Spin and Boasting in Research Articles

SOME AUTHORS EXAGgerate the importance of their research and unfairly denigrate other studies. This occurs only in a minority of articles we review but is frequent enough that we have collected examples and grouped them into categories. We confess to committing some of these literary sins ourselves; improving writing is a lifelong process.

EXAGGERATING THE IMPORTANCE OF THE TOPIC IN THE INTRODUCTION

Examples include: "[X] has reached an alarming proportion," "an awe-inspiring number," and "drastic increase." These feverish words lack scientific meaning. Instead, give relevant quantities for a particular place and time: counts of events, incidence rates, or prevalence estimates. Consider describing how these quantities have changed over time. Let the reader decide whether anything is alarming, awesome, or drastic. Writing that something is "a critical priority," even if true in some sense, is just an editorial opinion unlikely to persuade. Referring to "the obesity epidemic" is a cliché. Hackneyed phrases do not make the writer appear thoughtful, are boring for the reader, and take up space. Consider whether the reader needs to once again hear that obesity is common, diabetes is increasing, and that the cost of medical care is a problem. We think not. Researchers should use a minimum of adjectives to describe their topic.

UNFAIRLY DISPARAGING PREVIOUS RESEARCH

To promote their work, authors have declared a "crisis of credibility" and a "large research gap." Some dismiss past studies for the following specious reasons:

• "Inconsistent" or "mixed" results: These fuzzy words explain nothing. We do studies in finite samples, so some difference in results is almost inevitable. If a statistical test of homogeneity indicates the difference is more than expected, a new study is unlikely to change that. Consider meta-analytic methods to describe the variation and seek explanations, such as dissimilar study populations or designs.

• "Methodologic flaws": These words are not helpful because essentially all studies have flaws. The new study will have its own flaws. If there is evidence that a prior study is biased, by all means show this. A less than optimal design is not proof of bias.

• "Small sample size": Some small studies provide useful evidence. The first report that diethylstilbestrol taken by pregnant women was related to vaginal cancer in their offspring had only 8 cases and 32 controls.[1] If all else is equal, a larger study will produce a narrower confidence interval around an estimate compared with a smaller study. But all else may not be equal; estimates from the larger study might be more biased. If several small studies have been done, pooling their estimates using meta-analysis may result in a confidence interval as narrow as that from a larger study.

• "Retrospective": Inaccurate recall is a *potential* source of bias, not evidence of bias. The studies that linked prone sleep position to sudden infant death syndrome were retrospective.

One approach (among others) is to say nothing or little about past work in the introduction. For example, "The association of exposure X with outcome Y has been estimated in 5 case-control studies [citations here] which used subject recall to measure exposure after outcomes were known. We also used a case-control design, but obtained exposure data from records created prior to the outcome." In the discussion summarize each study and compare its estimate to yours: "A study of 125 Norwegian children reported that those exposed to X, compared with those not exposed, had Y more often: adjusted risk ratio, 2.00 (95% CI, 0.96-4.16). This estimate, based on recall of exposure, was little different from our adjusted risk ratio of 1.9 (95% CI, 1.31-2.75) based on past records of exposure." This wording suggests that recall is a potential source of bias, but there is little evidence that it actually produced bias.

USING WORDS TO CONVINCE, NOT ILLUMINATE

Some authors claim clarity: "Our results clearly show," "these analyses provide clear answers," "[X] was clearly affected," "we believe our study makes it clear." Others suggest strength: "Our . . . analysis . . . provides strong evidence," "this study shows that [X] is very effective," "the robust association." Researchers should present evidence so others may understand and judge it. If findings are lucid and powerful, words to persuade are superfluous. If otherwise, these words just invite the reader to consider why neither is true.

BOASTING

Boasts of being first are common. Some are inadvertently amusing because they have so many qualifiers, like bragging about being the oldest left-handed person to walk backward up the Washington Monument. If the study is first, lack of comparison to previous work in the comment section will make this apparent. If the crowing about priority is wrong, not rare in our experi-

ence, those who were truly first will not be your friends and you reveal ignorance about prior work.

Other boasts include: "the findings . . . open up a new frontier," "this study represents the first unequivocal demonstration," "largest sample size," "strong new evidence," "one of the most detailed . . . studies," " this study provides new insights," "our comprehensive assessment." Resist immodest chest-thumping.

AN EXAMPLE OF EXCELLENT PRESENTATION

We can learn from good examples. Results of a randomized controlled trial of screening for ovarian cancer were published in 2011.[2] The introduction has one paragraph with relevant facts about ovarian cancer and another about screening trials, without editorial hype. This study randomized 34 253 women to special screening and 34 304 to usual care. The authors never brag that the study was large or first. The comment section provides helpful interpretation, equitable description of 2 other screening trials, and discusses limitations. We detected only one dispensable adjective; invasive procedures triggered by false-positive test results were called "a serious concern." We agree, but "serious" was unneeded. The conclusion eschewed both policy advice[3,4] or boring suggestions for more research.[5] This manuscript avoided both spin and boasting.

Writing for scientific journals should be as clean and concise as possible. Leave spin and boasting to others.

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