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Decolonizing science and open-access publishing: a problem or an opportunity?

Descolonização da ciência e publicação de acesso aberto: um problema ou uma oportunidade?

Decolonización de la ciencia y la publicación de acceso abierto: ¿un problema o una oportunidad?

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ABSTRACT

This opinion article examines the complex relationship between open-access (OA) publishing and the decolonization of science, highlighting how current OA models may inadvertently perpetuate colonial power dynamics in knowledge production and dissemination. While Global North research institutions increasingly pay for open-access articles to make research publicly accessible, the article processing charges (APCs) create significant barriers for researchers from the Global South. These charges, typically in highly valued currencies like Euros or US dollars, combined with translation costs for non-English speaking countries and reduced funding for science in many Global South nations, reinforce existing inequalities. The paper draws on decolonial scholarship, particularly Walter Mignolo's concept of the geopolitics of knowledge, to analyze how conditioning publication on both Western academic models and economic resources deepens the South/North dependency and maintains the Euro/Anglo-centric hegemony in science. As more prestigious journals become exclusively OA with mandatory APCs, researchers from less-funded institutions face increasing exclusion from knowledge production, even as knowledge access becomes theoretically more democratic. The article concludes by highlighting emerging initiatives to address these inequities, including Science's non-paying public access systems and open-access non-paid journals in the Global South, while emphasizing that decolonizing science and open-access publishing should work in tandem to create a more equitable and inclusive scientific landscape that values diverse knowledge systems.

Keywords: open access publishing, decolonization of science, Global South, article processing charges, scientific inequalities.

RESUMO

Este artigo de opinião examina a complexa relação entre publicação de acesso aberto (OA) e a descolonização da ciência, destacando como os modelos atuais de OA podem

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inadvertidamente perpetuar dinâmicas coloniais de poder na produção e disseminação do conhecimento. Enquanto instituições de pesquisa do Norte Global pagam cada vez mais por artigos de acesso aberto para tornar a pesquisa publicamente acessível, as taxas de processamento de artigos (APCs) criam barreiras significativas para pesquisadores do Sul Global. Essas taxas, tipicamente em moedas altamente valorizadas como Euros ou dólares americanos, combinadas com custos de tradução para países não anglófonos e redução de financiamento para ciência em muitas nações do Sul Global, reforçam desigualdades existentes. O artigo baseia-se em estudos decoloniais, particularmente no conceito de geopolítica do conhecimento de Walter Mignolo, para analisar como o condicionamento da publicação tanto a modelos acadêmicos ocidentais quanto a recursos econômicos aprofunda a dependência Sul/Norte e mantém a hegemonia euro/anglo-cêntrica na ciência. À medida que mais periódicos prestigiosos se tornam exclusivamente OA com APCs obrigatórias, pesquisadores de instituições menos financiadas enfrentam crescente exclusão da produção de conhecimento, mesmo quando o acesso ao conhecimento se torna teoricamente mais democrático. O artigo conclui destacando iniciativas emergentes para enfrentar essas desigualdades, incluindo sistemas de acesso público não pagos da Science e periódicos de acesso aberto não pagos no Sul Global, enfatizando que a descolonização da ciência e a publicação de acesso aberto devem trabalhar em conjunto para criar um panorama científico mais equitativo e inclusivo que valorize sistemas de conhecimento diversos.

Palavras-chave: publicação de acesso aberto, descolonização da ciência, Sul Global, taxas de processamento de artigos, desigualdades científicas.

RESUMEN

Este artículo de opinión analiza la compleja relación entre la publicación de acceso abierto (OA) y la descolonización de la ciencia, destacando cómo los modelos actuales de OA pueden, involuntariamente, perpetuar las dinámicas de poder colonial en la producción y difusión del conocimiento. Si bien las instituciones de investigación del Norte Global cada vez más financian la publicación de artículos de acceso abierto para garantizar el acceso público a la investigación, los cargos por procesamiento de artículos (APC) representan una barrera significativa para los investigadores del Sur Global. Estos cargos, generalmente en monedas de alto valor como el euro o el dólar estadounidense, sumados a los costos de traducción para los países no angloparlantes y a la menor financiación para la ciencia en muchos países del Sur Global, refuerzan las desigualdades existentes. El artículo se basa en la teoría decolonial, en particular en el concepto de geopolítica del conocimiento de Walter Mignolo, para analizar cómo condicionar la publicación a modelos académicos occidentales y a recursos económicos profundiza la dependencia Sur-Norte y mantiene la hegemonía eurocéntrica en la ciencia. A medida que las revistas más prestigiosas se convierten en publicaciones exclusivamente de acceso abierto con APC obligatorios, los investigadores de instituciones con menor financiación se ven cada vez más excluidos de la producción del conocimiento, incluso cuando el acceso al conocimiento se vuelve teóricamente más democrático. El artículo concluye destacando

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iniciativas emergentes para abordar estas inequidades, como los sistemas de acceso público sin costo de Science y las revistas de acceso abierto gratuitas en el Sur Global, y enfatiza que la descolonización de la ciencia y la publicación de acceso abierto deben complementarse para crear un panorama científico más equitativo e inclusivo que valore la diversidad de sistemas de conocimiento.

