

***Response to Anderson and Khandekar***  
**Alexandra Hofmänner, University of Basel**

In their reviews, Anderson and Khandekar pronounce a heavy verdict on my paper “Science Studies Elsewhere: The Experimental Life and the Other Within”. They renounce its novelty and intellectual merit. They accuse the paper of disregarding what they consider to be the relevant body of literature, namely postcolonial science studies (PSS, Anderson) or postcolonial studies of technoscience (PST, Khandekar). In their view, this scholarly tradition has already provided the intellectual material that is merely repeated in the paper. The only analytical value they ascribe to the paper is its reproduction of a ‘postcolonial staple’ (Anderson, 2014, 51), its treading of ‘territory familiar to many Science Studies scholars’ (Khandekar, 2014, 9). On the basis of these considerations, they read the paper as an unwarranted critique of scholarship in the fields of PSS and PST.

In this response, I will try to show that Anderson and Khandekar fail to substantiate their judgement. Furthermore, I will argue that their comments exemplify some of the very obstacles the proposed Programme in Science Studies Elsewhere seeks to address. For this purpose, I will discuss the following issues: Anderson and Khandekar’s use of the word ‘Elsewhere’ (1. Research Design); their denial of the paper’s novelty and analytical potential (2. Trouillot’s Notion of Elsewhere: The Geography of Management and the Geography of Imagination); and their insistence on a particular scholarly tradition in Science Studies as conceptual and interpretive reference for the analysis (3. Postcolonial Technoscience).

## **1. Research Design**

### *The Analytical Frame*

The paper is framed around Michel-Rolph Trouillot’s notion of Elsewhere. Its objectives are: ‘to apply [Trouillot’s] notion of Elsewhere to a paradigmatic case study from the field of Science Studies, 2) to test and demonstrate the analytical potential of the notion of Elsewhere, and 3) to consider the implications of this analysis for the study of modern science and for the field of Science Studies’ (Hofmänner 2014, 7). In their comments, Anderson and Khandekar refer to the term ‘elsewhere’. However, they do not apply the connotation proposed by Trouillot. Instead, they ascribe to this word a different—though unspecified—meaning. This semantic difference presents a major obstacle to a coherent, focused discussion on the empirical, analytical and intellectual merit of the paper.

In Trouillot’s sense, Elsewhere does not simply signify the Other of a *geographical* region called *Europe*. Indeed, he explicitly sets out to challenge the simple designation of Europe or the West as a geographical place and quotes the Martinican writer Edouard Glissant to emphasise that “The West is not in the West. It is a *project, not a place*” (1992, 2 cited in Trouillot 2002, 222; my emphasis). Trouillot describes Elsewhere as ‘a space of and for the Other that can be, and often is, imaginary’ (2002, 222). This space is a constitutive condition for effective claims on modernity. He proposes ‘two different sets of lenses, two related mappings, two intertwined yet distinct geographies’ through

which to explore this space: a geography of imagination and a geography of management (Trouillot 2002, 222).

On the contrary, Anderson and Khandekar's use of the word 'elsewhere' evokes geopolitical associations of difference between science and technology in Europe and elsewhere. For example, Anderson's reading of the proposed Programme in Science Studies Elsewhere as an attack on 'those of us elsewhere' (2014, 51) only makes sense in a geopolitical mapping.<sup>1</sup> This is not to reject Anderson and Khandekar's use of the word, but to point out that the contours of their geopolitical map of science and technology are not the focus of the paper. *Science Studies Elsewhere* seeks to probe a different kind of mapping of modern science and technology: 'What happens if we move "the gaze" of Science Studies to Trouillot's Elsewhere? What insights can be gained from this shift in the study of modern science in general, and for the field of Science Studies in particular?' (Hofmänner 2014, 7). This map also plots terms such as 'Europe' or 'Northern Atlantic', but they designate a *space* rather than a *geopolitical place*. This difference in analytical frame will be discussed in the more detail in the next section (2. Trouillot's notion of Elsewhere: the geography of management and the geography of imagination).

