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Introduction

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The essays in this special issue examine possibilities and challenges that methodologies, language and sources coming from Africa, the Caribbean, Latin America, South Asia and the Middle East offer to histories of science and technology. They are intended to be short ‘think pieces’ that provocatively propose alternative terms, temporalities and spatialities. These essays put into question existing paradigms of association among ‘Western’ and non-Western historical actors, staid ideas about development, and the usefulness of Euro-American categories and models to examine histories of science both within and outside an ill-defined and totalizing west.

The majority of these pieces were selected from a larger group of pre-circulated draft papers presented at a workshop ‘Remapping and (Dis)Locating Global Histories of Science and Medicine’ held at Harvard University in April 2017. The essays here span a chronology of more than five centuries, from the sixteenth to the twenty-first, and depart from localized case studies. We specifically asked contributors to creatively engage with new languages and methodologies that illustrate *how* to produce new meanings for old histories.

Most of the authors in this special issue hail from the spaces of which they write and yet none reside there. This matters because the locality and, it has to be repeated, inevitable provinciality of Euro-American discussions about the so-called global profoundly shapes the types of questions and methodologies we produce – especially from *where* our analytical lens originates and to where it points. Moreover, our place of residency can – and does – determine if what we produce sparks a dialogue with our peers or sinks into a disinterested void. Our hope is that this issue sparks further dialogue about the pervasive fact that most histories of non-Euro-American spaces read by western scholars are produced outside of the places they examine.

What is new?

For a while now, a significant portion of the scholarship on ‘global’ histories of science, technology, and medicine (STM) has been devoted to unearthing the framing of historical narratives and sources, and the hidden histories behind them. Scholars interested in histories outside of Euro-America have also analyzed the close relationship between scientific and colonial projects, and how a series of historical actors engaged with the currents of scientism and its relationship with capitalism and colonialism.¹ We

already have a large number of case studies describing the movement and circulation of scientific knowledge and technology around the globe, and the pervasiveness of ‘post-colonial forms of domination’.² Indeed, the prominence of the so-called ‘global’ histories of STM in their colonial and postcolonial incarnations have broadened the scale and scope of research possibilities for the examination of these fields outside Europe and the United States.³ And yet, for all the rich insights that have come out as a result of these efforts, there is also an increasing disquietedness with their results – a sense that these types of interventions (frequently coded as part of ‘global’, ‘cultural’ or ‘ethnic’ frames of analysis) are toothless against the stubborn presence of a historical materiality that is supposedly best studied under Euro-American rubrics.⁴

STM historians studying non-Euro-American knowledge-making ‘practices’ almost universally theorize them with analytical tools developed in Euro-American centers. Indeed, standard models for researching knowledge production in regions like Latin America, the Caribbean, Africa and South Asia remain shaped by the norms of an individualistic, modern, scientific, capitalist ‘West’. These models are highly dependent on the parameters of an imagined Western modernity, its geographies, ideas about ethnic boundaries and ‘bifurcationist ontologies’ of nature.⁵ They depend on theoretical frameworks that talk about, for instance, colonial relationships, hierarchies of development and scientific knowledge, or north-south binaries that model ‘global’ commercial and informational exchange.

Labeled as cultural or political tropes, dismissed as under-theorized practices in need of the coherence provided by Euro-American analytical tools, non-Euro-American definitions of how the world can be sensed appear only as ‘soft’ reactions to the ‘hardness’ of ‘real’ material explanations – those related to economic, demographic, biomedical and scientific analyses of human bodies and their environments. This process submits the *techne*, intellectual projects and, more generally the people at the center of the studies presented in this volume to a sort of ‘charitable anthropologization’.⁶ Crucial to such practice, besides the lack of recognition of historical sources outside the ‘objective’ purview of historical empiricism, is also a lack of understanding of the different sensorial registers, and ontological and temporal spaces in which non-Euro-American intellectual projects flourish.⁷ The essays that follow propose alternative methodologies, terminology and sources for examining non-Euro-American spaces that might expand how to explore histories of STM not only outside Euro-America but also within it. In order to do so, the volume focuses on methodological and source diversification (including the expansion of known chronologies and geographies of exchange) and emphasizes the importance of terminology and issues of linguistic and cultural translation.

