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LETTERS TO THE EDITOR

Orchestrated efforts to foster responsible research

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In his paper "Fostering responsible research practices is a shared responsibility of multiple stakeholders" (April 2018), Lex M. Bouter [1] highlights and appeals for orchestrated efforts to foster responsible research. We applaud Bouter's scholarship on promoting transparency and openness in biomedical research, and we share the same concern on the current replicability crisis.

The science development is inevitably imbued with errors, fabrications, and falsifications, which makes reproducibility essential by separating true science from mere anecdote and even pseudoscience. When scientists try to replicate previous studies, two scenarios will emerge: consistent if not exactly the same findings as the formers, or different or conflicting results. Regardless either due to misconducts or flawed research, irreproducibility, without proper explanations, often casts shadows on responsible research. This applies to both natural and social sciences.

We echo Bouter's appeal that improving reproducibility requires persistent and adaptive efforts of all stakeholders in research ecosystem. And we believe this is particularly important for emerging science powers where academic misconducts are looming over their escalating R&D investment and scientific achievements (Hu et al. 2018) [2].

Fortunately, tremendous efforts facilitating research integrity and reproducibility have been put forth by major funding agencies, universities, and third parties globally. Take China for example. Over the last decade, the Chinese government has penned substantially stricter regulations combating research misconduct. A cornucopia of guidelines promulgated by a variety of government organizations has conveyed a clear signal of China's tighter stance fostering responsible research. Yet, prescription alone is not sufficient to deter prospective fraudsters and irresponsible researchers. All countries including China need to move beyond releasing guidelines and penalizing egregious cases. Orchestrated including institutionalizing research ethics and integrity training through education is critical in fostering responsible research in the long run.

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References

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Unsuccessful replication is not a sign of research misconduct

I applaud Tang et al. for pointing out that in China—as is the case in Asia at large—interesting initiatives to foster research integrity are being taken [1]. In fact this is one of the main reasons that the 6th World Conference on Research Integrity will be held in Hong Kong (www.wcri2019.org). I'm also grateful for the opportunity to clarify some common misunderstandings about replicability and replication.

First, these two concepts should be separated. Replicability means that a study can be repeated because a detailed study methods description is available. Replication means that a study is actually replicated, with or without reaching the same conclusions. No replication without replicability. Therefore the rising tide of preregistration [2] and registered reports [3] is so important. When a detailed study protocol is formulated and made accessible—possibly conditional or with an embargo—before the data are collected, this serves two important goals: (1) the study is replicable, and (2) instances of selective reporting can be identified.

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