The paper on *Science Studies Elsewhere* examines Boyle and Hobbes' empirical programmes through Trouillot's analytical framework of the geographies of imagination and management. Neither Anderson nor Khandekar negate the analytical value of the paper by pointing out shortcomings in the analysis. On the contrary, Anderson states that 'Hofmänner actually presents a serviceable postcolonial critique of canonical aspects of early-modern European science' and absorbs it as 'a crucial *part* of efforts to provincialize Europe and its modernity' (Anderson 2014, 51; his emphasis). Anderson and Khandekar negate the analytical value of the paper *by silently shifting the terms of the debate outside the proposed analytical frame*. In other words, by ascribing a different meaning to the word 'Elsewhere', Anderson and Khandekar abandon the first objective of the paper ('to apply the notion of Elsewhere to a paradigmatic case study from the field of Science Studies'). However, this step does not put them in a position to appraise the paper's second objective ('to test and demonstrate the analytical potential of the notion of Elsewhere') and its third objective ('to consider the implications of this analysis for the study of modern science and for the field of Science Studies'). From a methodological point of view, this shift discredits any potential analytical value of the paper from the outset and, strictly speaking, might have to be considered a foregone conclusion.

To be sure, the paper does not insist on a new or generic definition of 'Elsewhere'. It proposes an experimental case study approach to explore the analytical potential of Trouillot's specific conception of this word. A debate on various interpretations of 'Elsewhere' may be of value in a different context, but would require the terms used in the discussion to be declared and put on the table for discussion.

---

<sup>1</sup> Another example is Khandekar's introduction of the term 'nowhere' (Khandekar 2014, 9), a general (non-referenced) expression that does not feature in Trouillot's framework of the geographies of imagination and management.

To my knowledge, Trouillot's notion of Elsewhere has not yet been applied to a paradigmatic case study from the field of Science Studies. Anderson and Khandekar's (implicit and unsubstantiated) rejection of the proposed analytical frame would not appear to suffice to strike off the paper's originality. Neither would it warrant the accusation that this author '[asserts her] own novelty and sophistication, and others' (often non-European others') naiveté' (Anderson 2014, 52), 'casts postcolonial scholarship as a straw man with which to claim unwarranted novelty' (Anderson, 2014, 51) or 'greatly [overstates] the 'novelty of [her] analysis' (Khandekar 2014, 9).

### *Case Study Approach*

What exactly is Hofmänner's justification for allowing *Leviathan and the Air Pump* to stand in for all of Science Studies? The operational logic seems to be: Science Studies = Strong Programme = *Leviathan and the Air Pump*. Absent such simplification, Hofmänner couldn't have made her case (Khandekar 2014, 1).

The paper does not pursue an operational logic, but rather simply follows a case study design. Shapin and Schaffer's book *Leviathan and the Air-Pump* was chosen as a case study to consider specific research questions, to test specific hypotheses and to pursue specific objectives. The case study approach allows us to discuss the implications and significance of the (case study) analysis against a broader conceptual or theoretical landscape. Because the case study of *Leviathan and the Air-Pump* may be interpreted as an example of empirical research in the tradition of the Strong Programme, which in turn forms one of the intellectual strands within the field of Science Studies, the Programme in Science Studies Elsewhere was composed in connection to Bloor's four tenets for the Strong Programme.

Khandekar views the essay as 'a critique *against* the Strong Programme' (2014, 9; his emphasis). However, the paper's objective is not to criticise the Strong Programme, but to explore, by means of a paradigmatic case study, the extent to which Trouillot's concept of Elsewhere is able to yield additional insights for the study of science and technology. Bloor's four tenets for a Strong Programme were not proposed as a theoretical system, but as guiding cornerstones for the empirical analysis of scientific knowledge. These tenets and Bloor's Strong Programme have been extensively discussed in academic circles. The paper proposes to use Bloor's Strong Programme as referent for formulating a Programme in Science Studies Elsewhere, based on the analysis of a case study. Of course, it would be interesting to discuss the proposed Programme against 'the many critiques of the Strong Programme formulated in the past several decades' (Khandekar 2014, 8), but this is beyond the scope of the case study design and would either need to be carried out as a next step or by way of a different methodological approach. The benefit of a case study approach may of course be challenged and debated. But then this would need to be pronounced as a critique of the method, and not as a critique of a strategy of 'simplification' to 'make a case'.

Why does Shapin and Schaffer's book provide an excellent foil to probe the analytical strength of Trouillot's notion of Elsewhere? Shapin and Schaffer's book was not simply

chosen as a case study because of its fame or number of references. It has left a formative imprint on various subsequent strands of Science Studies scholarship, not only as an example of the Strong Programme, but also because it revealed a connection between solutions to the problem of knowledge and social order by focusing on one of the key practices that afforded the natural sciences authority in claiming truth: experiment. Shapin and Schaffer conclude that ‘the practices involved in the generation and justification of proper knowledge were part of the settlement and protection of a *certain kind of social order*’ (Shapin and Schaffer 2011 [1985], 343; my emphasis). This particular kind of social order is of interest to Trouillot (1991), who claims that ‘the West’s vision of order implied from its inception two complementary spaces, the Here and the Elsewhere, which premised one another and were conceived as inseparable’ (32).

