
Antonio Arellano Hernández y Pablo Kreimer (eds.) (2011)

Estudio Social de la Ciencia y la Tecnología desde América Latina

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It would not be an exaggeration if we state that when it comes to science and technology (S&T) in Latin America, asymmetries are everywhere. A simple exercise may show it: feel free to choose any country and observe how S&T capabilities are distributed between its regions; then go on and select two countries, compare – even at an aggregate level – their opportunities to incorporate knowledge into their socio-economic activities. Not surprisingly, important gaps are very likely to be found. This is not a minor issue: many socio-economic problems are expected to be solved by increasing the interaction of S&T with society. The book *Estudio Social de la Ciencia y la Tecnología desde América Latina* (Science and Technology Studies from Latin America) deals with this topic.

The book was edited by Antonio Arellano Hernández and Pablo Kreimer, two scholars well-known for their long research trajectory in sociological studies of S&T in Latin America. It is structured in nine chapters, including an introductory chapter - written by the editors - in which a brief history of the social studies on S&T in Latin America and

an overview of the content are offered. The list of contributors comprises Hebbe Vessuri, Leá Velho, Rosalba Casas Guerrero, Matilde Luna Ledesma, Alexis de Greiff, Oscar Javier Maldonado, Ivan da Costa Marques and Leonardo Silvio Vaccarezza: all of them were influential researchers working in Argentina, Brazil, Colombia, Mexico or Venezuela when the work was published. The participation of the authors in international networks – especially those focused on Latin America – such as ESOCITE (Sociedad Latinoamericana de Estudios Sociales de la Ciencia y la Tecnología – Latin American Society of Social Studies on Science and Technology), is an indicator of the good quality of its content.

The main objective of the book does not seem to be summarizing the Latin American school of thought on the topic. It rather aims at showing good examples of current debates on S&T in the region. It covers a variety of subjects: the internationalization process of Latin American science; the relationships between policy and epistemology; the influence of science's conceptualization on Science, Technology and Innovation

(STI) policy making; the configuration of social problems and knowledge problems; knowledge networks and STI policies; inclusive STI policy making; knowledge and its local meanings; and some insights on the scientific culture. The book is an interesting collage of themes and proposals. However, it is hard to find a red thread connecting the whole text. It was not conceived as a manual; it requires complementary readings in order to fully understand its content.

Three types of asymmetries emerge from the work: the international interactions of Latin American S&T; the S&T imbalances within countries; and finally, a subtle yet quite interesting one: the different approaches on S&T of sociological and economic studies in the region.

The international environment has always been a recurrent topic in the Latin American debate. As pointed out by Vessuri in the book, there is a constant tension among scholars to reach global academic standards: the idea of being at the frontier of knowledge creation seems to be a more persuasive driver of Latin American actors' academic performance than the combination of scientific capacities to solve local problems, which in turn could isolate them. This point is extremely relevant if we think, for example, of the university as an institution with capabilities to boost development. Technology, on the other side, remains heavily dependent on international sources: there are constant attempts to close the gap by blindly incorporating machinery and techniques from abroad into productive processes. In fact, the dependent relationship with advanced countries is

implicitly noted by Velho in his chapter: it shows how the global meaning of "science" has molded Latin American S&T policy formulation, even considering local efforts to propose autochthonous paths.

The book equally illustrates asymmetries present within Latin American countries: science and society do not move together harmoniously. Kreimer analyzes the configuration of social problems in the region, using the Chagas disease as an example. In that chapter, readers can find an interesting point of view on the interaction between scientific knowledge and problem-solving approaches. According to Kreimer, the scientific community creates different representations of knowledge, based on their motivations and interests, and plays different social roles depending on the local dynamics. De Greiff and Maldonado draw attention to the policies designed to achieve the social appropriation of knowledge. They propose that diffusion of scientific information does not necessarily entail the integration of the scientific community with the rest of society. Instead, it might be a manner to generate a new kind of exclusionary "alphabetization process". These kinds of imbalances between those who manage the generated knowledge and the rest of the social actors create power structures that reproduce asymmetries over time.

Beyond the discussion on the definition of "science" and its representations (chapters written by Arellano and Vacarezza), the book emanates a feeling of controversy between two social sciences: Sociology and Economics. This is another type of

asymmetry that is thought-provoking. From the introductory chapter onwards, Arellano and Kreimer challenge other approaches, such as innovation systems, postmodern societies, globalized scientific networks and triple helix, since they regard them as more or less mechanic translations from foreign hegemonic frameworks to the Latin American context. Nevertheless, at the same time they use theoretical frameworks developed outside the region and adapt them to the Latin American context, like those of Latour. Furthermore, innovation is often quoted across the whole text as a concept related to S&T, even when a consistent definition is not offered. The chapter written by Casas and Luna is a good attempt to fill this gap. They show how further interaction between different disciplines could broaden the analytical spectrum to study complex processes, such as science, technology and innovation processes. Nevertheless, it is not clear that their approach is accepted by the others contributors. At this point, it is important to highlight the benefits of academic diversity, which is a task that will only be achieved by venturing outside the academic comfort zone and following other disciplines' developments. This simple meta-analysis of the book reveals part of the asymmetries that could equally be found in Latin America.

All in all, the book is worth reading. It comprises much of the sociological approaches on S&T in Latin America. It is a great starting point for readers interested in recognizing the progress, the issues and the possible future of these research tracks in the region.