

## INVITED EDITORIAL: Let's Do It Again: A Call for Replications in *Psi Chi Journal of Psychological Research*

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Science is said to be suffering from a crisis of replicability (Ioannidis, 2005). This crisis occurs when scientific studies fail to be supported by subsequent research. The challenges posed by the replication crisis address the fundamental nature of science and the public's understanding of it. Numerous contributing reasons for the replication crisis have been noted including data falsification (Steen, 2011), the pressures of tenure and promotion (Varian, 1998), questionable research practices (Simmons, Nelson, & Simonsohn, 2011), the tendency of journals to want to publish particularly novel papers (Steen, 2011), and the preference for publishing significant results (de Winter & Happee, 2013). These factors all increase the odds of inaccurate information being published, which in turn is incorporated into texts, as happened with the details of the original investigation in the Kitty Genovese case, which led to the famous bystander apathy studies (Griggs, 2015). The primary goal of this editorial is to briefly discuss the factors that have contributed to the replication crisis, techniques employed by various journals in the field to deal with the crisis, and how *Psi Chi Journal of Psychological Research* (PCJ) is responding.

### Build Up to the Replication Crisis

Perhaps the biggest indication of the psychological replication crisis was a series of papers that were completely fabricated by several different authors (Levelt Committee, 2012). In these cases, the authors in question were discovered to have completely fabricated their data based on a number of factors ranging from the inability of coauthors to get access to data to a statistical analysis of raw data from the papers suggesting that the data was faked (Simonsohn, 2013).

Some have looked at the data fabrication crisis as a series of unrelated and isolated incidents,

perhaps driven by personal flaws or ambition. Others, however, have looked at systemic features in academia as a potential influence on this phenomena (Nosek, Spies, & Motyl, 2012). For instance, it has long been noted that tenure and promotion in academia is driven largely by the number and quality of publications (Varian, 1998). Early career researchers in the field (graduate students, post-docs, and assistant faculty) are pressured to publish early and often, and this can lead to academics taking steps to drive up their publication counts. It is important to note that these steps rarely include data fabrication. Rather, these steps often include publishing single-study short reports, which increase the likelihood of a type one error (Ledgerwood & Sherman, 2012), using selective analyses and manipulations of degrees of freedom to reach statistical significance (known as "p-hacking"; Simonsohn, Nelson, & Simons, 2014), and engaging in unwarranted self-citations to increase the number of citations one has (Purvis, 2006).

Other issues are more nuanced. The problems with journals seeking to publish novel findings and journals having a publication bias toward publishing significant results are arguably quite intertwined. It has long been known by scientists that studies without significant effects often end up in a file drawer, never to be seen again. Occasionally, meta-analyses reveal these file-drawer effects, but often there is a significant lag time if these meta-analyses are ever run. Additionally, in my experience and that of my colleagues, journal editors have been noted to say that significant replications and extensions belong in specialty journals, rather than more widely distributed journals. Of course, there are exceptions

The *Psi Chi Journal* editorial team invited Dr. Edlund to write an editorial as a member of the Psi Chi Research Advisory Committee (RAC). As part of discussions between the RAC and the PCJ editorial team, we have embarked on a Replication Initiative to stimulate engagement with replication of psychological research studies.

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to these general trends. For example, studies on the sex difference in jealousy have many nonsignificant (and arguably underpowered: Berman & Frazier, 2005) and significant findings published in prominent journals (Sagarin et al., 2012). However, the comparative ease of publishing the nonsignificant findings in this field are likely attributable to nuanced reasons surrounding the effect and the theoretical approach taken.

### Changing Practices to Address the Crisis

As a field, numerous suggestions have emerged on how to deal with the underlying reasons for the crisis of confidence. One approach employed by journals is encouraging preregistered studies. In this approach, a study's background, hypotheses, and methods are independently reviewed before any data are collected. The goal of this approach is to ameliorate the focus on publishing significant results because these studies are guaranteed publication based on the quality of the research rather than obtaining results that reach a significance level of  $p < .05$ .

Another technique that has been employed is the use of massive collaborative projects that conduct multiple replications at the same time such as the ManyLabs studies (Alogna et al., 2014) or the Collaborative Replications and Educational Project (Grahe, Brandt, IJzerman, & Cohoon, 2014). This technique has many advantages such as the inclusion of more diverse participants, and a greater confidence in the veracity of the data collected, due to the large numbers of collaborators and sharing of the raw data. This approach also provides advantages to researchers who have more limited resources at their home institutions to be involved in the larger scientific enterprise and discourse.

These approaches certainly have their strengths and advantages. However, they work best when incorporated into a long-term research agenda looking at an already established research question. New researchers are less likely to have successful preregistrations or to be leading a multiple-lab based project. As such, there remains a need for outlets that are willing to publish high-quality replications.

### Moving Forward

PCJ has always published high-quality psychological papers, ranging from papers featuring novel hypotheses (Peters, Holgreen, & Oswald, 2015) to studies focused on replication (Casad & Lee,

2014). In collaboration with the Psi Chi Research Advisory Committee, the PCJ editorial team is launching a replication initiative with this issue. As part of this initiative, PCJ will encourage the submission of replication studies, provide a special notation in PCJ for replication studies, and add the keyword "replication" to reviewers' expertise. PCJ enthusiastically welcomes reviewers with expertise in reviewing replication studies. The PCJ editorial team hopes that these structural changes will communicate the importance of replication studies and encourage researchers to engage in their execution and dissemination of findings, whether significant or not.

There are two ends of the spectrum on replication: direct replication and conceptual replication (Schmidt, 2009). A direct replication attempts to most directly recreate the study that is being replicated (in materials, procedures, and participants). In practice, there are very few published direct replications. More commonly a study will feature a direct replication and an additional manipulation or extension. Alternatively, in a conceptual replication, the basic research question is replicated, but with different materials, procedures, or participants that are still conceptually linked. PCJ has always been open to both conceptual and direct replications.

Ultimately, the biggest factor that will be evaluated in the submission of any PCJ manuscript will be the quality of the manuscript. The adequacy of the sample size for the conclusions reached (Anderson & Maxwell, 2015) will remain an important factor in decisions. Additionally, the quality of the materials and methods will be evaluated (see Uncles & Kwok, 2013, for a discussion of materials in the context of replication science). Finally, the adequacy of the analyses and the reporting of the entire manuscript will be considered as well.

As an illustration of what good replication science can look like to Psi Chi, we point to Keeran and Burmeister (2015) featured in the current issue of PCJ. Here, Keeran and Burmeister employed a primarily direct replication approach, although several changes and their potential impact were noted. Like all manuscripts employing a replication approach, the paper was evaluated on its own merits with the replicative approach being neither a benefit nor a hindrance to acceptance of the manuscript.

Ultimately, it is our hope that our field continues to embrace the benefits of replications in psychology. The field is strengthened by increasing



the precision and confidence of our conclusions through using both conceptual and direct replications. It is with these goals in mind that PCJ explicitly invites you to submit your replications for consideration in PCJ.

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