## **2. Trouillot’s Notion of Elsewhere: The Geography of Management and the Geography of Imagination**

While [Hofmänner] chooses to invoke Michel-Rolph Trouillot, she might with equal plausibility have used postcolonial science studies to frame her argument (Anderson 2014, 51).

However, as Anderson (2014) also notes in his discussion, the novelty of Hofmänner’s analysis—which would most definitely benefit from closer conversation with already existing critiques of Science Studies—is greatly overstated (Khandekar 2014, 9).

Anderson and Khandekar declare that the paper provides no new insights for the study of modern science and technology. This means that they refute the key argument of the paper, ‘[...] that Trouillot’s notion of Elsewhere can call attention to characteristics of science that have remained systematically eclipsed and that it discloses important sites for future Science Studies’ (Hofmänner 2014, 6). Indeed, they assert that the fields of PST and PSS have long been treading these ‘territories’.

Trouillot’s notion of Elsewhere is not simply an invitation to search for the Other in place and space, or to ‘interrogate’ (Anderson 2014, 51) or ‘problematize’ (Khandekar 2014, 8) the founding binaries through which modernity is constituted. Trouillot proposes a particular analytical lens with which to examine the constitution of modernity, the geography of management and the geography of imagination: ‘the geography of imagination went hand in hand with a geography of management, the elaboration and implementation of procedures and institutions of control both at home and abroad’ (Trouillot 2002, 222). This coupling carries especial empirical and analytical value. For the case of *Leviathan and the Air-Pump*, it exposed a material link between Boyle’s imaginary ‘inferior creatures’, Hobbes’ imaginary ‘savages’ and ‘the elaboration and implementation of procedures and institutions of control both at home and abroad’: Boyle’s involvement with the English East India Company, the Council for Foreign Plantations, the New England Company, the Hudson’s Bay Company and Hobbes’ involvement with the Virginia Company through his professional services as secretary to Lord Cavendish. Boyle and Hobbes did not simply imagine Others to complete their philosophical programmes. They employed a particular (scientific!) strategy: they fitted

their philosophical programmes to serve the broader environment of control and management that aimed not only to construct a (superior) European identity, but also to derive material profit.

Trouillot's notion of Elsewhere discloses mechanisms in the political economy of knowledge and science, but this analysis does not run along the lines of geopolitical or national boundaries. It follows the contours of the geography of management and the geography of imagination. This is a complicating, abstract step that distinguishes Trouillot's Elsewhere from other notions of the Other. In Trouillot's geographies, geopolitical boundaries play a secondary role. In other words, his cartography of Elsewhere foreshadows the geopolitical analytical lens: Had Shapin and Schaffer been Brazilian and Australian rather than American and British Science Studies scholars writing the book at a university in Nigeria, these circumstances would not have changed the book's reproduction of alterities that have shaped modern science. Put differently, the strategies and mechanisms of replication do not fall under any exclusive proprietary rights within the geopolitical boundaries of Euro-America. Their distribution follows the contours of the geographies of management and imagination.

By subsuming the analysis of the paper under the banner of PSS/PST, Anderson and Khandekar claim that analytical concepts or theories from these scholarly transitions would be able to deliver the same new insights. However, they do not substantiate this claim beyond the unspecific reference to authors Donna Haraway, Sandra Harding and Marilyn Strathern and a (nearly 20-year-old) summary by Sarah Franklin. In no way is this to question the important contributions of these authors to the field of Science Studies; however, with regard to Anderson and Khandekar's rejection of the paper's novelty, they fail to specify exactly which PSS/PST concepts or theories they would apply to *Leviathan and the Air-Pump* in order to achieve this conceptual shift and deliver the same results.

No doubt there is a need to experiment further with and examine the empirical ways in which Trouillot's analytical frame can be applied to the study of science and technology. The empirical and conceptual limits and strengths of this term would need to be debated. Likewise, the Programme in Science Studies Elsewhere may be questioned and tested empirically and challenged conceptually. But to my knowledge, Trouillot's notion of Elsewhere has not so far been applied to analysing science and technology, neither has a Programme in Science Studies Elsewhere been running under the banner of PSS/PST. Unless Anderson and Khandekar can succeed in demonstrating the contrary, their assertion on the timeworn intellectual repetition of the paper remains unsubstantiated.

### **3. Postcolonial Technoscience**

I think the major problem is that Hofmänner tries to reduce postcolonial critique to a facile version of traveling theory (Anderson 2014, 51).

