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NeuroImage: Reports

A new member of the NeuroImage family embracing negative findings, replication studies and registered reports

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NeuroImage: Reports: A new member of the NeuroImage family embracing negative findings, replication studies and registered reports

The publishing culture in basic and cognitive neurosciences in undergoing profound changes to deal with unreliable and non-reproducible results and an unhealthy drive for highly novel findings. A wide range of open & reproducible science initiatives including the Open Science Framework (OSF) (https://osf.io) have been instrumental to overcome the reproducibility crisis. We believe that working towards a more transparent publishing culture is essential in the pursuit of reliable and eventually groundbreaking scientific discoveries.

NeuroImage: Reports is a new open-access and peer reviewed online-only journal and a new member of the NeuroImage family joining the flagship journals *NeuroImage* and *NeuroImage: Clinical*. *Neuroimage: Reports* offers an interdisciplinary forum for the publication of important advances in the use of neuroimaging techniques to study all aspects of structure-function and brain-behavior relationships. Results from studies employing other modalities such as electrophysiology and ultrasound, as well as neuromodulation and -stimulation are also welcomed.

NeuroImage: Reports accepts contributions that are scientifically sound and use neuroimaging to help advance the understanding of brain function, organization, and structure and/or the pathophysiologic mechanisms of diseases and disorders. We also welcome papers that explicitly address these questions in computer simulations, animal models or clinical populations.

A critical reader may wonder what *NeuroImage: Reports* brings to the already sizable number of established journals; does the neuroscience field really need a new journal? There are indeed many publication outlets, but there is a critical gap in extant journals, and that is the need to highlight and publish "non-traditional" articles. These include innovative and empirically oriented research such as papers reporting null results, replication studies and registered reports, which *Neuroimage: Reports* will publish alongside the more recognized formats such as research articles and reviews. Replication studies and null results are crucial to furthering our understanding of brain and behavior – as well as to the integrity of the scientific process – and are, therefore, at the core of scientific progress.

In the following we provide a list and brief explanation of these innovative paper formats:

1. Null Results:

Papers reporting *null results* must detail how the predictions follow from well-established theory, whether the hypothesis was determined a priori, and what a null finding implies about the theory. In a nutshell, publishing negative results requires showcasing *why* the absence of the effect is important. Secondly, it is crucial to rule out the possibility that null findings resulted from flawed methods. Control analyses, data quality checks, and statistical power analyses are crucial to distinguish between a null finding and a false negative. Finally, we encourage using Bayesian statistics, because lack of evidence for the alternative hypothesis (e.g., a p-value) is not the same thing as evidence for the null effect (e.g., a Bayes factor).

2. Replication papers:

Replication papers should compare all aspects of the methodology to the original paper(s) that showed the effect, including the methods for data acquisition, cleaning/selection protocols, and analyses used. These details should be supplemented by a critical and thoughtful discussion about which differences may have contributed to successful or non-successful replications.

3. Registered Reports:

Registered reports form an empirical contribution that is accepted by an increasing number of journals, in which the methods and proposed analyses are pre-registered and reviewed prior to research being conducted. High-quality protocols are then provisionally accepted for publication before data collection or analysis commences. This format is designed to minimize publication bias and research bias in hypothesis-driven research, while also allowing the flexibility to conduct exploratory (unregistered) analyses and report serendipitous findings. The review process for registered reports is divided into two stages. At Stage 1, reviewers assess study proposals before data are collected. At Stage 2, reviewers consider the full study, including results and interpretation. The presence or absence of an effect is not a criterion for publication, since both can be informative as long as interesting questions are posed and sound methods are applied.

In essence, *NeuroImage: Reports* aims to overcome several publication biases in the field of the basic and cognitive neurosciences by embracing non-traditional and innovative formats. This will be a long journey, and we hope that you will share with us your enthusiasm for improving the quality and integrity of scientific communication. We are looking forward to receiving your highest-quality manuscripts.

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