Crucially, the essays here avoid the creation of stereotyped caricatures of otherness and ‘alien’ worlds. Instead of falling into the trap of creating essentializing chauvinistic models of national and regional histories of science, the papers in this issue dwell in the complexities of multi-sided knowledge making without specific centers of computation – or, importantly, of analysis of their histories. Indeed, we think it is time, for historians of science, to expand the possibilities of post-colonialism and notions of symmetry and question the automatic privileging of the very terms of analysis and analytical frameworks, that the field uses to identify, organize and codify histories of knowledge production and circulation.⁸ Ahmed Ragab, for example, investigates what

he calls the ‘emotional underwriting of colonial science’ by examining the role played by disgust both in the creation of colonial narratives of progress and scientific authority, and in shaping postcolonial narratives of colonial and precolonial history. In a similar vein, Amit Prasad uses the history of the writing of Hindu science to examine the colonial and postcolonial implications of Eurocentric historicism that have fueled diffusion theories, and to argue for a new type of post-structuralist interventions in HSMT that go beyond claims about historical/archival elisions and distortions.

As the pieces in this collection make clear, if global histories of science, technology and medicine want to go beyond the mere inclusion of other regions and people in the narratives of the discipline, they need to more deeply engage and historicize pressing issues of ontology, materiality and agency. Projit Mukharji, for instance, questions how to explain Vishwakarm, lord of machines who allows instruments to work, in the daily life of computer users who are devotees of the god. He thus proposes the term occult materialities as a measure to deal with the ‘materiality’ of the technological objects that circulate around us. Working along similar lines, Pablo Gómez’s and Tiago Saraiva’s articles emphasize the importance of a reflective, and historicized, incorporation of anthropological methodologies – in particular the so-called ontological turn – in STM historical scholarship. In his essay, Gómez considers the work that objects that anthropologists and historians have thought of as ‘ritual tools’, or elements of ‘radical alterities’, perform in the conceptualization of early modern Caribbean worlds and their things, and proposes possibilities for the commensurable examination of world-producing objects such as early modern Caribbean stones together with scientific technologies. For his part, Saraiva uses the methodology of Brazilian *Antropofagia* to re-examine the history of orange cultivation in Brazil and the United States.

While clearly departing from a commitment to empiricism, the essays here make use – in addition to traditional sources for STM materials – of material, manuscript and oral sources that have been ignored or underutilized for the writing of STM histories. Jorge Cañizares-Esguerra, for example challenges our idea of ‘openness’ and puts into question our reliance on the circulation of print culture to validate scientific authority. As he explains in describing Spain’s practice of using codes and secrecy when dealing with mining innovation – and unlike what occurred in Northern Europe – print culture never became the primary mode for the production and circulation of knowledge about the natural world. Instead most of this information circulated in manuscript form creating a world of ‘vertical knowledge’, one that had very material historical consequences. Similarly, but using a different register, Kathryn de Luna uses historical linguistics to recover histories of science and technology in historical spaces without a traditional written archive, such as precolonial central Africa, in order to go beyond the limits of conventional STM methods and archives.

At least nominally historians of science have been ostensibly interested in writing histories of science from perspectives that continually problematize the relationship between space, place, knowledge and identity, among others. Yet, these tenets have been, for the most, comfortably secluded within the neutering terminology that scholars use to describe processes of knowledge making by global others. In this regard, the essays in this issue speak directly to the political function of historiographical choices that have left affective and perceptual experiences, such as those suggested by the authors’ discussions of ‘disgust’ (Ahmed) or ‘sadness’ (Saraiva) outside of the scope of

historians of STM that have frequently labeled these histories as ‘non-science’ or ‘inept science’.

