Experimental Psychopathology can Benefit from Registered Reports

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Please imagine these two scenarios. First, imagine that you have just spent six months designing, running, and writing up the results of an experiment that is very close to your heart. You submit the paper for publication and you receive the reviews quickly. Although all reviewers are enthusiastic about the idea of your paper, they point to different methodological flaws in your design that automatically invalidate your conclusions and subsequently reject your submission. After reading their reviews, you agree with all their points. This sad, yet fair, outcome makes you wish that someone had pointed out those mistakes before you started data collection. Now consider the second scenario. You have spent six months designing and running an experiment. Your results are not statistically significant. You realize that the theoretical work is groundbreaking, the methodology strong, but you anticipate that these null-findings will make finding a suitable publication outlet a long, laborious and frustrating process. You hesitate whether you should even write up these results. Perhaps you could better invest your precious time in running another study.

The above scenarios are not unlikely in a researcher's life and they underline two common issues in science. First, even seasoned researchers make methodological choices they

regret in hindsight. Second, the scientific literature suffers from publication bias, meaning that significant results are more likely to be published than non-significant results (e.g., Simonsohn et al., 2014). Because researchers may feel that their career depends on their publication list, they may refrain from submitting their null-findings for publication. Of course, there are compelling reasons to publish null-findings. Most research in psychology is carried out using government funding and researchers should contribute to a sound and reliable literature. It is our professional and ethical responsibility to publish well-designed studies, regardless of their outcome. The use of registered reports is a significant step in this direction.

Registered reports is a publication format that was first introduced in 2012 and is now available in more than 300 journals (see Chambers and Tzavella 2022, for the history of registered reports). The idea behind registered reports is simple, yet powerful. A study should be judged based on its theoretical depth, methodological rigor, and suitability for the scope of the journal, rather than on its outcomes. In order to achieve such an unbiased evaluation, authors submit their introduction, method and analysis plan for publication *prior* to data accumulation (in case of original data) or data analysis (in case of a reanalysis of pre-existing data). Then, the reviewers and the editor evaluate the submission and, if theoretically and methodologically sound, the paper is in principle accepted for publication. Only after this in-principal-acceptance the authors start the data collection and/or the statistical analyses. Importantly, if they follow the accepted plan the paper will be published - *independent of the outcomes*.

This publishing format has plenty of advantages (Chambers & Tzavella, 2022; Nosek & Lakens, 2014). First, the authors receive feedback before the study begins, and can tackle potential problems with their theoretical reasoning or planned methodology. Second, knowing that the study will be published if the accepted plan is followed can reduce publication stress. Third, wrapping up the paper after data completion is relatively straightforward as half the work is already done, meaning that the data should be analyzed according to the details laid out in advance and only the results and discussion need to be written up (Kiyonaga, & Scimeca, 2019). Lastly, the format ensures that null-findings are published and as such, remedies publication bias.

Despite the advantages, we also point out some challenges. These are, however, easily mitigated. First, the workflow is different than in the traditional publishing format, where typically all sections of a paper are written up after data collection is (almost) completed. In Registered Reports the time investment is distributed differently across the research stages, in that more writing time is required prior to data collection, rather than after (Kiyonaga, &

Scimeca, 2019). The total amount of time, however, should be comparable between registered reports and the traditional publishing format. Second, one might think that registered reports prohibit researchers from running additional exploratory analyses. That is not the case. Researchers are free to run additional analyses, as long as they are explicit that those were run after data inspection.

The format of registered Reports is extremely helpful for mitigating publication bias in the psychological literature as a whole. We are happy that the editors of the *Journal of Behavior Therapy and Experimental Psychiatry* have decided to devote a Special Issue on Registered Reports. This is important because our field combines theoretical work, aiming at unveiling the mechanisms underlying mental disorder, with research that potentially has clinical utility. Much of our work has provided the stable foundation for clinical practice (e.g., Craske et al., 2014; Holmes, Arntz, & Smucker, 2007; van den Hout, & Engelhard, 2012). Thus, publishing the unbiased results of well-designed studies is likely to have theoretical as well as societal impact. We need a reliable empirical base to understand mental illness and improve the lives of those suffering from it. We believe that registered reports provide a crucial tool for solving the problems inherent in the traditional publishing model.

The forthcoming special issue provides an excellent opportunity for experimental psychopathologists to get acquainted with the registered reports format and understand its power. We hope that this initiative will contribute to making this publication format mainstream in our field.

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