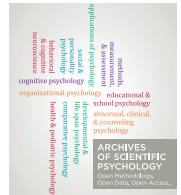




## Archives of Scientific Psychology

<http://www.apa.org/pubs/journals/arc>



# Archives of Scientific Psychology: A New Journal for a New Era

Harris Cooper  
Duke University

Gary R. VandenBos  
American Psychological Association, Washington, DC

The science of psychology matures in many ways. Its concepts and theories become more precise. Its methods incorporate advances in statistics and research design, as well as new technologies. Publishing in scientific psychology also matures.

*Archives of Scientific Psychology* is a new journal of the American Psychological Association (APA). It is a response to recent changes in how social, behavioral, and cognitive scientists communicate with one another and with the public. As importantly, it responds to changes in what people expect to learn when they read a scientific research report.

The subject matter of *Archives of Scientific Psychology* spans the entire discipline of psychology. Readers will find articles on subjects ranging from neuroscience to political psychology, and all points in between. Articles will also describe research conducted using any of the methods found in the psychologist's toolbox (Cooper et al., 2012).

Articles published in *Archives of Scientific Psychology* have five characteristics that, together, make them unique:

- The articles are free and open to the public; anyone with access to the Internet should have access to these research reports. In addition, readers can sign up for e-mail and other alerts when articles of interest to them are published.
- Following APA's Journal Article Reporting Standards (JARS; APA Publication and Communication Board Working Group on Journal Article Reporting Standards, 2008), the authors of articles have completed a detailed description of their methods; this description is also available on the Internet.
- The authors have made available the data that underlie the analyses presented in the article. The data can be used by others for verification or extension of the study's results. The data are available from APA or another approved repository upon agreement regarding usage. If deposited with APA, next users agree to offer to the researchers who generated the data involvement in any subsequent publications.
- Because articles published in *Archives of Scientific Psychology* are available to the general public as well as scientists, readers find two versions of each article's Abstract and Method section.
- One abstract is written in nontechnical language; it describes the study and why its findings are important to understanding human thought, feeling, and behavior and/or to assisting with solutions to psychological or societal problems. The other abstract is a scientific abstract and is used for retrieval of the article from databases of scientific references.
- The Method section contains a brief, nontechnical description of methods. Also, it contains a link to the detailed description of the investigation's design, implementation, and analyses mentioned above.
- Finally, to facilitate discussion of the article among multiple audiences:
  - The (a) article, (b) comments on the article by scholars who took part in the peer review process (and perhaps others), and (c) the authors' response may be published as a separate document at the same time as the target article. The comments and author reaction also pass review by the action editor.

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Harris Cooper, Department of Psychology and Neuroscience, Duke University; Gary R. VandenBos, American Psychological Association, Washington, DC.

For further discussion on this topic, please visit the *Archives of Scientific Psychology* online public forum at <http://arcblog.apa.org>.

Correspondence concerning this article should be addressed to Harris Cooper, Duke University, Department of Psychology and Neuroscience, 417 Chapel Drive, Durham, NC 27708-0086. E-mail: [cooperh@duke.edu](mailto:cooperh@duke.edu)

- The article will contain a link to a discussion group dedicated to the article.

Each of these characteristics of *Archives of Scientific Psychology* is briefly discussed below.

### Open Access

“Open access” in the publishing domain refers to the availability of scholarly materials, typically peer-reviewed, free of charge to readers and with a minimum or reduced set of copyright restrictions. The expense of distributing the material is borne by the author or an institution supportive of open access. The principal barrier to obtaining open access material is the need for access to the Internet (see Suber, 2012, for an excellent introductory but nuanced definition of open access).

The arguments in favor of open access are persuasively presented by the Budapest Open Access Initiative (2002):

Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge. (Budapest Open Access Initiative, 2002)

The Harvard Open Access Initiative goes on to say:

Open access makes knowledge accessible and reusable, accelerates the pace of discovery and discussion, maximizes the return on our investment in research, and speeds the development of all the benefits that depend on research, from new medicines and useful technologies to informed decisions, solved problems, and improved public policies. (Berkman Center for Internet & Society, 2012)

Finally, a growing body of evidence appears to support the notion that open access publishing has benefits for authors as well; their work is more likely to be cited in the works of others (OpCit Project, 2012).

