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## Where are STS outside Euroamerica? The postcoloniality of the anthropic dimension and the anthropologic scope

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Sociology and anthropology have experienced an inverse metamorphosis in their contents and scope, which is described by Popper in his eighth thesis on social sciences. According to Popper:


... before WWII the idea of sociology was still that of a theoretical general social science [...] and the idea of social anthropology was that of a sociology applied to primitive societies, this relation has reversed at present [...]. Anthropology (...) has become a general social science; and it seems as though sociology is increasingly turning into a branch of anthropology [...] applied to a very special form of society [...] highly industrialized in the West. (Popper 1978, our translation)

In this work, we will heuristically use this Popperian metamorphosis to evaluate the idea, according to which, if STS correspond to sociological studies of highly industrialized societies, it would be legitimate to consider a generalizing STS around the world under an anthropology-of-knowledge project. In this context, we locate Lin and Law's work, specifically their article "Where is East Asia in STS." In order to develop this essay, we will draw from these authors' exposition sequence, showing part by part the possibilities to advance toward an anthropology of knowledge (Arellano-Hernández 2014).

One of the analytical principles of Lin and Law's text comes from the different versions of Chakrabarty's postcoloniality, mainly from its scientific (Anderson 2009), epistemological (Harding 2008), geographic (Livingstone 2004) and spatial facets (Redfield 2002). And it comes from Lin and Law's idea about the place of technoscience in the world and the different forms of STS.

The authors' central argument points out that the way in which STS are exercised is related to the way they image their objects of study, their knowledge practices, performativity and their institutional arrangements. With this argument, the authors analyze STS strategies conceptualized as ideal types that comprehend various versions of the world, knowledge, cognitive competences of institutional ways, Euroamerican STS (EA-STS) and Oriental Asian-STS (OA-STS). The first three elements of the ideal types are sociological problems, and they are also anthropological issues to the extent that the notions of world, knowledge and institutions are central categories to support the anthropological practice. The two final elements also become anthropological problems when we go on to the analysis of the relations between EA-STS and STS from other world regions

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(non-EA-STs), since by extending their ideal types to other world regions we would be in a situation of human-scale knowledge production and in sociological reflexivity, to use the Bloor (1982) principle term of anthropological scope.

With the critical apparatus of the ideal types, Lin and Law explore six modes of OA-STs knowledge: diffusion, distortion, circulation, localizing, translation and softening. The authors are inclined in favor of STs committed to epistemic and ontological differences enabled to generate various versions of space. In the end, they consider desirable the diversity of balance of these six modes of STs knowledge. On our part, we will analyze these ideal types in the light of a possible project of anthropology of knowledge.

In diffusion, EA-STs perform an image of technoscientific universality, to the extent that they represent peripheral technoscientific advances. Non-EA-STs complete the reasoning cycle on the Euroamerican universality that expands to the rest of the world. Non-EA-STs scholars do not have any legitimate possibility to study technoscience and deconstruct it from their own referents, so they must try to keep up with their EA-STs colleagues. However, long ago anthropology abandoned diffusionism because of its incapacity to explain parallel cultural developments and cognitive variations. One of the explanatory limitations in the diffusion ideal type is the diffusion deficits of technoscience in the very Euroamerican region. In a project of anthropology of knowledge, these diffusion deficits might be studied from an anthropological perspective, analyzing, for example, the civic epistemes of antitechnoscientific and esoteric movements, of biological agriculture, of alternative medicines and of the denial of climatic warming, among others.

In distortion, peripheral STs evince the gap between central and peripheral technosciences by means of denouncing the exploitation of the central conceptual monopoly; while, somehow, they call to resist the domination of western universalism. Albeit, non-EA-STs move in asymmetrical tension, the denunciation of the exploitation and the resistance to domination have neither led to the construction of an alternative option for technoscience nor STs. For its part, anthropology has given an account of cosmological syncretism (Aguirre 1992), cultural anthropophagy (Da Costa Marques 2016), and other local forms of knowledge that resist colonization (Bonfil 1987). In a project of anthropology of knowledge, distortion would create the analytical environment of reciprocity in technoknowledge gaps between distinct human groups. For example, there is Goody's notion of "intellectual technology," which provides the intellect of different cultures with a common denominator, starting from differences in their material communication means (Goody 1979).

