

Editorial

Dolores Albarracín
University of Illinois at Urbana Champaign

Under the leadership of 19 outstanding editors, *Psychological Bulletin* has been the flagship journal of psychology review for over 100 years. Unique to *Psychological Bulletin* is a general perspective that synthesizes the state of a scientific question and illuminates new understanding. This century-long editorial quest has proceeded through a meticulous and precise labor that keeps psychology interconnected with other disciplines (e.g., public health, economics, artificial intelligence, and communication). A sample of 332 articles spanning the journal's history, with three articles sampled randomly for each year of the journal's publication, reveals 78 represented thematic areas of such multidisciplinary concern as drug and alcohol use; health and mental health treatment and prevention; cardiovascular disorders; linguistics, language, and speech; personnel attitudes and job satisfaction; cognitive processes; attention; and rehabilitation. The *Bulletin* just speaks to many other fields, which is probably the reason it currently has the highest impact factor score of all psychology journals.

It is a privilege and an honor to have been selected to be Editor of *Psychological Bulletin*. Armed with degrees in social and clinical psychology, I have embraced breadth in my academic career and also embrace breadth in my reading, including widening my horizons by frequently perusing *Bulletin* articles outside my specialty. The journal captures me, especially when scanning titles (To name a few: "Dissociation, Trauma, and the Role of Lived Experience: Toward a New Conceptualization of Voice Hearing;" "Surviving the Holocaust: A Meta-Analysis of the Long-Term Sequelae of a Genocide;" "Reconstructing Constructivism: Causal Models, Bayesian Learning Mechanisms, and the Theory Theory;" "(Mis)perception of Sleep in Insomnia: A Puzzle And A Resolution;" "The Role Of Imagery In Memory: On Shared And Distinctive information;" and "The Mean IQ of Americans: Massive Gains 1932 to 1978"). The *Bulletin* communicates that psychological science is thriving.

Bob Sternberg (1991) cleverly described the role of *Psychological Bulletin* as continuing education. Why should one read it? Because there is no better way to stay up-to-date with the field of psychology as a whole. All of us worry (or should worry) about becoming out-of-date, about becoming overly specialized, even about losing contact with developments in our own field of specialization that do not bear immediately upon our current work or interests. The *Bulletin* will provide the best single vehicle for a continuing education in psychology (Sternberg, 1991, p. 3). As the new editor, the year 2014 has expanded my educational opportunities. I enjoy the variety of topics, the constructive scientific debate, and the influx of new ideas and methods.

I hope to continue to promote the publication of well-written, intelligent syntheses of topics with broad appeal. The *Bulletin's* editorials over the prior decades signal that precision and accuracy must come hand-in-hand with breadth. With a variety of possible types of reviews (see Cooper, 2003), readers of the *Bulletin* are accustomed to accurate, balanced treatments of a subject. Whenever quantitative synthesis is possible, precision and accuracy take the form of well-executed meta-analysis, a method increasingly used over the editorial periods (see Figure 1). The use of meta-analysis for new techniques such as neuroimaging (Taylor, Rastle, & Davis, 2013) is in its infancy but is bound to grow during this period of the *Bulletin*. Past editors have paved the way to thoroughness and methodological rigor (see Cooper, 2003; Hinshaw, 2009), and I will strive to continue to meet these high standards. Despite the advantages of meta-analyses, methodological flexibility is desirable, and my own analysis of a large sample of papers edited by Stephen Hinshaw over 5 years indicates success of various formats (citation number controlling for publication year, for meta-analyses: 18.45, $SE = 2.46$; for qualitative reviews: 16.62, $SE = 3.13$; for theoretical papers: 15.93, $SE = 3.35$). I welcome all types of reviews as long as they are systematic and ignite deep reflection about psychological phenomena.

More significant than whether a review is quantitative or qualitative is whether it contributes a cohesive, useful theory. Many of the reviews from recent decades comprise integrations of data that highlight fundamental variables and their structure, causal processes, and factors that initiate or disrupt those processes. Qualitative reviews can accelerate theoretical advancement, regularly knit connections among subfields of psychology, and may ultimately yield the fully theory-testing meta-analyses that appear in the journal. Thus, even though *Psychological Review* is the outlet for theory development and specification, *Psychological Bulletin* can be the outlet for theory testing achieved through systematic research synthesis.

