

## Innovation, quality and quantity: choose two

Innovation, quality, and quantity are important characteristics when assessing science outputs by researchers, research groups, and graduate studies programs. To achieve excellence in all three dimensions is impracticable. Innovative and high-quality research output cannot be voluminous, since it takes time to test new ideas properly. Maintaining high-volume, high-quality output is possible through repeatedly applying standardized protocols, but this type of research will not be innovative, since rigid protocols only apply to a few types of research questions. Finally, testing innovative hypotheses in a short timeframe makes it impossible to implement the necessary methodological rigor, and, in some extreme cases, may even stimulate undesirable practices such as fraud and data fabrication.

Assessment processes that prioritize the publication of large volumes of articles in journals with high impact factors have induced researchers to choose the triple combinations of high volume/high innovation/low quality or high volume/high quality/low innovation. In *Micromotives and Macrobehavior*<sup>1</sup>, Schelling asserts that individuals adopt behaviors to achieve personal objectives according to their preferences, and that these behaviors and preferences are influenced by the behaviors and preferences of others. According to him, an individual's success in adapting to their social environment does not guarantee that the social environment will be satisfactory to them or to the other individuals who have collectively built it. In a survey of American researchers, Anderson et al.<sup>2</sup> found a dissonance between what they considered an ideal behavior in research and their perception of how other researchers actually behave. According to the authors, this dissonance is harmful because it leads to burnout and alienation, while favoring behaviors that are inconsistent with the idealized standard.

The generalized dissatisfaction with the current system of research assessment and its unwanted consequences has led to initiatives such as the San Francisco Declaration on Research Assessment (DORA) (<http://am.ascb.org/dora/>), the Leiden Manifesto for Research Metrics (<http://www.leidenmanifesto.org/>), and The *Lancet* REWARD (REduce research Waste And Reward Diligence) (<http://www.thelancet.com/campaigns/efficiency>). All these initiatives propose measures to change the way research assessment is conducted. In Brazil, the Public Health field has increasingly debated the need to adopt new models for assessing researchers and graduate studies programs. CSP has endeavored to contribute to the debate by publishing editorials and articles on the subject.

According to a series of articles published in *The Lancet* and related to REWARD, an estimated 85% of research funds can be considered wasted<sup>3</sup>, as a result of poor development, beginning with the studies' design and extending all the way to their data analysis<sup>4</sup>. Systematic reviews, which are supposed to summarize the existing evidence, often fail because they review low-quality studies<sup>5</sup>. Finally, the quality of the texts submitted for publication also raises concerns<sup>6</sup>.

More than 2,000 articles were submitted to CSP in 2015. As Editors, we feel honored to receive so many submissions, but are concerned by the fact that we rejected 70% of submitted articles without referring them for peer review. Limited relevance, lack of originality, and methodological flaws were the main reasons for rejection prior to peer review. In some cases, it is possible that research funding is being wasted. Publication costs represent only a fraction of research funds. At CSP, we guarantee that publication remains free-of-cost to authors, but every article we process entails a cost and public expenditure, regardless of whether the article is accepted or rejected. Strict criteria for publication of articles in CSP aim not only to maintain the high quality of our published content, but also to avoid wasting resources with peer review, editing, and publication.

Research waste must be curbed not through linear budget cuts, but by adopting adequate criteria for assessing researchers, research projects and outputs. Curbing waste also depends on the choices that all of us, researchers and authors, make.

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1. Schelling TC. *Micromotives and macrobehavior*. Revised edition. New York: W. W. Norton & Company; 2006.
  2. Anderson MS, Martinson BC, De Vries R. Normative dissonance in science: results from a national survey of U.S. scientists. *J Empir Res Hum Res Ethics* 2007; 2:3-14.
  3. Chalmers I, Bracken MB, Djulbegovic B, Garattini S, Grant J, Gülmezoglu AM, et al. How to increase value and reduce waste when research priorities are set. *Lancet* 2014; 383:156-65.
  4. Ioannidis JPA, Greenland S, Hlatky MA, Khoury MJ, Macleod MR, Moher D, et al. Increasing value and reducing waste in research design, conduct, and analysis. *Lancet* 2014; 383:166-75.
  5. Roberts I, Ker K. How systematic reviews cause research waste. *Lancet* 2015; 386:1536.
  6. Carvalho MS, Travassos C, Coeli CM. Um bom texto. *Cad Saúde Pública* 2013; 29:1701-3.