Circulation underscores a mediation of the universality of Euroamerican science, as it distinguishes the different international impacts of mainstream science on peripheral, traditional, subordinated, primitive and local countries. The asymmetry in knowledge circulation produces the asymmetric discourse of STs. Indeed, in STs a global distribution of knowledge and technique takes place, in which EA-STs set the research agendas, categories and analytical methods, whereas non-EA-STs only provide local information that verifies the Euroamerican categories and technoscientific principles, reinforcing the centrality of EA-STs. For its part, anthropology of science has given an account of the Euroamerican empowerment, attained by means of its laboratories, scientific societies and *metrologies* which have enabled it to co-opt local knowledge and turn it into immutable-movable-combinables (Latour 1987), as in the biopiracy of international pharmaceutical companies. An anthropology of technoknowledge might help to capitalize on

the technocognitive output of non-EA spheres and non-EA-STs. It would be necessary to give the local producers of knowledge and techniques the credit and intellectual rights, accelerating the circulation of spatial and temporary knowledge at a global scale.

In localization, epistemic relativism has made a deep impression, and the universality of science has become relative to a locality, which implies that the tasks of STS of other regions must appreciate local forms of validity. Lin and Law teach us that in this ideal type underlies a geographic and epistemologic irreducibility between the location of Euroamerican technoscience and other technocognitive localities. In a project of anthropology of knowledge, Euroamerican universal science would be an ethnoscience and an ontology within the spectrum of other human-experience ontologies, neither geographically nor epistemologically irreducible, as it prevents the monopolization of any other ethnoscience raised to the rank of universal.

The ideal type of translation presents irreducible worlds. Lin and Law point out there are bad translations of Euroamerican science in regions alien to it and, reciprocally, poor translations of non-EA knowledge are taken to Euroamerica. One has to bear in mind that according to Serres (1974) translation-treason is a generalized form of communication in which in each translation endeavor there is a substrate of negotiated agreement. An anthropology of knowledge would operate considering that Euroamerican technoscience and knowledge from non-EA regions might undergo translation. These are exercises of miscegenation, according to Serres (1974), which communicate the worlds and render them reducible, and where reality is negotiated by all the regions. Translation would be the antithesis of the unrestrained relativism of localization.

Finally, between the ideal type of softening and the anthropologic study of knowledge, we find great programmatic similarity. The example proposed for this ideal type by the authors is illustrative. They ask what occurs when an EA-STs research and an OA-STs researcher are faced with the encounter between traditional knowledge, such as Chinese medicine (CM), and technoscientific knowledge, such as western biomedicine? Following Lin and Law (p. 129), "The possible implication is that knowledge practices soften as they hybridize with their objects of study." From an anthropological standpoint, the instance of the encounter of CM and biomedicine shows that softening means the softening of the universalist technoscience and sociology of science versus the anti-softening of OA-STs. This is to say, softening can be understood as the dual reduction of the explanatory scope of sociology and STs, and the generalization of anthropology which Popper refers to in his eighth thesis.

The postcolonial literature conveys the loss of universality of a Euroamerican life model that it decenters. But if we apply anthropology once again, we might find important analytical elements to describe and analyze the phenomenon disclosed by decolonizing and postcolonial authors. Maybe, one of the elements that we may change is the provincialization of technoscience terms by the relativization-generalization of knowledge. This way, Euroamerica has lived the experience of a simultaneous process of relativization of its knowledge from external and internal sources.

It is external when anthropological practices give accounts of the sophisticated knowledge of ancient cultures. For example, Mexican anthropology has demonstrated the high technocognitive levels of speculative and empirical corpora of Pre-Columbian cultures, expressed in theogony, mathematics, calendars, hydraulics, astronomy, architecture, engineering, agronomy, epistemology, aesthetics, etc. Together with other

anthropologies, these studies offer elements to place Euroamerica in a comparative position that relativizes their status of single pluripotent culture. It is internal when numerous researchers have shown that North America comprises populations that demand traditional life styles, which are far from high technology, and others that organize anti-technoscientific social movements, for instance those which struggle against nuclear industries, vaccinations, genetically modified organisms, etc. This internal relativization is expressed in the very “political epistemology” (Latour 1991) of Euroamerica and may be summarized in Latour’s brutal phrase (1991), “we have never been modern.”