[...] Warwick Anderson (2014) already notes Hofmänner's misreading of postcolonial studies of technoscience as merely theories of travel from the West to the Rest, dismissing the significant work done in this tradition

that already severely problematizes the founding binaries (modern/traditional, rational/irrational, public/private etc.) through which modernity is constituted (Khandekar 2014, 8).

A few passages from the chapter on PST (co-authored by Anderson and Adams) in the most recent *Handbook of Science and Technology Studies* (2008) are consulted in reply to these statements by Anderson and Khandekar. These passages illustrate how prominently the idea of travelling science and technology figures for the standard portrayal of PSS/PST.

Anderson and Adams lament the fact that the ‘proliferation of conceptual notions of hybrid and plural modernities during the 1990s’ (Appadurai, 1991; Strathern 1999; Sahlins, 1999), that ‘might offer some guidance for scholars in science and technology studies’ are ‘largely ignored’ (Anderson and Adams 2008, 183). They specify an ‘apparently simple question [that] gives rise to the postcolonial critique that informs the anthropology of modernity’: ‘What happens when something moves into a new environment’ (Anderson and Adams 2008, 183)? They ‘recognize complex sites of technoscience outside Europe and North America’, and seek ways to ‘avoid default to the old stories of the expansion of Europe and instead manage to recognize the multiple vectors of technoscience’ (Anderson and Adams 2008, 189)? Based on these considerations, Anderson and Adams put forward a vision for PST (quoting Anderson’s concluding words:

We need multi-sited histories of science which study the bounding of sites of knowledge production, the creation of value within such boundaries, the relations with other local social circumstances, and the traffic of objects and careers between these sites, and in and out of them. Such histories would help us to comprehend situatedness and mobility of scientists, and to recognize the unstable economy of “scientific” transaction. If we are especially fortunate, these histories will creatively complicate conventional distinctions between center and periphery, modern and traditional, dominant and subordinate, civilized and primitive, global and local (Anderson and Adams, 2008, 192).

Anderson and Adams describe the core challenge of PST by quoting research questions by eminent Science Studies scholars: ‘Why is it, inquired Bruno Latour (1988, 227), that Newtonian laws of physics work as well in Gabon as in England?’; ‘As Steven Shapin (1998, 6-7) observes, “we need to understand not only how knowledge is made in specific places but also how transactions occur between places.”; and “If facts depend so much on ... local features, how do they work elsewhere” (1992, 23)? (Anderson and Adams 2008, 182).

These quotes turn back Anderson and Khandekar’s accusation by redirecting their attention to the central position afforded to the travel of science and technology in the prevailing portrayal of PSS/PST. Moreover, they exemplify the literal manner in which the travel of science and technology is translated into research questions in the work of

renowned Science Studies scholars. Rather than ‘misreading’ or ‘trying to reduce’ PSS/PST, *Science Studies Elsewhere* merely refers to these circumstances.

But more importantly, Anderson and Khandekar’s insistence on the importance of scholarship in the tradition of PSS/PST for the paper on *Science Studies Elsewhere* raises other interesting questions.

First, Anderson and Khandekar subsume the analytical strength of the paper under the banner of PSS/PST and claim that it holds no intellectual novelty. Why? By asserting the relevance of PSS/PST as the (only) rightful and legitimate framework for the analysis of the assumption of modernity within the field of Science Studies, they confer this particular tradition of Science Studies scholarship with unique territorial hegemony. The key argument of the paper, however, is that the field of Science Studies needs to address its collective blind spot by questioning modernity as one of its core assumptions. It appears that Anderson and Khandekar read this argument as implicitly challenging the exclusive role of PSS/PST within the field of Science Studies to engage critically with the assumptions of modernity. I presume that it is the challenge to this epistemic territory that explains the commentators’ vehement rejection of the paper.

Second, Khandekar criticises that this author ‘remains mute on what exactly constitutes “Science Studies” as an object of inquiry’ (Khandekar 2014, 8). This is not correct; the paper explicitly sets out to challenge a paradoxical condition of Science Studies’ standard genealogy (as pointed out by Elzinga (1997) and Guggenheim and Nowotny (2003) respectively). This genealogy constructs the field’s identity as a cumulative sequence of intellectual achievements and individual biographies. In other words, for the purposes of the paper, Science Studies was viewed as an historical discourse. On the other hand, Khandekar remains silent on the question of what exactly distinguishes the PSS/PST approach. For example, in what way does it differ from studies in the tradition of the anthropology of science and technology, or cultural studies of science and technology?

