

## Business Not as Usual

In January 2014, *Psychological Science* introduces several significant changes in the journal's publication standards and practices, aimed at enhancing the reporting of research findings and methodology. These changes are incorporated in five initiatives on word limits, evaluation criteria, methodological reports, open practices, and "new" statistics. The scope of these five initiatives is sketched here, along with the reasoning behind them.<sup>1</sup>

### Revising Word Limits

Research Articles and Research Reports are the journal's principal platforms for the publication of original empirical research; together they account for more than 80% of all submissions to *Psychological Science*. Previously, Research Articles and Research Reports were limited to 4,000 and 2,500 words, respectively, and these word limits included all of the main text (introductory sections, Method, Results, and Discussion) along with notes, acknowledgments, and appendices.

Going forward, the new limits on Research Articles and Research Reports are 2,000 and 1,000 words, respectively. As before, notes, acknowledgments, and appendices count toward these limits, as do introductory material and Discussion sections. However, the Method and Results sections of a manuscript are excluded from the word limits on Research Articles and Research Reports. The intent here is to allow authors to provide a clear, complete, self-contained description of their studies, which cannot be done with restrictions on Method and Results. But as much as *Psychological Science* prizes narrative clarity and completeness, so too does it value concision. In almost all cases, a fulsome account of the method and results can be achieved in 2,500 or fewer words for Research Articles and 2,000 or fewer words for Research Reports.

### Clarifying Evaluation Criteria

Editors and external referees will evaluate submissions with three questions in mind:

1. What will the reader of this article learn about psychology that he or she did not know (or could not have known) before?

2. Why is that knowledge important for the field?
3. How are the claims made in the article justified by the methods used?

The first question reflects the journal's long-standing emphasis on leading-edge methods and innovative findings (Estes, 1990; Roediger, 2010). The insertion of "about psychology" and "for the field" in Questions 1 and 2, respectively, drives home the point that *Psychological Science* is not a neuroscience journal or a social cognition journal or an emotion research journal or any other kind of specialty journal. It is about psychology, broadly construed. It is also about applying scientific methods to study behavior and experience, which motivates asking authors to explicitly tie their claims to their methods in Question 3.

Manuscripts that contain clear and compelling answers to the What, Why, and How questions have the best prospects of being accepted for publication. To underscore this point, and to promote fair and informed assessments, we ask authors to preview their answers as part of the manuscript submission process. Specifically, the three questions are included in the manuscript submission portal under *Manuscript Details*, along with text boxes into which authors enter brief (50-word-maximum) replies. The aim here is to make the preview exercise manageable for all parties, while helping get everyone—authors, reviewers, editors—on the same page.

### Enhancing Methodological Reports

A third new development is inspired in part by PsychDisclosure (<http://psychdisclosure.org>), a platform developed by Etienne LeBel and his associates that provides authors of recently published articles in psychology an opportunity to publicly disclose four categories of important methodological details (exclusions, conditions, measures, and sample size) that are not required to be disclosed under current reporting standards but are essential for interpreting research findings. Drawing on Simmons, Nelson, and Simonsohn's (2011, 2012) publications on false-positive psychology, LeBel et al. developed a four-item survey—the Disclosure Statement—and sent it to a random sample of authors of articles in several journals, including *Psychological Science*. For all studies

in their article, authors were asked whether they reported (a) the total number of observations that were excluded, if any, and the criterion for exclusion; (b) all tested experimental conditions, including failed manipulations; (c) all administered measures and items; and (d) how they determined their sample sizes and decided when to quit collecting data.

According to LeBel and his associates (<http://psychdisclosure.org/about.html>), the primary benefits of Psych Disclosure include

increasing the information value of recently published articles to allow for more accurate interpretation of the reported findings, . . . making visible what goes on under the radar of official publications, and . . . promoting sounder research practices by raising awareness regarding the ineffective and out-of-date reporting standards in our field with the hope that our website inspires journal editors to change editorial policies whereby the 4 categories of methodological details disclosed on this website become a required component of submitted manuscripts.

