

## *Social Studies of Science and Technology—A Report on a Latin American Workshop\**

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THE AREA OF the social studies of science and technology in Latin America emerges as a strategic forum of interdisciplinary debate at this stage of development of the social and natural sciences. There is a tension between its two main broad components. On the one hand, there is the disciplinary approach closely linked to the disciplinary roots of the wide range of participants: sociology, economics, anthropology, history and political science. Such disciplinary roots are fundamental for ensuring the theoretical wealth of the field and appear as something that must not be lost but must be maintained and constantly fed.

On the other hand, there is the problem approach, which is forced upon us by the very dynamic of technical, scientific and social change, and which makes of science, technology and society or of the social studies of science perspective a rich source of inspiration because they foster the renewal of the research agendas thus putting new demands upon the traditional disciplines. This interest in the problem approach was reflected in many papers. It was seen as important for scientific popularisation, for education and to help practitioners in this broad work front to participate in the political and social debate of the contemporary technological society, in which we live and in which their transformations are not only a source of joy but also of suffering. Hence, the desirability of maintaining unity, at least in dialogue, among these multiple approaches. It is a good sign that there is a diversity of approaches

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and at the same time a unity of the field. The general title of this workshop, 'Social Studies of Science', is a sufficiently broad umbrella that may give a comfortable cover to most of us for some time to come.

One of the corollaries of development is a strategic tool that can only exist if it is fed by all of us: publications. If we define ourselves as a field of knowledge and debate, we must be able to produce appropriate literature. On this occasion, there was a literary explosion with over 120 written papers, which reveals an interest, but in order to consolidate these works it is necessary to publish them. Journals must be supported to enhance communication among ourselves and to expand our membership. In Quilmes, a recent initiative of the core group responsible for this meeting has been the creation of *Redes, Revista de Estudios Socioles de la Ciencia* (Networks: A Journal of Social Studies of Science) which is already in its third year and aims to reach a regional readership. Another initiative, more than twenty years old, is that of the Latin American Society of History of Science and Technology, journal, *Quipu, Revista Latinoamericana de Historia de la Ciencias y la Tecnologia*, published in Mexico City. There are also other journals in Latin America which publish articles in this broad domain and it would be interesting if they could have a larger diffusion. Newsletters are also needed so that scholars become aware about other scholars with similar interests, about various seminars, about ongoing research projects, etc. And the third element is books. In this, Latin America lags behind. There are already several graduate programmes in the region which are producing theses. Such material as well as other research results should be published and distributed in Latin America; but they should not remain locked up in universities or in restricted places within narrow national boundaries.

Among the topics discussed during the workshop one worth mentioning relates to the need to revise the understanding of the scientific community in the 1990s. The scientific community of the 1990s and the context in which it functions, is very different from that of twenty years ago and has very little to do with the one existing fifty years ago, although the rhetoric and ideology of an important segment of it continues to appeal to its old-day tenets. In this sense, it seems pertinent to re-examine the Latin American scientific community in the 1990s to underline the perspectives and

strategies for its study and explore ways in which to intervene through our research work.

Another topic that emerged from the discussions during the workshop is related to the need of defining certain limits. Any field of knowledge defines boundaries discriminating between those who are inside and those who are outside. It is not a question of labelling people but of deepening theoretical reflection, assuring a more 'professional' (in the sense of consistent, continuous) commitment so that the field may grow and advance. All work fields have amateurs approaching them. This is a positive sign because it reflects a social interest, but we must ensure the existence of a professional core group that really produces new knowledge, a new heuristic to understand science and technology in our societies. This means developing empirical research and exchanging much more information about research programmes of different groups, and working in a more concerted manner. There is a will to produce new knowledge on science and technology in Latin America. A need was also felt for research results to go beyond the restricted domain of specialists. The knowledge we produce must be diffused and this is something different from research and requires careful attention. Also linked to research is the aspect of raising society's awareness, an issue which has been reiterated in this meeting. This has to do with our social responsibility as persons interested in this subject.

