bring along further developments. As Spiller and Olf (2018) suggest, there are many solutions for the replication crisis of which RRs are one. Journal policies could extend to enforce the sharing of materials and data in publicly accessible repositories for regular submissions as well.

4. Resonance in researchers

We are looking forward to follow up how the registered reports initiative of EJPT will be received by psychotraumatology researchers. We applaud all pioneers who will be submitting a RR. For those who are interested in giving it a try, publications that provide a checklist for the preregistration of a study plan (Wicherts et al., 2016) might be helpful. We are eagerly awaiting to see the number of RRs growing, and we are confident that specific and precise study plans in the RRs will enhance the overall quality of research in psychotraumatology.

References

- Dahy, D.L. (2019, March 10). Statistical reform. Medium
https://medium.com/@darren_dahly/statistical-reform-be2d4f742a4
- Hardwicke, T.E., et al., (2018). Data availability, reusability, and analytic reproducibility: evaluating the impact of a mandatory open data policy at the journal *Cognition*. *Royal Society Open Science*, 5, 180448. <http://dx.doi.org/10.1098/rsos.180448>
- Powell, K. (2006). Winning ways. *Nature*, 442(7104), 842–843. DOI:
<https://doi.org/10.1038/nj7104-842a>
- Spiller, T. R., & Olff, M. (2018). Reducing uncertainty in research: introducing registered reports. *European Journal of Psychotraumatology*, 9(1), 1554417. DOI:
10.1080/20008198.2018.1554417
- Wicherts, J.M., Veldkamp, C.L.S., Augusteijn, H.E.M., Bakker, M., van Aert, R.C.M., & van Assen, M.A.L.M. (2016). Degrees of Freedom in Planning, Running, Analyzing, and Reporting Psychological Studies: A Checklist to Avoid p-Hacking. *Frontiers in Psychology*, 7, 1832. doi: 10.3389/fpsyg.2016.01832