This turns into the reflection that technoscience and STS studies focus on the relativization-generalization of the very concept of science, of technology and of society in at least two ways. First, the meaning of Euroamerican science, raised to the rank of universal and absolute, might be relativized to a sort of regional and temporary knowledge. Many have compared the knowledge of modern and non-modern groups, Lévi-Strauss (1962), in his famous text, *The Savage Mind*, accepted that the non-moderns had the capability to produce science. However, next step, he took away that achieved mark, pointing out that modern science operates with abstractions, while the non-modern produces only empirical science. Some decades passed after anthropologist Goody (1979) explained that “the difference between them and us” is not to be found in some aprioristic or essential intellectual essence, but in the difference between the two groups’ techniques of the intellect, in particular their communication techniques. Comparing the intellectual technologies of oral language and written language, Goody softened the great divide between knowledge and techniques, which had been regarded as irreducible. In a similar manner, Descola’s (2001) studies have demonstrated that the naturalism of the modern is a simplistic episteme compared with the complex epistemes of non-modern groups. Finally, there is the case of Bloor’s (1982) attempts to recognize the predecessor of the sociology of contemporary scientific knowledge in the sociology of religious knowledge, expressed in Durkheim’s (1912) Australian totemism.

In the second place, the scope of these reflections cannot any longer be limited to the significations of the notion of Euroamerican society, sociology of modern world, western science and technoscience. Rather, they emerge from anthropological considerations. Here, we mean that the issues we are stating suggest a mutation of the sociological notions of science, technology and society into anthropological notions of knowledge, technique and the hominization process (Arellano-Hernández 2014).

Will the scholars of STS have the sensibility to go from STS sociology to the anthropology of knowledge of technique and hominization process? This is very possible if first, they reflect the results of their research in terms of “Matters of Concern,” rather than on issues of “universally true facts” (Matters of Fact, according to Latour 2004), and second, if they broaden the Euroamerican social dimension to a planetary and human scale. In regard to the first aspect, we propose that Euroamerican science is an ethnoscience indicating that it is just one of the many forms of acknowledging the world, and that current peripheral knowledge must acquire a higher credibility status. This is not to fight for the status of former-colonies’ scientificity as the universalism claimed by Euroamerican science. Rather to soften and locate knowledge in its own conditions of production of human experience in an ideal type different from localization, owing to a modification of the worlds, as observed by Lin and Law in their article. This perspective would impact the

very STS studies in Euroamerica, restating the role played by S&T in that society. For example, the alleged social standardization that takes place in the application of the concept of Euroamerica hides the processes of internal differentiation there, as pointed out by Lin and Law in Euroamerica and Oriental Asia (Lin and Law, p. 126). Likewise, in a number of countries the social answers from S&T do not correspond to the optimistic technoscience futures imagined any more, for numerous applications of S&T are generating secondary problems that turn into “Matters of Concern.”

As regards the second aspect, some steps are being taken toward more anthropological notions. They were evident in the conferences of 4S and ESOCITE in Buenos Aires in 2014, and in the 4S congress in 2018, in which African-STS works were presented. In the future, it will be up to other initiatives and wills to advance these projects such as the one presented by Lin and Law in their thought-provoking text.

### Disclosure statement

No potential conflict of interest was reported by the authors.

### Notes on contributors

**Antonio Arellano-Hernández** holds a PhD in Anthropology from the Université Laval, in Quebec, Canada. He conducted postdoctoral research at the École National Supérieure de Mines de Paris and at the École des Hautes Études en Sciences Sociales, both in Paris, France. He has a postdisciplinary background, which combines natural sciences, engineering, and humanities, with studies in agronomy, sociology, anthropology and social studies of science and technology. Currently, he holds a professorship at the Universidad Autónoma del Estado de México, and is an active member of the Academia Mexicana de Ciencias (Mexican Academy of Sciences) and the Mexican Sistema Nacional de Investigadores (National System of Researchers). His work focuses mainly on the anthropology of science and technology. He has conducted numerous ethnographies and anthropological studies in a broad range of topics such as plant biotechnology, applied physics, nanotechnology, epistemology of climate change sciences, traditional knowledges and philosophy of science, technology and innovation.

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