The viability of our field of knowledge depends necessarily on maintaining an active and close dialogue with our most immediate interlocutors—scientists. This surely creates a tension but it is an essential and fertile one and all of us could learn from it. Of course, both laboratory or field scientists as well as social students of science in their role as 'metascientists' in analysing the former, have vested interests. Each group has a particular interest in doing its kind of work. Thus, it is necessary to be clear that those interlocutors, although they may be the privileged ones at some point are not the only ones. We must be able to approach other audiences to whom we are responsible—citizens, civil society, public opinion, etc. Today there are new social actors who were not recognised in their specificity in the previous decades.

Science and technology policies, innovation policies, technology management, and politics and management were discussed in the workshop. The different aspects could be summarised under the

general heading science and politics. Emphasis was placed on the need of greater involvement of political scientists in science and technology policies. Science and technology must become topics of interest in the fields of political science and political economy. Topics such as the state and the nation were also discussed in the workshop. What is the role of the nation-state within the new world order that escapes the control of nations and where there are nations that do not have minimal levels of autonomy? Technology development directly affects these old political problems. It was argued that contemporary science policy was not a significant topic in public debate and that its place had been taken to a large extent by innovation policy. However, it was admitted that in Latin America and linked to the continuing need to develop high level human resources, it appears necessary to maintain a space of reflection and political debate about science policy, particularly in all that has to do with increased knowledge of the social actors involved and the dynamics of the political game in which science policy is embedded.

A closely linked topic that emerged in several papers was that of the evaluation of science in relation to the state and the public. A great deal was said about *what* science and science for *what* in Latin America, problems of research funding, ethical problems posed by science, science as the *nouvelle* merchandise, dealt in several papers as the university–industry relationships, research and researchers' evaluation, peer reviewing, etc. Beyond the technical dimensions of evaluation, the social evaluation of scientific activity requires greater clarity of science and industrial policies, and of the needs of human resource training. This is a very broad field extending from social and historical considerations to concrete technical aspects of indicators of development, a problem which is being currently debated in Latin America.

An important area of work and reflection is the Latin American social history of science and technology which appears as a strategic element for reviving (also for political reasons) historic memories of Latin American science. Science practitioners have generally been amnesic with regard to the historic memory of their own scientific communities, and perceive themselves as more modern, more sophisticated, better than the pioneers who had worked before them and their scientific referents are usually today's Newtons or Lavoisiers in the international domain. Without denying

this, efforts should be made to demystify the antecedents of Latin American science and to include elements that reinforce the collective feeling of a national and regional identity. There is already a rich repertoire of good quality historical work. We must continue to support it and expand its scope. Such a view was expressed strongly in the workshop.

In connection with this there was an emphasis on the need to work on Latin American specificities. Latin America as a region poses theoretical problems of approach. Within it are wide variations of national specificities, that is, Latin America is one and multiple. This problem is an interesting one. It is not a question of delving into the bizarre cases but of exploring how local and national endeavour could be integrated or linked with the international domain. This could begin from a national point of view seeking relative degrees of autonomy in defining its own research agenda. The regional comparative perspective must be a common concern in our research agenda. In general, in all the social studies of science it is important to include comparative projects, involving aspects of the different Latin American countries as well as of countries in other regions. The comparative perspective would help us to overcome parochialisms and prejudices about our own conditions.

The participants also emphasised the need to revisit the classics of Latin American thought, the pioneers who had worked on the subject earlier. We also have our intellectual genealogy; it is not a field that was born today. We should reexamine the works of all those persons who at different times of our social and intellectual history had contributed to the subject. This is an important task, for it will enable us to see how problems were explored in the past and which of them continue to be valid and what remains of the old agenda and what belongs to a new one. The participants argued in favour of deepening theoretical reflection and methodological analysis to define analytical frameworks which may be more relevant today. We must avoid falling into the trap of the merely descriptive, that might have been useful at a certain point of time. This is inadequate at the end of the twentieth century when the field is professionalising.