

Science, Technology & Human Values

<http://sth.sagepub.com/>

Introduction: Voices from within and Outside the South—Defying STS Epistemologies, Boundaries, and Theories

Raoni Rajão, Ricardo B. Duque and Rahul De'

Science Technology Human Values 2014 39: 767 originally published online 20 July 2014

DOI: 10.1177/0162243914542161

The online version of this article can be found at:

<http://sth.sagepub.com/content/39/6/767>

Published by:



<http://www.sagepublications.com>

On behalf of:



Society for Social Studies of Science

Additional services and information for *Science, Technology & Human Values* can be found at:

Email Alerts: <http://sth.sagepub.com/cgi/alerts>

Subscriptions: <http://sth.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations: <http://sth.sagepub.com/content/39/6/767.refs.html>

>> [Version of Record](#) - Oct 5, 2014

[OnlineFirst Version of Record](#) - Jul 20, 2014

[What is This?](#)



Introduction: Voices from within and Outside the South—Defying STS Epistemologies, Boundaries, and Theories

Raoni Rajão¹, Ricardo B. Duque², and Rahul De³

The global South, that is, the region outside the Western Europe, North America, and the developed nations of Oceania and Asia, has been neglected by social scientists studying science, technology, and society (STS) issues. Since the end of the 1990s, however, a growing body of work has critically evaluated the contradictory role of Northern styles of science and technology for development, including the cultural assumptions embedded within them. Social theories have expanded to consider the ways that local practices shape knowledge and technologies in these settings. Such studies have, for instance, addressed debates ranging from the divide between laymen and scientists to the relationship between Northern and Indigenous

¹Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil

²Alabama State University, Montgomery, AL, USA

³Indian Institute of Management, Bangalore, India

Corresponding Author:

Raoni Rajão, Federal University of Minas Gerais (UFMG), Campus da Pampulha, Presidente Antônio Carlos, 6627, Belo Horizonte 30161-010, Brazil.

Email: rajao@ufmg.br

epistemologies (Martello 2008; Zulu 2006). They have also underlined the enduring asymmetries embedded in the creation of knowledge and in the use of Northern technologies in postcolonial settings (Drori et al. 2003; Duque et al. 2005; Gaillard 1992; Medina-Doménech 2009; Sagasti 2004; Solovey 2001; Vessuri 1987), while questioning the linear and deterministic assumptions linking technoscience and socioeconomic development (Chambers and Gillespi 2000; Rottenburg 2009).

Despite the substantial contributions of this growing body of literature, most accounts concerning the relationship among STS are still focused on a limited portion of the world. More than a decade after an influential special issue dedicated to STS in the global South (Anderson 2002), and following subsequent review articles on knowledge and global development (Cozzens et al. 2008) and postcolonial studies of technoscience (Anderson and Adams 2008; Harding 2011), this special issue offers a geographical and topical range of voices and experiences that at times are in accord with traditional STS epistemologies, boundaries, and theories, and that at other times defy them. Echoing Track 40 of the 2010 European Association for the Study of Science and Technology (EASST) conference and a 2011 Harvard University meeting on the state of STS, this collection also represents the emerging frontier of places, processes, objects, peoples, ideas, and applications that are expected to expand our field over the next two decades.

The opening article in this collection describes the origins of the idea that Northern science and technology must be harnessed for the development of the global South. In “Epistemic and Technological Determinism in Development Aid Discourses,” Cherlet’s argument is based upon the genealogy of two determinisms: technological and epistemic. Treating knowledge and technology as closely related concepts, Cherlet examines the path taken by the discourse of “Western knowledge for development.” During the European Enlightenment, knowledge evolved from a cyclical pattern to an accumulative one and then to a linear program based on deterministic notions of immutable progress. The colonial era of European expansion lent urgency to the transfer of Northern knowledge and techniques with the manifest aim of civilizing backward places and people. This later metamorphosed into an imperative to shape the underdeveloped regions of the world in the image of the North. This Northern “development” project was institutionalized through a series of multilateral policy initiatives, embodied in programs of aid, technology assistance, building capacities, and knowledge management. Most recently, the project has focused on information and communication technologies for development (ICT4D) initiatives. Cherlet

concludes by pointing to the problems of ignoring underlying deterministic assumptions that promote the role of technoscience in development aid.