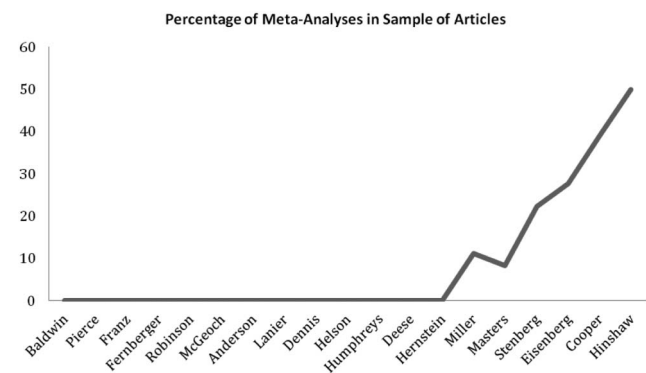


Figure 1. Percentage of meta-analyses across *Psychological Bulletin* editorial periods. Random sample of three articles per year.

Correspondence concerning this article should be addressed to Dolores Albarracín, Department of Psychology, University of Illinois at Urbana Champaign, 603 E. Daniel St, Champaign, IL 61820. E-mail: dalbarra@illinois.edu

Table 1
American Psychological Association Meta-Analysis Reporting Standards

Section and topic	Description
Title	<ul style="list-style-type: none"> • Make it clear that the report describes a research synthesis and include “meta-analysis,” if applicable • Footnote funding source(s) • The problem of relation(s) under investigation • Study eligibility criteria • Type(s) of participants included in primary studies • Meta-analysis methods (indicating whether a fixed-effects or random-effects model was used) • Main results (including the more important effect sizes and any important moderators of these effect sizes)
Abstract	<ul style="list-style-type: none"> • Conclusion (including limitations) • Implications for theory, policy, and/or practice • Clear statement of the question or relation(s) under investigation <ul style="list-style-type: none"> ○ Historical background ○ Theoretical, policy, and/or practical issues related to the question or relation(s) of interest ○ Rational for the selection and coding of potential moderators and mediators of results ○ Types of study designs used in the primary research, their strengths and weaknesses
Introduction	<ul style="list-style-type: none"> ○ Types of predictor and outcome measures used, their psychometric characteristics ○ Populations to which the question or relation is relevant ○ Hypotheses, if any
Methods	
Inclusion and exclusion criteria	<ul style="list-style-type: none"> • Operational characteristics of independent (predictor) and dependent (outcomes) variable(s) • Eligible participants populations • Eligible research design features (e.g., random assignment only, minimal sample size) • Time period in which studies needed to be conducted • Geographical and/or cultural restrictions
Search strategies	<ul style="list-style-type: none"> • Reference and citation databases searched • Registries (including prospective registries) searched <ul style="list-style-type: none"> ○ Keywords used to enter databases and registries ○ Search software used and version • Time period in which studies needed to be conducted, if applicable • Other efforts to retrieve all available studies, e.g., <ul style="list-style-type: none"> ○ Listservs queried ○ Contacts made with authors (and how authors were chosen) ○ Reference lists of reports examined • Method of addressing reports in languages other than English • Process for determining study eligibility • Aspects of reports examined (i.e., title, abstract, and/or full text) <ul style="list-style-type: none"> ○ Number and qualifications of relevance judges ○ Indication of agreement ○ How disagreements were resolved
Coding procedures	<ul style="list-style-type: none"> • Treatment of unpublished studies • Number and qualification of coders (e.g., level of expertise in the area, training) • Intercoder reliability or agreement • Whether each report was coded by more than one coder and, if so, how disagreements were resolved • Assessment of study quality <ul style="list-style-type: none"> ○ If a study quality scale was employed, a description of criteria and the procedures for application ○ If study design features were coded, what these were • How missing data were handled
Moderator and mediator analyses	<ul style="list-style-type: none"> • Definition of all coding categories used to test moderators or mediators of the relation(s) of interest
Statistical methods	<ul style="list-style-type: none"> • Effect size metric(s) <ul style="list-style-type: none"> ○ Effect size calculating formulas (e.g., means and SDs, use of univariate F- to-r transformation, etc.) ○ Corrections made to effect sizes (e.g., small sample bias, correction for unequal sample sizes, etc.) • Effect size averaging and/or weighting method(s) • How effect size confidence intervals (or standard errors) were calculated • How effect size credibility intervals were calculated, if used • How studies with more than one effect size were handled • Whether fixed-effects and/or random-effects models were used and the model choice justification • How heterogeneity in effect sizes was assessed or estimated • Means and SDs for measurement artifacts, if construct-level relationships were the focus • Tests and any adjustments for data censoring (e.g., publication bias, selective reporting) • Tests for statistical outliers • Statistical power of the meta-analysis • Statistical program or software packages used to conduct statistical analyses • Number of citations examined for relevance • List of citations included in the synthesis • Number of citations relevant on many but not all inclusion criteria excluded from the meta-analysis • Number of exclusions for each exclusion criteria (e.g., effect size could not be calculated), with examples