Open access publishing is not without criticisms. These primarily revolve around issues raised by publishers (and learned societies) concerned about the sustainability of the funding model, its potential influence on the peer-review process, and its impact on technological innovation in publishing (Nature Publishing Group, 2004).

A study conducted in 2010 revealed that about 8.5% of scientific scholarship was available through journals that were open access. In the social sciences the figure was 5.6% (Björk et al., 2010). The number of articles published in open access journals has been increasing dramatically (Laakso et al., 2011). This suggests that the open access model of publishing is here to stay.

### Methodological Transparency

The APA Publications and Communications Board Working Group on Journal Article Reporting Standards (2008) pointed to two “developments in the social, behavioral and medical sciences that have encouraged researchers in psychology to provide more details when they report their methods and results” (p. 839). The first was the increasing use of behavioral science research by policymakers and others involved in the development and delivery of psychological and other social services. Along with this enhanced opportunity to influence policy has come increased public scrutiny of the fit between the methods used in psychological research and the interpretations drawn from its results.

The second development was the increased use of research syntheses and meta-analyses to summarize psychological investigations. With enhanced methods for integrating outcomes from different studies, the complete reporting of methods helps the next users of research when they consider the generality and specificity of results across variations in research participants, settings, manipulations and treatments, and outcomes. This assists both the development of psychological theory and the application of findings. It necessitates a complete reporting of how investigations were carried out.

In response to these changes in psychological science and its societal context, APA adopted the JARS. The JARS appears in the 6th edition of the *APA Publication Manual* (American Psychological Association, 2010b; see also Cooper, 2011). *Archives of Scientific Psychology* is the first journal to fully implement APA’s reporting standards. As part of the submission process, authors complete a questionnaire version of the JARS. The completed questionnaire systematically describes the broad outline and finer nuances of the study’s rationale, method, results (including secondary analyses and nonsignificant results), and interpretation, often at a level of detail beyond current norms of reporting. The added detail and consistency of reported information should make more accurate the assessment of fit between inferences and methods. It will also enhance the studies’ contribution to future research synthesis.

The Method section in the text of the journal article presents a brief, nontechnical rendition of the study’s methods. It also contains a link to its accompanying JARS Questionnaire.

## JARS Modules

The JARS is divided into several parts. First, the JARS asks for information included in all reports on new data collections. These recommendations contain only a brief entry regarding the type of research design. Then, depending on the research design used, authors pick the appropriate JARS modules to be completed in addition to the general items.<sup>1</sup> A Meta-Analysis Report Standards (MARS) Questionnaire is used to report the methods used in research syntheses.

## Sharing of Data

At its November 2011 meeting, the APA Publications and Communications Board received the report of its Task Force on APA Journals Data Sharing Policies (memo dated September 23, 2011). The report proposed the Board adopt five principles regarding the sharing of data:

- APA believes that sharing data promotes science.
- APA journals policy requires that, for articles published in APA journals, authors share the data on which the article is based.
- It is the responsibility of the author to find and deposit data on a hosting site in usable, interpretable form.
- The generator and the user of the data both are responsible for individual subject privacy protection and confidentiality.
- The user of data must acknowledge the original source of the data (p. 1).

The APA Publication and Communications Board endorsed the principles proposed by the Task Force but, at least initially, chose to leave it to the editors of APA's journals about when and how to implement a data sharing policy. *Archives of Scientific Psychology* is the first APA journal to adopt a data sharing policy that requires participation of all authors who publish herein.

The Task Force report supported its recommendations thus:

Sharing data within the larger scientific enterprise, promotes hypothesis generation and testing, programmatic decision-making, and determining the generalizability of particular findings; opens up the data for analysis with new, more powerful or integrative techniques than available at time of collection; allows aggregation for the purposes of knowledge synthesis, and encourages a culture of openness and accountability in scientific research (APA Task Force on APA Journals Data Sharing Policies, 2011, p. 1).