The history of ideas traveling between North and South is also at the heart of Mark Carey's "Climate, Medicine, and Peruvian Health Resorts." In this study, Carey addresses the cultural construction and geography of medicine and science. He does this by studying one of the most important nineteenth-century sites for the cure of tuberculosis: the region of Jauja located in the Andean highlands of Peru. He reveals a rich tapestry of historical dependencies that occur when the physical forces of biology, geography, and climate cross paths with the postcolonial symbolic forces of culture, race, social class, politics, economy, and science and its communication.

While Cherlet and Carey emphasize how ideas from the North shape practices in the South, the final two articles in this special issue point to the role of local actors and ideas in receiving, digesting, and transforming Northern technoscience. In "Sustaining the Enterprise: Enacting Sustainability Standards for Tanzanian tea," Allison Loconto provides a detailed account of how sustainability standards are enacted in Tanzania. By adopting a "post Actor Network Theory (ANT)" approach, Loconto explores how different actors endorse the notion of sustainability while exposing the tensions this ontological multiplicity imply. Her analysis reveals how sustainability standards are often produced and reconfigured around the sustainability of the enterprise, a notion that pays much more attention to the continuing survival of local tea production and its community than the abstract standards set forth by global development organizations. In identifying this disjunction, her article opens new avenues for the exploration of how Northern concepts of development are imposed, reframed, and adapted in a Southern place. Moreover, within the Southern context, Loconto deciphers how the distances between the discourses and practices of sustainable development often reflect the messy negotiated processes that occur when local necessity meets well-intentioned ideals originating from abroad.

The final article of the special issue also explores how Northern ideas travel to the South and are transformed in the process. In the article "Between Purity and Hybridity: Technoscientific and Ethnic Myths of Brazil," Raoni Rajão and Rick B. Duque explore the historical origins in Brazil of technological and epistemological determinism pointed out by Cherlet and Carey. By examining how the country's foundation myths have been construed and modified since the early nineteenth century, the authors argue that Northern ideas and technologies of progress are often imposed on the South by becoming instruments in the hands of the local intellectual elites. Furthermore, by showing how a group of local social scientists

created a myth that countered the racial determinist theories of the time, the article argues that Northern technoscientific hegemony is not impervious, as some postcolonial scholars suggest. The Brazilian case demonstrates that myths may not be broken simply by exposing their contradictions, but may be replaced by more socially just ones when social scientists engage in wider political circles to diffuse their ideas.

When considered together, the articles included in this special issue fundamentally address the role of science and technology in geographically diverse settings ranging from Latin America (Carey, Rajão, and Duque) to Africa (Loconto). The articles also treat some of the most pressing science and technology issues: health care (Carey), agriculture (Loconto), development aid (Cherlet), and institutionalized racism (Rajão and Duque). These articles also represent a continuum of passive acceptance and agentive responses among local populations with regard to importing technologies and science from abroad. On one hand, Carey discusses the multiple stakeholder cocreation of health retreats in the Peruvian Andes, which historically situates these medical places and spaces at the nexus of science, economy, race, and power. Similarly, Cherlet traces the force of development discourse, as it travels from the North to the South. On the other hand, Loconto shows the renegotiation of Northern notions of sustainable development in the South while Raoni and Duque highlight how historic technological choices are not always motivated by rational efficiency nor are they separated from collective ethnic identities that fluctuate throughout a nation's history.

As a whole, this special issue invites future research to break with traditional views of North and South as two isolated entities. Moreover, the collection suggests that more attention be focused on how Southern voices, rather than passively embracing Northern values, often resist and even subvert science and technology applications originating from abroad. This strongly suggests that the global South should not just be a source of empirical material to elaborate and expand STS perspectives developed chiefly in the North. In contrast, the region's historical and contemporary technoscientific challenges and local thinkers can also represent a source of intellectual inspiration that transcends STS disciplinary boundaries and epistemologies.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

