another conclusion is better than an extensive and inconclusive discussion. Whatever your personal opinion, avoid animosity and ad hominem arguments in presenting the controversy. Do not support your position or justify your research by citing established authorities out of context.

State the purpose and rationale. After you have introduced the problem and developed the background material, you are in a position to explain your approach to solving the problem. Make this statement in the closing paragraphs of the introduction. At this point, a definition of the variables and a formal statement of your hypotheses give clarity to the paper. Bear in mind the following questions in closing the introduction: What variables did I plan to manipulate? What results did I expect, and why did I expect them? The logic behind "Why did I expect them?" should be made explicit. Clearly develop the rationale for each hypothesis.

1.09 *Method*

The Method section describes in detail how the study was conducted. Such a description enables the reader to evaluate the appropriateness of your methods and the reliability and the validity of your results. It also permits experienced investigators to replicate the study if they so desire.

If your paper is an update of an ongoing or earlier study and the method has been published in detail elsewhere, you may refer the reader to that source and simply give a brief synopsis of the method in this section.

> We present cross-sectional and 3-year longitudinal data from a study of adults aged 55 to 84. . . . The memory tasks were those used in our previous research (Zelinski et al., 1990; Zelinski, Gilewski, & Thompson, 1980).

(See section 1.12 for treatment of multiple experiments.)

Identify subsections. It is both conventional and expedient to divide the Method section into labeled subsections. These usually include descriptions of the participants or subjects, the apparatus (or materials), and

the procedure. If the design of the experiment is complex or the stimuli require detailed description, additional subsections or subheadings to divide the subsections may be warranted to help readers find specific information. Your own judgment is the best guide on what number and type of subheadings to use (see section 3.32 for guidelines.)

Include in these subsections only the information essential to comprehend and replicate the study. Insufficient detail leaves the reader with questions; too much detail burdens the reader with irrelevant information.

Participants or subjects. Appropriate identification of research subjects and clientele is critical to the science and practice of psychology, particularly for assessing the results (making comparisons across groups); generalizing the findings; and making comparisons in replications, literature reviews, or secondary data analyses. The sample should be adequately described, and it should be representative (if it is not, give the underlying reasons). Conclusions and interpretations should not go beyond what the sample would warrant.

When humans participated as the subjects of the study, report the procedures for selecting and assigning them and the agreements and payments made. (If case studies are included, see Appendix C, Ethical Principle 5.08, on informed consent and confidentiality issues.) Report major demographic characteristics such as sex, age, and race/ethnicity, and, where possible and appropriate, characteristics such as socioeconomic status, disability status, and sexual orientation. When a particular demographic characteristic is an experimental variable or is important for the interpretation of results, describe the group specifically—for example, in terms of national origin, level of education, health status, and language preference and use:

> The second group included 40 Central American women between the ages of 20 and 30 years, all of whom had emigrated from El Salvador, had at least 12 years of education, had been permanent residents of the United States for at least 10 years, and lived in Washington, DC.

To determine how far the data can be generalized, it may be useful to identify subgroups:

> The Asian sample included 30 Chinese and 45 Vietnamese persons

or

> Among the Latino and Hispanic American men, 20 were Mexican American and 20 were Puerto Rican.

Even when a characteristic is not an analytic variable, reporting it may give readers a more complete understanding of the sample and often proves useful in meta-analytic studies that incorporate the article's results.

When animals are the subjects, report the genus, species, and strain number or other specific identification, such as the name and location of the supplier and the stock designation. Give the number of animals and the animals' sex, age, weight, and physiological condition. In addition, specify all essential details of their treatment and handling so that the investigation can be successfully replicated.

Give the total number of subjects and the number assigned to each experimental condition. If any did not complete the experiment, state how many and explain why they did not continue.

When you submit your manuscript, indicate to the journal editor that the treatment of subjects (people or animals) was in accordance with the ethical standards of the APA (see Principles 6.1–6.20 in the "Ethical Principles of Psychologists and Code of Conduct," APA, 1992a).

Apparatus. The subsection on apparatus briefly describes the apparatus or materials used and their function in the experiment. Standard laboratory equipment, such as furniture, stopwatches, or screens, can usually be mentioned without detail. Identify specialized equipment obtained

from a commercial supplier by the model number of the equipment and the supplier's name and location. Complex or custom-made equipment may be illustrated by a drawing or photograph. A detailed description of complex equipment may be included in an appendix.

Procedure. The subsection on procedure summarizes each step in the execution of the research. Include the instructions to the participants, the formation of the groups, and the specific experimental manipulations. Describe randomization, counterbalancing, and other control features in the design. Summarize or paraphrase instructions, unless they are unusual or compose an experimental manipulation, in which case they may be presented verbatim. Most readers are familiar with standard testing procedures; unless new or unique procedures are used, do not describe them in detail.

If a language other than English is used in the collection of information, the language should be specified. When an instrument is translated into another language, the specific method of translation should be described (e.g., back translation, in which a text is translated into another language and then back into the first to ensure that it is equivalent enough that results can be compared).

Remember that the Method section should tell the reader *what* you did and *how* you did it in sufficient detail so that a reader could reasonably replicate your study. Methodological articles may defer highly detailed accounts of approaches (e.g., derivations and details of data simulation approaches) to an appendix.

1.10 *Results*

The Results section summarizes the data collected and the statistical or data analytic treatment used. Report the data in sufficient detail to justify the conclusions. Mention all relevant results, including those that run counter to the hypothesis. Do not include individual scores or raw data, with the exception, for example, of single-case designs or illustrative samples. Discussing the implications of the results is not appropriate here.