

### When reason is nourished by affections: reflections of young scientists on the challenges of science in Latin America

#### Quando la razón se nutre de los afectos: reflexiones de jóvenes científicos en los desafíos de la ciencia en Latinoamérica

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Dear Madam Editor:

Concerning the editorial published in this journal <sup>(1)</sup>, we are writing to you with the conviction that both medicine and the sciences from which it is nourished, and especially research as a binding practice, should start to establish a dialogue with other types of knowledge that will allow making changes that deeply impact on populations.

Traditionally, science has separated emotions from reason to establish the judgement of truth, assuming that issues such as affectivity create biases in how science understands the world <sup>(2)</sup>. Currently, from a neuroscience perspective, it is understood that what we call “reason” and “emotion” are indivisible and affect each other <sup>(3,4)</sup>. They have never been opposites; they are the product of our biology influenced by culture and interaction with nature <sup>(5)</sup>, which has allowed enhancing science with new visions and projects. In their particular reflection on the region, Miranda-Nieto et al. <sup>(6)</sup> highlight the need for a systematic change in the way science is funded, conducted and valued, aimed at creating a more inclusive, supported and sustainable scientific community for everyone. We would like to share with you the creation of the Science Leadership Programme in Latin America and the Caribbean (SLP-LAC [2022-23]), which considered the core of the region (Amazon campus of Universidad Nacional de Colombia) for the meeting of young scientists.

The SLP-LAC, organized by Global Young Academy, was attended by researchers from different countries. Discussions were held on the issues and challenges faced by young scientists to become renowned and influential researchers in the region. One of the questions raised and on which we, the authors, focused is how to make scientists important actors in building a knowledge culture in Latin America that prioritizes people’s needs and influences the creation of public policies. Our answers fall into three main areas:

**Cooperation between scientists and communities:** Traditional science has been working based on the hegemony of a technical-economic rationality <sup>(7)</sup>. However, the dialogue between scientists and non-scientists may influence the world of practice. The dialogue between the different types of knowledge demands to listen carefully, address overall research issues and avoid acting only as advisors in interventions or fieldwork in populations. Moreover, it allows scientists to recognize themselves as complex and diverse social individuals and non-scientists to think of science as an option of knowledge. Auler et al. <sup>(8)</sup>, when advocating the Latin American thinking of Science, Technology and Society, claim that research should speak on behalf of actors involved in historically forgotten problems. Also, research aimed at solving social and environmental problems faces the challenge that research and funding programs (calls) may be focused on topics relevant to people’s needs and the environment. An example of implementation is Ciencia en Panamá (Science in Panama) project ([www.cienciaenpanama.org](http://www.cienciaenpanama.org)).

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**Scientists in public policies:** Public policies are created by a complex process that involves multiple actors, including governments, nonprofit organizations, companies, communities and scientists. In this framework, the role of science and scientists in the creation of public policies that link science and real problems usually consists in providing objective and thorough information to communicate the situation analysis, proposing alternatives and evaluating them. Scientists from our region should play a key role in project formulation so that society may benefit from more effective and sustainable policies. The approach could start with internships for scientists in government institutions. This would allow them to better understand challenges and opportunities faced by government officers in policy formulation and implementation, and would provide them with access to both scientific knowledge and expertise. Another key in this area is communication of scientific works: the clarity of the information provided to make it accessible to communities and decision-makers. This is the case of Asociación Mexicana para el Avance de la Ciencia (Mexican Association for the Advancement of Science (<https://www.amexac.mx/>)).

**Diaspora networks:** It refers to the creation of bonds and connections between individuals or groups that have emigrated from their country to other parts of the world. They may be both social and professional networks that promote knowledge and resource development and exchange. In addition, they may be useful to support migrants in their integration process in their new home and keep cultural and social bonds alive with the communities they came from. This favors Global North-South collaborations while enhancing South-South collaborations. Networks may be both virtual and in-person as well as include people from different professions and sectors, which promote mutual understanding and respect between different communities. Fellowship programs may be effective to support young scientists from developing countries to collaborate with their colleagues in developed countries. Inputs and infrastructure involved in this challenge would favor the emergence of new ways to see the world from different empirical fields, thus benefiting epistemologies from the South in the widest international debate. One example is the Network of Argentine Researchers, Scientists and Technologists Abroad Program (<https://www.argentina.gob.ar/ciencia/raices/redes-exterior>).

The reason nourished by affections allows considering multiple aspects of the world, where the territory and communities are taken into account in their cultural, environmental and general care aspects of life. There are examples where a more humanistic approach in research/science is valued and that, when replicated in the region, would have an impact on the construction of the culture of knowledge.

Given the changes during the 21st century such as biodiversity loss, altered biogeochemical cycles, climate crisis, emerging diseases, political instability, among other issues, science may be part of the solutions to preserve human life on Earth in fair and proper conditions.

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