- Anderson, Warwick. 2002. "Introduction: Postcolonial Technoscience." *Social Studies of Science* 35 (5-6): 643-58.
- Anderson, Warwick, and Vincanne Adams. 2008. "Pramoedy's Chickens: Postcolonial Studies of Technoscience." In *The Handbook of Science and Technology Studies*, 3rd ed., edited by Edward J. Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, 181-204. Cambridge, MA: MIT Press.
- Chambers, David Wade, and Richard Gillespie. 2000. "Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge." *Osiris*, 221-240, 2nd Series, vol. 15, Nature and Empire: Science and the Colonial Enterprise: University of Chicago Press.
- Cozzens, Susan E., Sonia Gatchair, Kyung-Sup Kim, Gonzalo Ordonez, and Anupit Supnithadnaporn. 2008. "Knowledge and Development." In *The Handbook of Science and Technology Studies*, 3rd ed., edited by Edward J. Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, 787-812. Cambridge, MA: MIT Press.
- Drori, G. S., J. Meyer, F. O. Ramirez, and E. Schofer, eds. 2003. *Science in the Modern World Polity: Institutionalization and Globalization*. Stanford, CA: Stanford University Press.
- Duque, R. B., M. Ynalvez, R. Sooryamoorthy, P. Mbatia, D. Dzorubo, and W. Shrum. 2005. "Collaboration Paradox: Scientific Productivity, the Internet, and Problems of Research in Developing Areas." *Social Studies of Science* 35 (5): 755-85.
- Gaillard, Jacques. 1992. "The Uphill Emergence of Scientific Communities in Africa." *Journal of Asian and African Studies* 27 (1/2): 41-67.
- Harding, Sandra. 2011. *The Postcolonial Science and Technology Studies Reader*. Durham, NC: Duke University Press.
- Herrera, Amilcar. 1972. "Social Determinants of Science Policy in Latin America: Explicit Science Policy and Implicit Science Policy." *The Journal of Development Studies* 9 (1): 19-37.
- Kreimer, Pablo. 2007. "Social Studies of Science and Technology in Latin America: A Field in the Process of Consolidation." *Science, Technology & Society* 12(1): 1-9.
- Martello, Marybeth Long. 2008. "Arctic Indigenous Peoples as Representations and Representatives of Climate Change." *Social Studies of Science* 38 (3): 351-76.

- Medina-Doménech, Rosa. 2009. "Scientific Technologies of National Identity as Colonial Legacies: Extracting the Spanish Nation from the Equatorial Guinea." *Social Studies of Science* 39 (1): 81-112.
- Rottenburg, Richard. 2009. *Far-fetched Facts: A Parable of Development Aid*. Cambridge, MA: The MIT Press.
- Sagasti, Fransisco R. 2004. *Knowledge and Innovation for Development: The Sisyphus of the 21st Century*. Lima, Peru: FORO Nacional/Internacional.
- Solovey, Mark. 2001. "Project Camelot and the 1960s Epistemological Revolution: Rethinking the Politics-patronage-social Science Nexus." *Social Studies of Science* 31 (2): 171-206.
- Vessuri, Hebe M. C. 1987. "The Social Study of Science in Latin America." *Social Studies of Science* 17 (3): 519-54.
- Zulu, Itibari M. 2006. "Critical Indigenous African Education and Knowledge." *The Journal of Pan African Studies* 1 (3): 32-49.

Author Biographies

Raoni Rajão is a senior lecturer in Social Studies of Science and Technology in the Department of Production Engineering at the Federal University of Minas Gerais (UFMG), Brazil. His research focuses on the history and practices relating to the use of remote sensing technology and geographic information systems for the formulation and enforcement of deforestation control policies in the Brazilian Amazon. His broader interests include the notions of North-South divide, boundary objects, discourses, institutions, performances, and practices.

Ricardo B. Duque is an assistant professor of Sociology at Alabama State University, Montgomery, AL. His research focuses on the global diffusion and impacts of new Information and Communication Technologies (ICTs), with particularly attention to the knowledge sectors located in the developing world. His evolving theoretical work revolves around ethnic identity, knowledge inequality, technology adoption & use, and environmental sustainability.

Rahul De' is the Hewlett-Packard Chair Professor in ICT for Sustainable Economic Development at IIM Bangalore. His research interests are in ICT for development, economic impact of open source software and evaluation of e-Government systems. He has published over 50 articles in international journals, refereed conference proceedings and as chapters in books, and an MIS textbook. He has won two Outstanding Paper awards for his research and one for teaching, conferred at international conferences.