

# Editor's Introduction to Vul et al. (2009) and Comments

Ed Diener

*University of Illinois, Urbana–Champaign*

The following target article by Vul et al. (2009, this issue) has generated substantial controversy prior to publication. Because of the nature of the article, I obtained commentaries from scholars with diverse viewpoints and backgrounds. Apart from the content issues of the debate about fMRI statistical analyses, the discussions about the article have raised interesting issues for scientific psychology.

## PREPUBLICATION DISSEMINATION

As soon as I accepted the Vul et al. article, I heard from researchers about it. People around the globe saw the article on the Internet, and replies soon appeared as well. Although my plan was to publish the article with commentary, the appearance of the article on the Internet meant that researchers read the article without the accompanying commentaries and replies that I had planned to publish with it.

In some fields such as economics, it is standard practice to widely disseminate articles before they are published, whereas in much of psychology this has been discouraged. An argument in favor of dissemination is that it speeds scientific communication in a fast-paced world where journal publication is often woefully slow. An argument against dissemination of articles before publication is that readers do not have the opportunity to simultaneously see commentary and replies. Another issue for most journals is that Internet dissemination could dramatically cut their subscriptions, and thereby not allow them to cover their costs. In the Internet age, the issue of prepublication distribution becomes all the more important because an article can reach thousands of readers in a few hours. Given the ability of the Internet to communicate so broadly and quickly, we need greater discussion of this issue.

Another problem that has arisen in terms of Internet "publication" of the article and the Internet replies is that different individuals will have read different versions of the article. A single reader is unlikely to read more than one version of the article and will therefore often not see later corrections and changes. Furthermore, the commentaries are to some extent replies to different versions of the article and therefore might not be entirely on-target for the final version. This makes it difficult to fully understand the arguments because comments and re-

plies might not be to the most current versions of articles, and it is impossible to fully correct this because the back and forth of revisions could continue indefinitely.

## ETHICAL ISSUES

Researchers who had published fMRI research were contacted by Vul et al. and were asked to complete a questionnaire about the statistical practices used in their article. A number of researchers contacted me to explain that they had not been informed of the purposes to which their responses would be put. Some objected to me that they were unknowing participants in a human research project and that they had not given informed consent. In my opinion, the query sent by Vul et al. did not constitute human subjects research. However, some people continue to disagree and feel that they were respondents in a study because they responded to a questionnaire about the methods they had used in their study. If the Vul et al. survey did not constitute human research, the question remains about how much information the authors should have provided about their purposes to the researchers they contacted. When inquiring about another researcher's methods and statistics, how much are we required to tell them? How much should we tell them in order to foster scientific collegiality?

## ARTICLE TONE

A frequent complaint about the Vul et al. article is that the tone was confrontational and not constructive. I have tried to avoid publishing articles with ad hominem and unnecessarily aggressive language. How confrontational an article should be is a matter of opinion, although I agree that respectful interchanges are possible and desirable even when authors strongly disagree. The original title of the article included the words "Voodoo" and that word is now deleted from the title. The current title is less sensational.

## ARTICLE ACCURACY

Several aggrieved researchers believe that their research was not correctly classified by Vul et al. One researcher suggested to me that Vul et al. incorrectly classified most articles. This obviously is

an important question, and I am not able to form an opinion independent of what the reviewers and authors have told me. The methods of science require those working in the field and other competent experts, such as statisticians, to examine the issues and determine whether the procedures are in fact problems and how widespread they are. Most important, we need to know how to avoid the potential problems in the future, and I am hoping that this set of articles will be a stimulus in that direction.

I leave it to readers to judge the article and comments and to form their own opinions. My hope is that the set of articles can help the field of neuroimaging. From my perspective, this field has a set of challenging and somewhat unique statistical

problems. In addition, there are questions related to what relative blood-oxygen levels actually signify about the mind when they are uncovered. This obviously is one of the most exciting areas in the behavioral sciences, but also one of the most challenging. I am hoping that the following set of articles helps move the best practices forward in this area of research.

I believe that the debate can itself stimulate useful discussions about scientific practices and communication. Further discussion of the issues should now take place in journals that are focused on imaging and neuroscience, so that the readers there can judge and benefit from the ensuing discussions.