

I have been asked to review AJP 3479, “Do Researchers Practice What They Preach? Unjustified Causal Language in Psychological Scientists’ Descriptions of Their Work” by Bleske-Rechek et al. and to evaluate it on the following criteria:

1. Do you think the significance of the work merits publication of the paper in its present form or in a revised form?
2. Does the scholarship adequately support the points made? If original research is reported, are the methodology, data analyses, and interpretations adequate?
3. If you think revision is needed, in what way could the author(s) improve the manuscript, either conceptually or stylistically? What in the text, table, or figures should be condensed, expanded, or otherwise changed? Does anything need to be clarified?

The authors have completed an impressive analysis of poster abstracts and summaries from the 2015 APS convention program. Their methodology is interesting but the introduction and conclusion overlook and play down, respectively, the unique nature of poster sessions which, as the authors finally note in the discussion, have a “standard of acceptance...far lower than ... for papers and talks.” The standards are also far below those of most reputable journals and other sources that feed secondary reports. The authors recognize that “undergraduate students and graduate students are more likely to be primary (poster) authors.” Consequently, the authors gradually reveal that the title is an excessively broad indictment; a more appropriate title for this paper would be “The prevalence of unjustified causative language in conference poster presentations.”

The abstract and introduction both place cognitive errors at the fore. Knowing what the authors know about the review standards for poster sessions, it seems disingenuous to begin the paper by discussing problems in cognition and decision making. There are simpler explanations for unjustified causative language at poster sessions. Like science writers and “those who report for the media,” many of these researchers understand that causative language makes a more compelling story than inconclusive language does. Poster presenters may be novice scientists who do not understand the difference between correlation and causation, but they may also be under the tutelage of an experienced advisor who knows that the standards for posters are lower than standards for conference papers and journal articles. At the receiving end, submission editors favor the language of positive results. The guidelines for the 2017 APS conference say little about how poster proposals will be evaluated, except for one unambiguous statement: *Posters that discuss new scientific findings are especially encouraged*. Conservative language isn’t rewarded. Combine this with the fact that, to quote the authors, “some scientists use unjustified causal language purposefully to enhance the apparent importance of their research” and you have a recipe for exaggeration that is almost expected at poster sessions. It’s not tough to imagine a poster author stretching the truth to gain acceptance and draw conference traffic and then admitting that they have “over interpreted things” when presenting.

All things considered, there are many reasons for why poster authors would knowingly and inappropriately use causative language and I *wholeheartedly agree* with the authors when they state, “Regardless of the processes involved, we propose that systematic efforts be put in place to remedy this communication error.” In my opinion, the authors could begin this remediation not by exploring the cognitive biases of researchers (which could certainly be contributing factors), but by asking APS reviewers if they are instructed to flag inappropriate causative language and, if not, to ask them to begin

doing so *immediately*. This would require an overdue paradigm shift and probably increase the number of rejected abstract submissions or burden the reviewers with an iterative process that would disproportionately affect those who submit their abstracts at the last minute. Considering the importance of replication, convention programmers should also adopt and communicate a willingness to tolerate less original and less conclusive reports. Good science and clear communication should be as valuable as new scientific findings. Right now, inappropriate causative language in poster sessions is as likely to be a result of self-promotion and editorial indifference as it is to be a result of cognitive gaps among those practicing psychological science.

I commend the authors for sharing their data on the Open Science Framework but I think it is unfortunate that they did not code the sub-discipline classifications for the reviewed abstracts. These classifications can be found parenthetically at the end of each abstract as they appear in the link below (The link provided in the manuscript did not work for me. It might be dead.).

<https://www.psychologicalscience.org/conventions/annual/2015-convention-program-pdf>

Figures 1 and 2, which show the prevalence of causative language in an array of unclassified poster sessions, are uninformative and distracting. The two figures say no more than two point estimates would. A comparative analysis among listed sub-disciplines would have been easy to do and could have, at least, illuminated discipline-specific habits in the use of unjustified causative language.

In conclusion, I would not recommend this manuscript for publication. There is nothing surprising about rampant, unjustified causative language in poster sessions. If the authors plan to continue working with this data set, I would first recommend retrieving the readily available sub-discipline codes and doing the aforementioned comparative analysis with the already coded abstracts. Then, I would advise the authors to present the data in a more conservative way that appropriately frames the results within the poster session culture.

Even better, the authors could supplement the data with a similar analysis of abstracts from APS journals. They could then address the impact (and, I suspect, benefit) of rigorous peer review in reducing the use of unjustified causative language. If the analysis of APS journal abstracts yields a similarly high incidence of inappropriate causative language, *that* would be cause for alarm and possibly indicative of pervasive cognitive deficiencies, or scientific ignorance, across the discipline. I suspect that it won't but, at the very least, the authors should use the comparison to make an overdue call to improve the accuracy of language in poster session abstracts, titles, and summaries.

Finally, although the authors thoroughly describe their classification process, I would recommend developing a more streamlined, algorithmic approach that lends itself to replication, even if it means excluding some abstracts from the analysis. A paper that warns against cognitive biases will raise eyebrows when it describes how data were classified "via discussion."