In addition, the Task Force noted that a data-sharing plan is required by many agencies that fund psychological research, including the National Institutes of Health (for grant proposals of \$500,000 or more in any one year; National Institutes of Health, 2007), the National Science Foundation (2011), the Wellcome Trust (2012), and the European Union (Gibney, 2012).

Most dramatically, the Task Force pointed to recent concerns about the integrity of psychological research that could be addressed, at least partially, by the greater transparency that data sharing (and more complete reporting of methods and results) would bring. Of particular note was the case of data fabrication discovered in the published research by Diederik A. Stapel. The joint committees investigating Prof. Stapel's fraud (Levelt Committee, Noort Committee, & Drenth Committee, 2012) detailed the mechanisms used to accomplish the deception. The committee noted that greater transparency in the reporting of research would have helped prevent the fabricated data from entering the scientific literature. In particular, they noted that the norm in psychology for researchers to not make data available through public archives had to change. The committee noted there were strange patterns in Stapel's data that might have been picked up earlier, and perhaps in the peer review process, had the data been more widely available for scrutiny. While far from a complete protection against data fabrication, a requirement that data be open to public scrutiny should make the unscrupulous think twice about publishing faked data.

## The Data Collaboration Agreement

Data sharing agreements take many forms. Among other stipulations, the next users of the data typically agree:

- To keep the data secure and not share data with third parties who do not have appropriate agreement for use
- To protect the confidentiality of the participants who provided the data
- To first notify the data providers of any errors that are uncovered
- To cite appropriately the original publication first reporting results derived from the data.

<sup>1</sup> Currently, *Archives* version of the JARS provides items only for a subset of research designs and some of these were prepared for the *Archives*. The modular approach makes it possible for other research designs to be added to the JARS by adding new modules. As these standards are developed, they will be included as *Archives* JARS Questionnaires. In fact, *Archives* is amenable to publishing new JARS modules submitted by appropriate groups or organizations.

With regard to the final stipulation, the next users of data shared by authors of articles in *Archives of Scientific Psychology* and deposited with APA must go further than simple citation of the data's origins. Next users agree to offer authorship to the originators of the data on any subsequent publications. This stipulation is based on the APA Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2010a) regarding publication credit, which states: "Principal authorship and other publication credits accurately reflect the relative scientific or professional contributions of the individuals involved, regardless of their relative status" (Section 8.12). It is the opinion of the editors of *Archives of Scientific Psychology* that designing and conducting the original data collection is a scientific contribution that cannot be exhausted after one use of the data; it resides in the data permanently.

### Multiple Audiences

Previously, we mentioned that one impetus for the closer scrutiny of methods used in psychological research was the increased use of behavioral science by policymakers and others involved in the development and delivery of psychological and other social services. In 2006, the American Psychological Association's Presidential Task Force on Evidence-Based Practice (2006) defined the term "evidence-based practice" to mean "the integration of the best available research with clinical expertise in the context of patient characteristics, culture and references" (p. 273). The potential impact of psychological research reaches well beyond clinical practice. The desire for evidence-based practice can be found in numerous allied disciplines, including education (e.g., What Works Clearinghouse, <http://ies.ed.gov/ncee/wwc/>), medicine (e.g., Cochrane Collaboration, <http://www.cochrane.org/>), social welfare and crime and justice (e.g., Campbell Collaboration, <http://www.campbellcollaboration.org/>), and public policy (e.g., Coalition for Evidence-Based Policy, <http://evidencebasedprograms.org/wordpress/>).

Clearly, research that is free and open to the public via the Internet has an increased probability of finding its way into discussions of policy and practice. This is a circumstance that should be taken advantage of. Thus, to facilitate the use of research appearing in *Archives of Scientific Psychology*, we have restricted the length of articles to 6,500 words of main text.<sup>2</sup> However, authors are encouraged to present multiple supplemental files containing additional information about the study's background and results, and an expanded discussion.