Table 1 (continued)

Section and topic	Description
Results	<ul style="list-style-type: none"> • Table giving descriptive information for each included study, including effect size and sample size • Tables and/or graphical summaries <ul style="list-style-type: none"> ◦ Overall characteristics of the database (e.g., number of studies with different research designs) ◦ Overall effect size estimates, including measures of uncertainty (e.g., confidence and/or credibility intervals) • Assessment of bias including possible data censoring
Discussion	<ul style="list-style-type: none"> • Statement of major findings • Consideration of alternative explanations for observed results <ul style="list-style-type: none"> ◦ Impact of data censoring • Generalizability of conclusions, e.g., <ul style="list-style-type: none"> ◦ Relevant populations ◦ Treatment variations ◦ Dependent (outcome) variables ◦ Research designs • General limitations (including assessment of the quality of studies included) • Implications and interpretation for theory, policy, or practice • Guidelines for future research
References	

Note. Modified from Cooper (2010).

Psychological Bulletin leaves a mark because its articles are cited repeatedly within and outside the field of psychology. This success is ensured by its reputation, the quality and acuteness of the published reviews, and the breadth of its contents. There are several characteristics of reviews that merit attention when considering submitting a piece for publication.

1. Authors should be mindful of the need to write for a general psychology audience. The prose must be intelligible, the topic interesting, and the interdisciplinary and applied implications explicit.
2. The main goal of *Psychological Bulletin* is to generate a cohesive, authoritative, theory-based, and complete synthesis of scientific evidence in the field of psychology. A nontrivial number of primary research papers continue to be submitted to *Psychological Bulletin*, only to be rejected without review on grounds of inadequate fit. *Psychological Bulletin* is not an outlet for primary studies, whether descriptive, correlational, or experimental.
3. Reviewers must present a problem and offer an intellectual solution. Encyclopedic pieces that simply survey all knowledge in an area fall outside the realm of the journal. Focused questions about the phenomenon are indispensable to move the field of psychology forward. Addressing previously reviewed questions can diminish the novelty and returns of a research synthesis. All manuscripts should describe innovation and differences from all prior relevant reviews.
4. Simply estimating the average size of an association or experimental effect is likely to fall short of publication standards because of the low theoretical progress generally fostered by a narrow point of view. An inspection of published reviews leaves little doubt that the published pieces have considerable sophistication and complexity.
5. A review conducted rigorously and with proper representation of the published and unpublished literature from na-

tional and international sources is perfect for *Psychological Bulletin*. Authors should make all possible attempts at estimating and reducing review biases (see Rothstein, Sutton, & Borenstein, 2005), including surveying the grey literature, translating reports from foreign languages, and exhaustively examining publication biases. Even qualitative reviews must ensure that the review is complete and that the conclusions from that review would replicate if other researchers were to attempt the same synthesis. In this spirit, all manuscripts must detail the sources and methods of literature search as well as the time span covered in a synthesis.

6. The methods of review and effect size calculation should also be properly reported, including details about the coding process, reporting adequate indexes of intercoder reliability, and verifying that the reported methods could be replicated by readers of an article. Outstanding detailed standards for meta-analysis reporting are available to authors, reviewers, and editors. Tables 1 and 2 present guidelines that currently direct scholars in psychology and other disciplines. Classic and contemporary sources (e.g., Cooper, 2010; Cooper & Hedges, 1994; Hunter & Schmidt, 1990; Hunter & Smith, 2004) and open source and commercial software (e.g., Borenstein, Hedges, Higgins, & Rothstein, 2005; Lipsey & Wilson, 2001; <http://mason.gmu.edu/~dwilsonb/ma.html>) may also be consulted for detailed technical recommendations on more specific issues. These guidelines should inspire us all to produce our very best work.

