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Thought Piece on (Global) Knowledge Infrastructures

Knowledge infrastructures (KIs) are robust networked systems rooted in knowledge regimes, which are responsible for housing, producing, circulating and curating data and information capable of being converted into innovation and social change. Such complex infrastructures are expected to adapt and evolve based on their users' and creators' experiences. In other words, KIs should have the ability to embody the characteristics of the communities, organizations and nations they serve, and, interactively, shape them. To do so, more than merely conforming to predefined processes, KIs should stimulate continuous collaboration, while being sensible of and entwining the wide array of expertise, identities and expectations of all actors involved in their co-creation.

Because KIs are the backbone of high-level decisions and discoveries expected to directly impact development and economic growth, they can also function as powerful machines to serve specific political agendas. According to Latour (1993, p.111), "science is indeed politics pursued by other means, means that are powerful only because they remain radically other". Though these means are not always foreseeable or transparent, we must acknowledge their existence and reflect on their influence in KIs.

The sophistication of current technologies and cost reduction in information processing and storage have contributed to the fast growth of KIs, but certainly have not lessened the challenges associated with their maintenance and longevity. Sustainability is at the core of every social-technical participatory system, including KIs, encompassing interconnected cultural, legal, technological and behavioral issues that should be observed. For KIs to advance and grow the repertoire necessary to produce the desired transformative outcomes, golden rules such as commitment to value creation and trust must be constantly nurtured. Finding ways to stimulate and consolidate balanced accountability from the various actors involved could not only help KIs' survival, but also help them thrive long-term.

The sustainability issue is particularly critical for global KIs dedicated to "thinking" about international affairs. While the notion of "infrastructural globalism" is proclaimed as a way to unite transnational actors to create valuable knowledge towards common causes, global governance is challenging and not always exempted from asymmetries as it often resembles preexisting geopolitical power imbalances between developed and developing countries. With growing worldwide concerns stemming from areas such as biodiversity conservation, diseases control and climate change, global KI initiatives are surfacing to support international agendas. For many developing countries that are still behind in terms of supercomputing facilities, being part of a global cooperation system is often the only resort to have their knowledge accessible worldwide. This visibility, however, does not diminish their concern about entrusting data to global KIs, whose control may reinforce scientific sovereignty from the Global North, as well as economic and social disparities.

Given the legitimacy and urgency of some global concerns to be discussed internationally, as well as the importance of enduring transnational cooperation towards common scientific efforts, some pressing higher-level questions to minimize political frictions and unbalances present in KIs acting globally should be asked: How could knowledge producers, with disproportional levels of development, benefit equally from their participation in global KIs? What factors should be considered to not only recognize the potential sources of power and control, but also prevent them from endangering collective interests and the endurance of global KIs? Which strategies could be adopted to reconcile disparities and inequalities among knowledge producers acting for a collective cause?

This unbalance could be illustrated with the case example of the Intergovernmental Panel on Climate Change (IPCC), an institution responsible, since 1988, for setting parameters for the discussion of climate change issues and producing official reports based on consensual knowledge from climatologists and scientists from other related fields around the globe in order to provide informed advice for policymakers.

Although IPCC is open to all 195 countries and its committee has become more geographically diverse and inclusive of emerging economies throughout the years, most of the knowledge in the official assessment reports comes from authors and reviewers from North America and Europe, indicating an underrepresentation fragility that could jeopardize the long-term collective engagement towards solving climate change problems.

Because the knowledge produced by IPCC is nearly exclusively from laboratories and modeling centers from the Global North, debate about the skewed consensus of such reports instead of representing the broadest possible range of climate expertise has emerged. Much of the criticism about IPCC's exclusion and misrepresentation of important climate science comes from the Nongovernmental International Panel on Climate Change (NIPCC), formally established in 2010 with the motto "climate change reconsidered", which claims to offer an independent point of view to what it considers is government-sponsored and politically motivated science. Conversely, IPCC questions NIPCC's scientific credibility and accuses the organization of marketing gimmick. In addition, the trustworthiness of IPCC reports has been questioned by global warming conspiracy theorists who claim that the science behind IPCC is in reality a manipulative hoax created for ideological and financial reasons.

While the marketplace of ideas allows freedom of speech and competing opinions to coexist, this controversy can be highly counterproductive to the global warming debate because fragmented or distorted information from official reports of both organizations is circulated, influencing public discourse around the world and preventing effective strategic planning by policymakers.

Expecting IPCC and NIPCC to come to agreement on best models, methods and solutions to fight climate change, as well as to join forces as a unique global KI, is certainly unrealistic and naïve, but regardless their disputes, both organizations should consider establishing a dialog to reduce existing dissonances, as well as find alternatives to prevent and battle misinformation

that circulates outside their infrastructures, based on their own sources, by being more attentive to the management of the information they release publicly and how this information is communicated.

It would be utopic to believe that sources of power that are detrimental to the collective interests could be fully neutralized in transnational initiatives, but IPCC should strive for a more equitable representation of its members in knowledge production in order to maintain its reputation as a global KI that thinks globally.

Reference

Latour, B. (1993). *We have never been modern*. Cambridge, MA: Harvard University Press.