Language matters profoundly, and not only in the ways that concepts are produced. This is why scholars participating in this volume take seriously the challenges of both linguistic and social translation. While all authors address this concern Gómez, Podgorny, de Luna, Soto Laveaga and Cañizares Esguerra speak to it directly. Concepts that historians of science use when writing about global histories of science (for instance, terms attempting to describe relationalities in colonial practices, indigenous epistemologies, or divides between nature and culture, concepts and objects, people and things, and nature and humans) can also obscure what ‘really is at stake’ for so-called non-EuroAmerican actors in particular historical circumstances.⁹ Several authors propose new terminology to express the use of new methods. Gabriela Soto Laveaga, for instance, introduces *LARGO dislocare* to emphasize the need to expand both the parameters of time(when) and place (where) when examining those outside our typical knowledge-producing institutions. She does this by tracing how an Indian scientist, a political refugee in Mexico, skirted known forms of knowledge circulation to transmit ideas about hybrid seeds decades *before* these seeds became emblematic of Cold War projects. Additionally, Cañizares Esguerra proposes that we both *conquer down and up* to shatter existing causal relations based on imperial lines of influence in early modern Latin America. Podgorny’s essay is also informed by these questions and connects the apparently same mortal disease for mount animals, *surra*, from Uganda to the Americas. By examining pony pajamas designed to protect valuable ponies from a deadly disease Podgorny makes larger claims about how to think about local cures for global diseases.

Also worth noting is the use of individual biographies as a methodological approach – most notably Soto Laveaga, Cañizares-Esguerra, Gómez, Podgorny and Saraiva – to the writing of global histories. None of the authors, however, deploy biography solely as a means for seeking ‘missing persons’ in historical narratives, nor are these fillers of historiographical gaps. Instead these authors place biographies of individuals who cross political, racial and class lines on a global stage and thus illustrate what quantitative methods or historical sociology have long missed.

The essays here do not attempt to identify ‘plural’ versions of the practice of writing ‘Science’. Instead, they provide a new language to speak of histories of intellectual and material engagement with the natural world that go beyond a recognition of otherness and alterity.¹⁰ In other words, this collection accomplishes *not an empirical expansion* but a dismantling (perhaps better to say, *dislocare*) of common historiographic techniques. Our hope is that such dismantling can inform and enrich other inclusive ‘global’ projects organized around issues of ‘diversity’, ‘outreach’ or ‘anthropological delectation’ – projects that, in fact, reproduce, rather than challenge, structures of power.

Notes

1. Among others, Anderson, ‘From Subjugated Knowledge;’ Cañizares-Esguerra, *How to Write*; Chakrabarty, *Provincializing Europe*; Escobar, *Territories of Difference*, 373–388; De la Cadena, *Earth Beings*; or Seth, ‘Colonial History.’
2. Among many others, Raj, *Relocating*.

3. Among others, the essays in the 2010 Isis Focus section on ‘Global Histories of Science,’ including, Sivasundaram, ‘Sciences and the Global.’ See also, de la Cadena et al., ‘Anthropology and STS.’
4. Anderson, ‘Asia as Method;’ Farquhar, *Knowing Practice*; Hartog, *Regimes of Historicity*; Dabashi, *Can Non-Europeans Think?*
5. Among many others, Viveiros de Castro, ‘Cosmological;’ Descola, *Beyond Nature and Culture*; or Bonelli, ‘Ontological Disorders.’
6. Chakrabarty, ‘The Muddle of Modernity.’
7. Fan, ‘Science in Cultural Borderlands;’ Feierman, *Peasant Intellectuals*; Palmié, *Wizards*; Soto Laveaga, *Jungle Laboratories*; Safier, ‘Global Knowledge;’ or Gómez, *The Experiential Caribbean*.
8. Law and Lin, ‘Provincializing STS.’
9. De la Cadena et al., ‘Anthropology and STS.’
10. Verran and Christie, ‘Doing Difference Together.’

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