The costs of acquiring scientific data and the obstacles in reusing or updating past meta-analytic data suggest the value of preserving and sustaining usability of data of all formats and sources, particularly in the context of large-scale data management (e.g., National Science Foundation initiatives in *Big Data*, which are creating new vistas for discovery). Indeed, peer publications such as *American Economic Review* have already implemented posting of the data used in publi-

Table 2
PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Checklist

Section/topic	Description
Title	Identify the report as a systematic review, meta-analysis, or both.
Abstract	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.
Introduction	
Rationale	Describe the rationale for the review in the context of what is already known.
Objectives	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).
Methods	
Protocol and registration	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.
Eligibility criteria	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.
Information sources	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.
Search	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.
Study selection	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).
Data collection process	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.
Data items	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.
Risk of bias in individual studies	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.
Summary measures	State the principal summary measures (e.g., risk ratio, difference in means).
Synthesis of results	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ²) for each meta-analysis.
Risk of bias across studies	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).
Additional analyses	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.
Results	
Study selection	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.
Study characteristics	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.
Risk of bias within studies	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).
Results of individual studies	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.
Synthesis of results	Present results of each meta-analysis done, including confidence intervals and measures of consistency.
Risk of bias across studies	Present results of any assessment of risk of bias across studies (see Item 15).
Additional analysis	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).
Discussion	
Summary of evidence	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).
Limitations	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).
Conclusions	Provide a general interpretation of the results in the context of other evidence, and implications for future research.
Funding	
Funding	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.

Note. Adapted from Moher, Liberati, Tetzlaff, Altman, and the PRISMA Group (2009).

cation. *Psychological Bulletin* will facilitate archiving the data and programs associated with an article. These methods aim to sustain data and software-computation environments for long-term use in longitudinal meta-analyses, updates of past meta-analyses, and metanalysis, or to correlate data sources from disparate fields. The availability of the data and code voluntarily supplied by authors might widen the already wide reach of the articles published in *Psychological Bulletin* and deepen psychological knowledge.

I have published articles in *Bulletin* during the three different editorial periods of Nancy Eisenberg, Harris Cooper, and Steve Hershaw. These highly rewarding experiences (see Albarracín et al., 2001, 2005, 2006; Durantini et al., 2006; Glasman & Albarracín, 2006; Hart et al., 2009; Kumkale & Albarracín, 2004; Noguchi et al., 2007; Wilson et al., in press) hinder thoughts of what to change in the editorial process. Reviewers are always expert and almost invariably impartial, motivated by a desire to improve the science being consid-

ered for publication. Editors are thoughtful and selfless, and readers reward writers with numerous citations. After accepting to be Editor, I have benefited from the generous advice of Steve Hinshaw and, along with outstanding Associate Editors Benjamin Hankin, Michelle G. Craske, Akira Miyake, and David H. Uttal, have worked to double the size of the editorial board. We have a fantastic editorial team to properly assess submissions from all corners of psychology. The diversity of research areas covered by the journal and the current editorial team will hopefully encourage wide representation of fields, generations of researchers, nations, and social groups, including those traditionally underrepresented in academia (e.g., women, people of color, sexual minorities, and individuals with disabilities). The editorial team is committed to not only selecting outstanding articles but also guiding authors toward the clear, exciting, and challenging articles that cover the pages of this journal. We count on you, authors, to work with us and perpetuate the *Bulletin's* appeal for future generations of psychologists and other scientists.

Critical reviews of psychological problems offer an opportunity for the discipline's self-study and self-actualization. To continue to support this mission, I am interested in submissions of reviews answering questions the discipline must regularly confront: What is psychology? What questions have psychologists not fully answered yet in a given area or set of areas? Or, what are the fundamental, indispensable constructs of our discipline? *Psychological Bulletin* is ideally suited to answer those questions through systematic review articles.

Psychological Bulletin is also an optimal forum for scientific debates about the magnitude and replicability of psychological phenomena. Scientific error as well as voluntary and accidental misreporting, not to mention the occasional case of fraud, undoubtedly reduce the contribution of virtually any primary study considered in isolation. In recent years, concerns with error and scientific misconduct have received a great deal of attention within and outside of the discipline, but pointing fingers at individual researchers or idealizing the contribution of a particular form of replication is unlikely to alter the cumulative mandate of science. Instead, well-conducted research syntheses will continue to garner advantage from our *collective* contributions to excellence in psychological science. I foresee *Psychological Bulletin* at the center of those endeavors.