Palabras clave: publicación de acceso abierto, descolonización de la ciencia, Sur Global, cargos por procesamiento de artículos, desigualdades científicas.

Global North research institutions are increasingly paying for open-access (OA) articles. While this helps disseminate research and make it accessible and public, at the same time, it may perpetuate entrenched processes of coloniality.

The production and access to science are reproducing the relationship between the unequal Global South and Global North. Increasingly, more or less consciously, scientific institutions may be reinforcing power dynamics that are influenced by their geopolitical position and the economic (but also gender and ethnic) context in which they are situated (Gewin, 2022). In this sense, scientific production and access to it are steeped in historical injustices.

In the Global North, recent publicly funded research through open access (OA) publications has found a way to be widely accessible. To a large extent, this current model relies on the introduction by many publishers of article processing charges (APCs) to be paid by researchers or public research institutions (Tollefson & Van Noorden, 2022). These charges are usually in highly valued currencies such as Euros, Swiss francs, or US dollars within the foreign exchange market. In today's scientific landscape, where metrics are crucial, obtaining access to these open access publications can prove to be prohibitively expensive for the scientific community in the Global South. This economic factor can be viewed as a powerful force that creates a challenging arena for researchers in the Global South.

For instance, in non-English speaking countries of the Global South, the scientific community must cover translation costs in addition to the fees mentioned. In a national

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context where science is not always viewed as a priority due to political and socioeconomic factors, this can present a significant challenge. Furthermore, researchers from these communities often make individual efforts, without adequate financial support, to search for, establish and maintain productive collaborations with research centers and universities in the Global North. In recent years, due to political and economic decisions as well as issues of vision and ideals, several countries in the Global South have faced a sharp reduction in the financial resources allocated to scientific production. For example, in Brazil, the financial support of Brazil's National Council for Scientific and Technological Development (CNPq), which peaked in 2016 at about \$600 million, has been steadily declining, reaching its all-time low of \$218 million in 2021 (Kowaltowski, 2021).

Decolonial scholar Walter Mignolo (2009) points to a geopolitics of knowledge that reveals the epistemic privilege of the 'first world', portrayed as having science and knowledge, while the 'third world' is perceived as having culture. With that, a dichotomy and a hierarchy are established in science between the 'subject' and the 'object' of knowledge in a modern/colonial world. From Mignolo's reflections, it is possible to conclude that scholars and theories acquire academic relevance when published in journals in the Global North, that dictate unilateral models of "good science" or "best science."

In this regard, conditioning publication not only on framing in the academic models of Western science but also on access to economic resources determines two dynamics: on the one hand, it deepens of the constraint of access to what is considered an elite academic position; on the other, it enables the continuity of the dependence South/North. Consequently, this subordination is perpetuated and reinforced through the colonization of knowledge, sustained by the hegemony of the Euro/Anglo-centric model of science. Thus, the colonialism of science is also partly reflected in the disparities of financial resources for the production and concealment of science. Yet, in a growing context of scientific collaborations between the Global South and the Global North, it could raise equity concerns as well as reinforce entrenched mechanisms of power

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relations. Alongside the exclusion of less-funded academic institutions, it may have a negative impact on their researchers who cannot receive financial support to publish in renowned academic journals (Kwon, 2022; Plackett, 2021).

When more and more top journals are becoming exclusively OA for APCs, the real risk is that it will become difficult (if possible) to access publications from public institutions in the Global South. As a result, now knowledge access might be more democratic (or is it intended to be more democratic), but production might be less. Given the scarcity of financial resources for research in the Global South, the priority of OA high-level research cannot and should not be tied to APCs for its accessibility. This will perpetuate a mechanism of colonized science, where those who lose out are the scientific institutions that, often for geopolitical (and ideological) causes, do not have the financial resources to disseminate their research, their knowledge locally produced - not to mention knowledge produced outside the “western model” of knowledge production .

While this issue stimulates even more the current debate on how to decolonize the academic publishing system, including its discounts for authors in the Global South, are growing, pioneering initiatives such as Science's non-paying public access systems (SNPAs) (Holly, 2022) are also moving forward. In addition, it stays remarkable the academic systems based on open-access non-paid journals as several in the Global South.

Making institutions in the Global North aware of this problem and engaging researchers and governments become another important step in finding solutions. The decolonization of science is gaining momentum, and it becomes critical to understand the current mechanisms of exclusion and how to overcome them in the unequal geopolitical scientific context in contemporaneity.

Finally, decolonizing science and open-access publishing are not mutually exclusive but rather two sides of the same coin. Together, they have the potential to transform the scientific landscape into a more equitable, diverse, and inclusive field that acknowledges the value of all diverse knowledge systems. By recognizing the problems and seizing the opportunities that arise from this synergy, the scientific community can take significant steps toward a more just and unbiased future.

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