

## Not the Last Word: Planck's Principle and the Case for Pseudonymous Publication

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Studies with statistically significant results—positive findings—are more readily published. This phenomenon is known as “positive outcome bias” [7].

The word *positive* has the additional connotation of “agreeable” and “pleasant.” Positive outcome bias likely extends to those meanings, too. Studies with agreeable and pleasant conclusions—namely, those that endorse the status quo, confirm prevailing expert opinion or prop up

popular beliefs—seem to be the most common type I encounter in my reading.

Writers want to be liked. Thus, papers debunking popular operations are rare and newsworthy [6, 11]. Beyond that, “whole research areas are off-limits,” according to the journalist, Katie Herzog, [5] owing to what I think is a rational desire to avoid the scorn that disagreeable or unpleasant findings might bring [8].

To remedy the preference for agreeable and pleasant papers, I propose that authors should be allowed to publish without signing their names to their work.

Full anonymity is probably a bad idea, as anyone familiar with internet trolls can attest. Full anonymity can foster research fraud and undermine the credibility of results as well. Nonetheless, giving authors the possibility to write with a certain degree of concealment—say, the option to reveal their identity to the editor, but publish under a pseudonym—may encourage them to write with a degree of necessary but absent openness.

There is a noble history of pseudonymous publication. For example, the essays written by Alexander Hamilton, James Madison, and John Jay in 1787 to promote the ratification of the US Constitution, now known as The Federalist Papers, were published under

the pseudonym, “Publius.” This small bit of privacy no doubt gave the authors the freedom to express their opinions more candidly.

Likewise, in academic settings, when candor is critical, commentators are offered confidentiality. Applicants to residency programs, for example, are encouraged to waive their rights to see their letters of recommendation, to give the letter-writers necessary room for bluntness, if that’s what’s needed.

Another related benefit of hiding the author’s name is that this step will allow readers to focus on the arguments being made and not the authors who are making them [9]. In that regard, Okike et al. [12] found that reviewers who were able to see writers’ identities were more likely to recommend a paper associated with prestigious authors and institutions, as compared to reviewers receiving completely deidentified manuscripts.

Moreover, meta-analyses and systematic reviews—our most powerful methods for reaching valid conclusions—also employ anonymity implicitly: They consider only the content of a manuscript and not the author byline.

Granted, most authors will want their names attached to their work. Scientific journals do not pay royalties; publication credit is the only coin of the realm. Still, for some research studies, the potential shame and blame of the conclusions are so great that authors might prefer to forgo the publication credit and bury their results. In those cases, an option for anonymous or

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pseudonymous publication helps the (unpopular) truth to emerge.

Science advances by dialectic; confrontation and refutation are inherent. The natural human preference for pleasantness impedes that. Too many people are apparently unwilling to challenge consensus. Pseudonymous publication will thus allow science to progress that much faster.

The physicist Max Planck wrote in his autobiography, “A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die” [10]. A paraphrase of this insight, “Science progresses one funeral at a time,” is known as Planck’s principle. The basis of Planck’s principle is that the quality of the argument is often subordinate to the identity of who is making it. And who am I to disagree with a Nobel Prize winner like Planck? If only the point had been raised anonymously.

### Mininder S. Kocher MD, MPH

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In his *Not the Last Word* column, Dr. Bernstein makes a provocative argument for pseudonymous publication. His main argument is that author anonymity will allow science to progress faster as authors will not be inhibited to challenge the status quo.

There are practical limitations to this approach. For example, citations are necessary for academic promotion. More concerning, full anonymity can promote base and hurtful behavior as seen not only in the comment sections of internet sites but even recently in a discussion group of orthopaedic surgery resident applicants [1].

By attaching your name as an author to a scientific publication, you are standing by your work. You are stating that you were involved in the study process (hypothesis, study design, data collection, and analysis) and that you stand by the conclusions. You are being responsible.

I think Dr. Bernstein raises some interesting points. Perhaps there is utility to a journal section that publishes anonymous, controversial, or challenging studies, where the author identity is known to the editors but not the readers. Certainly, research that challenges the status quo should be encouraged, not quashed.

However, I feel that Planck’s principle of “science progresses one funeral at a time” is fundamentally cynical. Good science is aspirational and optimistic. A well-done study with a hypothesis, sound study design, and careful data analysis can challenge the status quo. Such a study can lead to other studies, eventually producing a body of work that changes practice. In 1905, at the age of 47, Max Planck was the godfather of theoretical physics and an editor of the leading physics journal *Annalen der Physik*, where he promoted a controversial paper from a relatively unknown young physicist named Albert Einstein. Had Planck not championed Einstein’s controversial theories that challenged the status quo (instead of waiting until he died), the history of physics would have been very different.

### Leonid Kandel MD

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In his excellent column, Dr. Bernstein publicly suggests that writing under a pseudonym would allow scientists to

feel free to write radical revolutionary articles and publish negative results. Dr. Bernstein feels that writing anonymously would encourage innovative publications that do not align with the consensus.

I disagree. People act according to various incentives, most of them subconscious. Academic surgeons, like other scientists, are no exception—not in their clinical practice, and not in their academic work. For example, surgical usage rates increase almost linearly with the per capita supply of surgeons [3]. The incentives to publish are no different. Pure curiosity and scientific truth are not authors’ only motivations. We also publish because we like to see our name in print, which helps advance our academic careers.

The prestigious Goncourt prize for French literature may be given to an author only once. But Romain Gary, a war hero and a prominent writer, received it twice. Once as Romain Gary, and a second time after publishing under the pseudonym, Emile Ajar [2]. What was his reason for publishing under a pseudonym? Did he feel freer to write about an unpleasant topic [13]? Did he enjoy the adventure of this hoax? Or maybe he was incentivized by the tremendous book sales that would surely follow should he receive the top prize again? Probably all are true.

Allowing an option of pseudonymous authorship would change the incentives of publishing. There would be little or no “fame” incentive. Today, in the age of computer hacking, it would ease the way for fraudulent research. The temptation for scientists to adjust their results for a revolutionary conclusion may be too strong. Some authors might just enjoy the mischief itself.

Another problem lies in the readers’ attitude to the articles published anonymously. The journal will have to

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decide how to manage the names of the coauthors and their institutional affiliations. Even the countries of origin will have to remain hidden. It will be difficult for readers to cope with these riddles. In our era, when we demand transparency and every published word must be accompanied by conflict of interest disclosures, the credibility of pseudonymous publications would be severely undermined.

I believe that the solution should involve leadership and education. Leading journals like *CORR* should continue to publish and emphasize the importance of publishing “negative” studies [7]. This holds true, as Dr. Bernstein noted, both to well-performed studies with negative results and to well-preformed studies with revolutionary results. These should be published in special sections, accompanied by commentaries (like *CORR*<sup>®</sup> Insights [4]), by prominent specialists in the field. This would bring in more readers and will make these types of papers more prestigious. The process will take time, but in the end, authors and

journals would be aligned with this trend, and the scope of our academic and clinical discussion would grow.

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