References

- Albarracín, D., Gillette, J. C., Earl, A. N., Glasman, L. R., Durantini, M. R., & Ho, M. H. (2005). A test of major assumptions about behavior change: A comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic. *Psychological Bulletin*, *131*, 856–897. <http://dx.doi.org/10.1037/0033-2909.131.6.856>
- Albarracín, D., Hart, W., & McCulloch, K. C. (2006). Associating versus proposing or associating what we propose: Comment on Gawronski and Bodenhausen (2006). *Psychological Bulletin*, *132*, 732–735. <http://dx.doi.org/10.1037/0033-2909.132.5.732>
- Albarracín, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, *127*, 142–161. <http://dx.doi.org/10.1037/0033-2909.127.1.142>
- Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2005). *Comprehensive meta analysis, version 2*. Englewood, NJ: Biostat.
- Cooper, H. (2003). Editorial. *Psychological Bulletin*, *129*, 3–9. <http://dx.doi.org/10.1037/0033-2909.129.1.3>
- Cooper, H. (2010). *Research synthesis and meta-analysis: A step-by-step approach* (4th ed., Applied Social Research Methods Series, vol. 2). Thousand Oaks, CA: Sage.
- Cooper, H. M., & Hedges, L. V. (Eds.). (1994). *The handbook of research synthesis*. New York, NY: Russell Sage Foundation.
- Durantini, M. R., Albarracín, D., Mitchell, A. L., Earl, A. N., & Gillette, J. C. (2006). Conceptualizing the influence of social agents of behavior change: A meta-analysis of the effectiveness of HIV-prevention interventionists for different groups. *Psychological Bulletin*, *132*, 212–248. <http://dx.doi.org/10.1037/0033-2909.132.2.212>
- Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin*, *132*, 778–822. <http://dx.doi.org/10.1037/0033-2909.132.5.778>
- Hart, W., Albarracín, D., Eagly, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: A meta-analysis of selective exposure to information. *Psychological Bulletin*, *135*, 555–588. <http://dx.doi.org/10.1037/a0015701>
- Hinshaw, S. P. (2009). Editorial. *Psychological Bulletin*, *135*, 511–515. <http://dx.doi.org/10.1037/a0014869>
- Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: Sage.
- Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research synthesis* (2nd ed.). Thousand Oaks, CA: Sage.
- Kumkale, G. T., & Albarracín, D. (2004). The sleeper effect in persuasion: A meta-analytic review. *Psychological Bulletin*, *130*, 143–172. <http://dx.doi.org/10.1037/0033-2909.130.1.143>
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & the PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, *6*(7), e1000097. <http://dx.doi.org/10.1371/journal.pmed.1000097>
- Noguchi, K., Albarracín, D., Durantini, M. R., & Glasman, L. R. (2007). Who participates in which health promotion programs? A meta-analysis of motivations underlying enrollment and retention in HIV-prevention interventions. *Psychological Bulletin*, *133*, 955–975. <http://dx.doi.org/10.1037/0033-2909.133.6.955>
- Rothstein, H. R., Sutton, A. J., & Borenstein, M. (2005). *Publication bias in meta-analysis—prevention, assessment and adjustments*. New York, NY: Wiley. <http://dx.doi.org/10.1002/0470870168>
- Sternberg, R. J. (1991). Editorial. *Psychological Bulletin*, *109*, 3–4. <http://dx.doi.org/10.1037/h0092473>
- Taylor, J. S. H., Rastle, K., & Davis, M. H. (2013). Can cognitive models explain brain activation during word and pseudoword reading? A meta-analysis of 36 neuroimaging studies. *Psychological Bulletin*, *139*, 766–791. <http://dx.doi.org/10.1037/a0030266>
- Wilson, K., Senay, I., Durantini, M., Sanchez, F., Hennessy, M., Spring, B., & Albarracín, D. (in press). When it comes to lifestyle recommendations, more is sometimes less: A meta-analysis of theoretical assumptions underlying the effectiveness of interventions promoting multiple domain change. *Psychological Bulletin*.