With wider exposure also comes the increased probability that research can be misrepresented or misapplied. By having the originating researchers prepare summaries of studies and study methods in nontechnical language, authors of *Archives of Scientific Psychology* articles potentially have greater control over the interpretation of their work as it enters public discourse.

### The Discussion Group

The discourse surrounding a fair and conscientious assessment of a study's strengths and weaknesses can be an important contributor to the scientific process, especially as it helps focus future research on critical issues. To facilitate this discourse, reviewers for *Archives of Scientific Psychology* articles may be given the option of having a signed comment published along with the article of interest. Authors will be offered a response.

And, once an article is published it can be the object of insightful commentary from a broad audience. When an article is published it will contain a link to a discussion group on the target article.

## Other Important Features of *Archives of Scientific Psychology*

### Peer Review Process

*Archives of Scientific Psychology* uses peer review to determine whether a submitted manuscript is suitable for publication. Authors are free to submit manuscripts that reveal their identity or that are prepared to keep reviewers unaware of who they are. We adopted this policy because we are unconvinced that evidence on peer review rules out the possibility that some reviewers' evaluations of manuscripts are influenced by characteristics of authors (Shatz, 2004; Weller, 2001). Likewise, reviewers will be given the option of revealing themselves to the authors.

### Editorial and Publication Lag

The editorial lag at a journal, the time from the submission of a manuscript to decision, is determined by a wide set of variables, especially the diligence of editors and reviewers. The ubiquitous request-for-revision (and sometimes re-revision) also lengthens the time from submission to acceptance. Publication lag, the time from acceptance to the appearance of the article, is less variable. *Archives of Scientific Psychology* posts new

<sup>2</sup> Somewhat longer manuscripts will be permissible for reports of multiple studies.

articles on a weekly basis (one volume per year, no issues, consecutive page numbering) and is committed to publishing new articles within 2 weeks of their final acceptance.

### A Note on Contributors

Meeting the requirements to publish in *Archives of Scientific Psychology* places additional burden on authors. The JARS Questionnaires ask researchers for details that exceed most existing norms of reporting. Giving others access to data opens researchers to scrutiny for mistakes. All humans make mistakes. Also, researchers wish to hold their data close because they have additional plans for publication. They are concerned that second and later users might “mine the data” in similar ways before the data originators get a chance to. Finally, the preparation of nontechnical abstracts and methods adds to authors’ writing burden.

We fully acknowledge that publishing in *Archives of Scientific Psychology* will attract a different kind of author. But we also fully expect that the model of scientific psychology showcased in *Archives of Scientific Psychology* articles will someday be the norm throughout the discipline.

We have done our best to ease the burden on contributors. The JARS Questionnaire provides much context for the reporting of methods, allowing the author to forgo the considerable time spent on organizing and constructing a narrative. APA provides and maintains a data repository. Data sharing is restricted only to the data that is reported in the article.<sup>3</sup> And, next users are obligated to involve the originators of the data in their publication plans, if the originators so desire. Editors and reviewers assist the contributors in constructing their nontechnical descriptions.

There are clear benefits to publishing in *Archives of Scientific Psychology*, as well. Being an open access journal published under the imprimatur of the *American Psychological Association* we anticipate that *Archives of Scientific Psychology* will rapidly gain a wide audience and be viewed as a trusted source of information by both scientists and the general public. The data sharing agreement turns a concern about losing proprietary rights to the data into an opportunity for collaboration, perhaps leading to joint publications that the data originators never thought of or could not perform themselves. And, there is evidence that, similar to publishing in open access journals, articles that share data are cited more frequently than articles that do not (Piwowar, Day, & Fridsma, 2007). Nontechnical descriptions of the research give authors greater control over how their work will be interpreted in the popular media and policy circles. And most immediately, contributors to *Archives of Scientific Psychology* have signaled that they are at the vanguard of publishing practices in a new era for scientific psychology.

### A Final Note

*Archives of Scientific Psychology* not only publishes experiments (and other research designs), but it is an experiment itself. As such, we make no claims its policies and practices are a finished product. Rather, *Archives* is a work in progress. We have every intention to closely monitor the journal’s progress, examining its impact on the scholarship it publishes and throughout the field of psychology, the authors who publish in it, and the users of its products. We remain open to thoughtful suggestions about the operation of *Archives of Scientific Psychology* and to data-driven revisions to policies and practices.