The editors of *Psychological Science* agree that it would be a good thing to create a simple public norm for reporting what should be requisite information. Our sense is that Simmons, LeBel, and their colleagues are on the right track and that the journal is well positioned to promote the cause.

Thus, as of January 2014, the manuscript submission portal has a new section containing check boxes for the four Disclosure Statement items (which are very similar to existing items confirming that research meets ethical guidelines, etc.). Submitting authors must check each item in order for their manuscript to proceed to editorial evaluation; by doing so, authors declare that they have disclosed all of the required information for each study in the submitted manuscript. The new section looks something like this:

For each study reported in your manuscript, check the boxes below to

(1) Confirm that (a) the total number of excluded observations and (b) the reasons for making those exclusions have been reported in the Method section(s).  *If no observations were excluded, check here* .

(2) Confirm that all independent variables or manipulations, whether successful or failed, have been reported in the Method section(s).  *If there were no independent variables or manipulations, as in the case of correlational research, check here* .

(3) Confirm that all dependent variables or measures that were analyzed for this article's target research question have been reported in the Methods section(s).

(4) Confirm that (a) how sample size was determined and (b) your data-collection stopping rule have been reported in the Method section(s)  and provide the page number(s) on which this information appears in your manuscript: \_\_\_\_\_

Several points are worth noting. First, the four-item Disclosure Statement applies only to "each study reported in your manuscript." Originally, we considered adding a fifth item covering additional studies, including pilot work, that are not mentioned in the main text but tested the same research question. However, feedback from several sources suggested that this would open a large can of worms. To paraphrase one commentator (Leif Nelson), it is all too easy for a researcher to think that an excluded study does not count. Furthermore, such an item would actually put an additional, meaningful burden on the "full disclosure" researcher. The four items in the Disclosure Statement are equally easy for everyone to answer; either the information is already in the manuscript or it can be entered now. But a potential fifth item, covering additional studies, is different. The researcher who convinces him- or herself that one or more studies do not count has saved the hours it might take to write them up. File-drawering studies is damaging, but we are not convinced that this fifth item would have solved that problem. A better solution involves preregistration of study methods and analyses—an approach taken up in the next section, on open practices.

Second, the focus of Item 3 is on dependent variables (DVs) or measures that were analyzed to address the target research question posed in the current submission. It is not uncommon for experimentalists to include one or more "exploratory" measures in a given study and to distinguish these from the "focal" DVs that represent the crux of the investigation. It is okay for them not to disclose exploratory DVs assessed for separate research questions, but it is not okay to withhold exploratory DVs assessed for the current article's target research question. By the same token, correlational researchers in such diverse areas as behavioral genetics, personality theory, cultural psychology, and cognitive development may measure hundreds or even thousands of variables, most of which are set aside for other articles on separate issues involving different analyses. Item 3 is written to convey our trust in experimentalists and nonexperimentalists alike to report all analyzed measures that relate to the target research question at stake in a particular submission.

Third, in connection with Item 4, editors and reviewers will verify that the information on sample size and the stopping rule is reported for each study, given this is the only information that authors always need to report. For the three other items, there is nothing for editors and reviewers to check because they will simply be taking the authors' word that they have disclosed all of the information. That is, editors and reviewers will take authors at their word that they have disclosed all excluded observations (if there were any), that they have disclosed all independent variables or manipulations (if there were any), and that they have disclosed all analyzed DVs or measures.

Finally, with a view to raising the publication standards and practices of *Psychological Science*, the editors see the mandatory disclosure of exclusions, manipulations, measures, and sample size as a step in the right direction—but not the ideal end state. Some readers will complain that the Disclosure Statement goes too far, whereas others will say that it does not go far enough. Similarly, for every reader who believes the Disclosure Statement is too judgmental and inquisitive, another will think it puts too much trust in the better angels of the authors' nature. I welcome your suggestions for improving the disclosure initiative or any of the other new developments described here.

