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EDITORIAL

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THE SCIENTIFIC INTEGRITY CODE: NECESSARY AND IMPROVABLE

EL CÓDIGO DE INTEGRIDAD CIENTÍFICA: NECESARIO Y PERFECTIBLE

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EDITORIAL

There are many definitions of scientific integrity, all of which share a common denominator: the development of good research practices that ensure honesty and scientific rigor. According to the U.S. National Science and Technology Council, scientific integrity can be conceptualized as "adherence to professional practices, ethical behavior, and principles of honesty and objectivity in proposing, performing, reviewing, reporting, and communicating scientific activities and results"[1]. Ciubotariu highlights scientific rigor, reproducibility, and responsibility as fundamental principles for its development[2]. Scientific integrity plays a crucial role in preventing bias, data fabrication, plagiarism, and other forms of scientific misconduct. It is involved not only in the conduct of scientific research but also in its communication and application.

Unfortunately, we are witnessing various forms of scientific misconduct, including the commercialization of theses, plagiarism, data fabrication, and the buying and selling of scientific articles. The need for such documents to access certain positions or advance academically or politically—as well as the financial incentives linked to publication in indexed journals—appear to be key drivers of inappropriate scientific conduct. This problem reaches the highest levels of government and not only has individual consequences but also affects the entire healthcare system, casting doubt on the credibility of decision-making based on questionable studies. This issue even prompted the U.S. authorities to take a stand in order to restore trust in government through scientific integrity[3].

While a lack of ethics and varying degrees of corruption account for many cases of misconduct, another relevant factor appears to be the lack of awareness about the principles of scientific integrity, especially among early-career researchers. Among the types of misconduct linked to ignorance, the most common at the start of a research career is plagiarism—particularly when reproducing methodologies from other studies or writing the theoretical framework or literature review ("state of the art") in university theses. Another widespread questionable practice in many institutions is "honorary authorship," which may result either from an author's desire to curry favor with superiors or from superiors' demands to be listed as authors despite not meeting authorship criteria, solely due to holding managerial positions.

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In this context, the Peruvian National Council for Science, Technology, and Technological Innovation (CONCYTEC, by its Spanish acronym), as the governing body of the National System for Science and Technology (SINACTI, by its Spanish acronym), has published the National Code of Scientific Integrity [4]. The initiative to establish a scientific integrity guideline in an environment marked by growing misconduct in research and scientific publishing represents a necessary and timely response. This is especially important for early-career researchers, and in fact, the teaching of basic scientific integrity concepts should be incorporated into university curricula in science and technology-related programs. The code also provides a common framework for all entities and professionals involved in the development and use of science and technology.

Nonetheless, certain aspects remain open to improvement or raise ongoing debate. One such issue is institutional affiliation and another is the definition of a scientific article. Regarding institutional affiliation, there are gaps concerning the institution's contribution to the author's work, and there are no clear guidelines on when dual affiliation may be justified—particularly in biomedical research conducted in healthcare facilities, where both the hospital (usually a teaching hospital) and the university provide monetary or non-monetary support such as use of facilities, equipment, research hours, or institutional backing. As for the definition of a scientific article, including abstracts presented at conferences should not qualify as original research articles, which by definition undergo a rigorous peer-review process designed to ensure quality, reproducibility, and adherence to current scientific standards. Certainly, the code can be improved in future versions to include emerging research topics such as the use of artificial intelligence, biomarkers, or studies related to gene editing. Moreover, given their specificities, each institution involved in science and technology should supplement the code with recommendations tailored to their area of activity.

The scientific integrity units that each institution must establish (which, for now, remain the exception rather than the rule) will play a key role in this task.

In conclusion, the code is a necessary but not sufficient tool to promote quality research in Peru. It is one more step—among many yet to be taken—toward fostering a culture of scientific integrity. However, the support and oversight provided by institutions linked to science and technology will be the core element in consolidating a scientific environment that fosters the development of our country.

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