Third, and most importantly, Anderson and Khandekar overlook that they follow contradictory lines of reasoning. While they ascribe value to the paper’s analysis in general terms, they refuse to consider its specific significance for PSS/PST: ‘To the extent that the author calls attention to the constitutive role of alterities in the production of scientific knowledge, and the reproduction of such alterities in many Euro-American studies of science, Hofmänner’s essay is a valuable reminder’ (Khandekar 2014, 8). Is PSS/PST not part of the field of Science Studies? If it is, then the conclusion also applies to this academic tradition. On what basis would Khandekar argue that PSS/PST provides exceptional studies that do not reproduce these alterities? What special qualities would assign PSS/PST this exclusive position within Science Studies? The (geopolitical) site of empirical research beyond ‘Euro-American studies of science’? The nationality of the researcher? The particular methods or analytical concepts of the researcher’s home discipline?

The assumption of PSS/PST’s exclusive position explains why Anderson writes: ‘Just how such dispersed postcolonial inquiry means that “science studies” is left in the waiting room of history, as Hofmänner asserts, quite frankly escapes me. How looking at

what constitutes science and modernity outside Europe necessarily implies European priority simply puzzles me' (Anderson 2014, 51). It also explains Khandekar's statement that 'the claim that postcolonial analysis of technoscience leaves the foundational schema of modernity intact is baffling' (Khandekar, 2014:9). After all, the paper explained these claims in detail with reference to the work of Dipesh Chakrabarty, Shalini Randeria and Michel-Rolph Trouillot.

Repeating the argument here is not likely to serve to overcome Anderson's puzzlement and Khandekar's bafflement. The problem lies in their contradictory line of reasoning with regard to the scope of validity of the findings of the study. For some reason, they appear to believe that PSS/PST is able to defeat or at least side-step the scholarly replication of the assumptions that underlie the grand narrative of modernity.

**Contact details: [alexandra.hofmaenner@unibas.ch](mailto:alexandra.hofmaenner@unibas.ch)**

## References

- Anderson, Warwick. "Taking Science Studies Off the Boyle." *Social Epistemology Review and Reply Collective*, 3, no. 6 (2014): 51-52.
- Anderson, Warwick and Vincanne Adams. "Pramoedya's Chickens: Postcolonial Studies of Technoscience. In *The Handbook of Science and Technology Studies*. 3<sup>rd</sup> edition. Edited by Edward J. Hackett et al. 181-204. Cambridge MA: MIT Press, 2008.
- Bloor David. *Knowledge and Social Imagery*. 2nd edition. Chicago: University of Chicago Press, 1991 [1976].
- Chakrabarty Dipesh. "Postcoloniality and the Artifice of History: Who Speaks for 'Indian' Pasts?" *Representations*, 37 (1992): 1-26.
- Elzinga, Aant. "Some Notes from the Past." *EASST Review* 14, no. 2 (1997): <http://easst.net/wp-content/uploads/2012/04/Some-Notes-From-EASSTs-Past.pdf> (accessed 17 August 2014).
- Guggenheim, Michael and Helga Nowotny. "Joy in Repetition Makes the Future Disappear: A Critical Assessment of the Present State of STS." In *Social Studies of Science and Technology: Looking Back, Ahead*, edited by Bernward Joerges and Helga Nowotny, 229-258. Dordrecht: Kluwer Academic Publishers, 2003.
- Hackett, Edward J, Olga Amsterdamska, Michael Lynch and Judy Wajcman, eds. *The Handbook of Science and Technology Studies*. Cambridge, MA and London: MIT Press, 2008.
- Hofmänner, Alexandra. "Science Studies Elsewhere: The Experimental Life and the Other Within." *Social Epistemology Review and Reply Collective* 3, no. 3 (2014): 1-26.
- Khandekar, Aalok. "Lost in Nowhere." *Social Epistemology Review and Reply Collective*, Vol. 3, no. 7 (2014): 8-9.
- Shapin, Steven and Simon Schaffer. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*. Princeton: Princeton University Press, 2011 [1985].
- Trouillot, Michel-Rolph. "Anthropology and the Savage Slot: The Poetics and Politics of Otherness." In *Recapturing Anthropology: Working in the Present*, edited by Richard G. Fox, 17-44. Santa Fe, NM: School of American Research Press, 1991.

Trouillot, Michel-Rolph. “The Otherwise Modern: Caribbean Lessons from the Savage Slot.” In *Critically Modern? Alternatives, Alterities, Anthropologies*, edited by Bruce M. Knauff, 220-237. Bloomington: Indiana University Press, 2002.