### Promoting Open Practices

A fourth initiative for *Psychological Science* in 2014 involves the promotion of open scientific practices. Despite the importance of open communication for scientific progress, present norms do not provide strong incentives for individual researchers to share data, materials, or their research process. In principle, journals could provide incentives for scientists to adopt open practices by acknowledging them in publication. In practice, the challenge is to establish which open practices should be acknowledged, what criteria must be met to earn acknowledgment, and how acknowledgment would be displayed within the journal.

Over the past several months, a group of 11 researchers, led by Brian Nosek, has been grappling with these and other issues. The result is an open-practices document (Center for Open Science, 2013) that proposes three forms of acknowledgment:

- The Open Data badge “is earned for making publicly available the digitally-shareable data necessary to reproduce the reported result.”
- The Open Materials badge “is earned by making publicly available the components of the research methodology needed to reproduce the reported procedure and analysis.”

- The Preregistered badge “is earned for having a preregistered design and analysis plan for the reported research and reporting results according to that plan. An analysis plan includes specification of the variables and the analyses that will be conducted.”

Note that preregistration is an effective countermeasure to the file-drawer problem alluded to earlier in connection with the Disclosure Statement.

The criteria for each badge, and the process by which the badges are awarded, are described in the open-practices document, along with answers to frequently asked questions. The document proposes two ways for certifying organizations to award badges for individual studies: disclosure or peer review. For now, *Psychological Science* will follow the simpler disclosure method.

Manuscripts accepted for publication in *Psychological Science* on or after January 1, 2014, are eligible to earn any or all of the three badges. Copy editors will contact corresponding authors with details on the badge-awarding process. It is perfectly fine if authors are not interested in earning a given badge, for any reason. But if authors cannot earn a given badge (e.g., because they are precluded from publicly posting their data owing to privacy, safety, or other concerns), we will offer them the opportunity to say so and to include their statement in the published article.

*Psychological Science* is the launch vehicle for the badge program, so changes are bound to come as authors and editors gain experience with it in the field.

### Embracing the New Statistics

Null-hypothesis significance testing (NHST) has long been the mainstay method of analyzing data and drawing inferences in psychology and many other disciplines. This is despite the fact that, for nearly as long, researchers have recognized essential problems with NHST in general, and with the dichotomous (“significant” vs. “nonsignificant”) thinking it engenders in particular.

The problems that pervade NHST are avoided by the new statistics—effect sizes, confidence intervals, and meta-analysis (Cumming, 2012). In fact, the sixth edition of the American Psychological Association's (2009) *Publication Manual* recommends that psychologists should, whenever possible, use estimation and base their interpretation of research results on point and interval estimates.

*Psychological Science* seconds this recommendation and seeks to aid researchers in shifting from reliance on NHST to estimation and other preferred techniques. To this end, we have published a tutorial by Geoff Cumming (2014), a leader in the new-statistics movement, that includes examples and references to books, articles,

software, and online calculators that will aid authors in understanding and implementing estimation techniques in a wide range of research settings.

## Conclusion

At the close of an interview in the *Observer* (Roediger, 2013) I remarked to Roddy Roediger that

the five initiatives we've talked about are, at most, steps in the right direction, not an ideal end state. The issues of replicability and research practices are complex but not intractable if the community at large gets involved. Science organizations like [the Association for Psychological Science] and their journals can help, but I think real, lasting progress has to come from the ground up, not the top down. (p. 33)

The "ground," of course, includes you—the journal's readers and contributors. Once again, your comments and suggestions for improvement are welcome.

—Eric Eich

## Note

1. For more details, see the *2014 Submission Guidelines* ([http://www.psychologicalscience.org/index.php/publications/journals/psychological\\_science/ps-submissions#](http://www.psychologicalscience.org/index.php/publications/journals/psychological_science/ps-submissions#)) and an *Observer*

article adapted from my conversation with the Academic Observer about these initiatives (Roediger, 2013).

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