### References

- American Psychological Association. (2010a). *Ethical principles of psychologists and code of conduct*. Retrieved from <http://www.apa.org/ethics/code/index.aspx>
- American Psychological Association. (2010b). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.
- American Psychological Association’s Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist*, 61, 271–283.
- APA Publication and Communication Board Working Group on Journal Article Reporting Standards. (2008). Reporting standards for research in psychology: Why do we need them? What might they be? *American Psychologist*, 63, 839–851.
- Berkman Center for Internet and Society. (2012). *Harvard open access project*. Retrieved from <http://cyber.law.harvard.edu/research/hoap#>
- Björk, B.-C., Welling, P., Laakso, M., Majlender, P., Hedlund, T., & Guðnason, G. (2010). Open access to the scientific journal literature: Situation 2009. *PLoS ONE*, 5, e11273. doi:10.1371/journal.pone.0011273
- Budapest Open Access Initiative. (2002). Retrieved from <http://www.soros.org/openaccess/read>
- Cooper, H. (2011). *Reporting research in psychology: How to meet journal article reporting standards*. Washington, DC: American Psychological Association.
- Cooper, H., Camic, P. L., Long, D. L., Panter, A. T., Rindskopf, D., & Sher, K. J. (2012). *APA handbook of research methods in psychology*. Washington, DC: American Psychological Association.

<sup>3</sup> The data shared includes all of the data collected as part of the effort that produced the data used in the article. However, only those variables used in the analyses reported in the published article are initially made available to the public, unless the originators stipulate that all data be released. The unreleased data is embargoed until (a) analyses using those data are published or (b) 3 years have passed since the publication of the article the data.

- Gibney, E. (2012, May). Muscle from Brussels as open access gets an €80bn boost. *Times Higher Education*. Retrieved from <http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=419949&c=1>
- Laakso, M., Welling, P., Bukvova, H., Nyman, L., Björk, B.-C., & Hedlund, T. (2011). The development of open access journal publishing from 1993 to 2009. *PLoS ONE*, 6, e20961. doi:10.1371/journal.pone.0020961
- Levelt Committee, Noort Committee, & Drenth Committee. (2012). *Flawed science: The fraudulent research practices of social psychologist Diederik Stapel*. Retrieved from [www.commissielevelt.nl](http://www.commissielevelt.nl)
- National Institutes of Health. (2007). *NIH Data Sharing Policy*. Retrieved from [http://grants.nih.gov/grants/policy/data\\_sharing/](http://grants.nih.gov/grants/policy/data_sharing/)
- National Science Foundation. (2011). *Digital research data sharing and management*. Retrieved from <http://www.nsf.gov/nsb/publications/2011/nsb01211.pdf>
- Nature Publishing Group. (2004). *The pros and cons of open access*. Retrieved from <http://www.nature.com/nature/focus/accessdebate/34.html>
- OpCit Project. (2012). *The effect of open access and downloads ("hits") on citation impact: A bibliography of studies*. Retrieved from <http://opcit.eprints.org/oacitation-biblio.html>
- Piwovar, H. A., Day, R. S., & Fridsma, D. B. (2007). Sharing detailed research data is associated with increased citation rate. *PLoS ONE*, 2, e308. doi:10.1371/journal.pone.0000308
- Shatz, D. (2004). *Peer review: A critical inquiry*. Laham, England: Rowan & Littlefield.
- Suber, P. (2012). *Open access overview (definition, introduction)*. Retrieved from <http://www.earlham.edu/~peters/fos/overview.htm>
- Wellcome Trust. (2012). *Open access policy*. Retrieved from <http://www.wellcome.ac.uk/About-us/Policy/Policy-and-position-statements/WTD002766.htm>
- Weller, A. C. (2001). *Editorial peer review: Its strengths and weakness*. Medford, NJ: American Society for Information Science and Technology.