

## **A Few Critical Remarks on the Circulation and Appropriation Approach in Comparative Research**

**Roundtable Contribution to ‘Comparison and Beyond: The Methodological and Theoretical Challenges of a Comparative European History of Technology’. Second Plenary Conference Tensions of Europe, Lappeenranta, Finland, May 25-28, 2006**

*Karin Bijsterveld*

As Andreas Fickers rightly states in his introduction to our roundtable, historians of technology consider comparative historical research crucial to our study of the role of technology in the construction of Europe. This reflects, among other things, the field’s belief in the significance of technology transfer and the deeply transnational character of our modern societies.

Yet, as Thomas J. Misa regrets, historians of technology ‘have mostly used comparative studies to demonstrate how social, cultural, and political forces have altered the course of technology’. Their comparative argument typically is ‘that differences in some set of shaping factors resulted in differences in some given technology’. In contrast, historians of technology should go beyond such contextualist claims, and should answer the classical question ‘how does technology shape society’ again.<sup>1</sup> Addressing the circulation patterns of people, knowledge, services and artifacts, as they materialized through international study tours, congresses, professional societies and journals, would be most suited for doing so, Misa claims, since that helps to account for similarities in technological systems and designs accross Europe. By subsequently studying the processes of the appropriation of these circulated expertise and artifacts in local contexts, the road to showing differences in technological cultures between European countries, regions and cities would be reopened again, yet now more balanced than before.

I have employed the circulation-appropriation approach in a study into the search for an internationally standardized aircraft noise index—which expresses the relationship between a particular aircraft noise impact and its effects on the population—in several European countries. I did so by analyzing which proposals for a particular golden standard, as well as the units and instruments of measurement involved, circulated in Europe and how (inter)national committees of experts departed from one of the first proposals that came to be implemented, a British

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<sup>1</sup> Thomas J. Misa, *Countercurrents in Comparative Studies*, Contribution for Dialog Workshop, ‘How can we make creative use of comparative studies?’, Tensions of Europe Conference, Budapest, 18-20 March 2004, pp. 1 & 2.

standard.<sup>2</sup> On the basis of my study, I fully agree with Misa that analyzing the circulation and appropriation of technology across Europe helps us to understand how a particular technology, or knowledge about this technology, travels from one country to another—thus making things similar—and often clarifies why countries or regions depart from particular technological designs or not. Also highly attractive in the circulation-appropriation approach is its congruence with the pragmatist notion that the claim of engineers or politicians that ‘we should apply technology X from country Y in country Z’ is an intervention, a performative act that creates a ‘context’ rather than that it responds to a given context.<sup>3</sup>

The circulation-and-appropriation approach also has a few dangers, though. In practice, we usually do not follow the circulation of artifacts over time and place, but people, and the committees, conferences and journals in which they discuss their insights and plans. Working in this manner has two consequences of which we may not always be aware. First, we often follow engineers, scientists and politicians in highly formal settings without having knowledge of forms of circulation in less formal, and less accessible circles and situations. This is a problem in almost all historical research, yet if we pretend to analyze the circulation of artifacts, we may also have to think about different kinds of source to study: not congresses, professional societies and committees, but the measuring equipment, obsolete or still working, at a particular airport. If it is not there anymore, let’s face what kind of information we might miss. Second, following experts means that we only get information about the contexts *they* consider explicitly relevant to their choices, while overlooking contexts that are self-evident or a taboo to them, and hidden to us, yet significant to understand why something circulated from one country, region or city to another. This methodological problem has also been part and parcel of actor-network theory, that does not aim to explain technological development, but to describe the rise and decline of networks, but may not even be able to identify all relevant networks because of its methodology of following the actors.<sup>4</sup>

This brings me to a second problem. Knowing how something came from A to B does not automatically provide insights in why this was the case, providing that one *does* aim to answer this question while being aware of the continuous reconstruction of contexts. As Wolfgang König

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<sup>2</sup> Bijsterveld, K (2005). Sounds from the Sky: Pragmatic Objectivity and the Search for the Golden Aircraft Noise Index, Invited paper for the workshop *How Science Makes Sense*, Amsterdam, November 17.

<sup>3</sup> Wilde, Rein de (1992). *Discipline en legende. De identiteit van de sociologie in Duitsland en de Verenigde Staten, 1870-1930*. Amsterdam: Van Gennep.

<sup>4</sup> Bijsterveld, K. (1996). *Geen kwestie van leeftijd. Verzorgingsstaat, wetenschap en discussies rond ouderen in Nederland, 1945-1982*. Amsterdam: Van Gennep.

has claimed, showing differences between national technological developments in comparative research often makes one aware of alternative routes and prevents one from pointing out to determining factors that may not be so determining after all, and can thus lead to new, more nuanced generalizations. When finding similarities, however, which level of abstraction of the similarities—such as highly abstract phase models (invention-diffusion-innovation)—still lead one to an interesting insight?<sup>5</sup> And to add another inconvenience: what similarities in the character of the countries studied provide the right explanation or context for the similarities? Where to start searching?

My aircraft noise index case, for instance, needed a classification of standards based on standardization theory, and a differentiation between coordinative and regulatory standards, to understand the crux of the similarities between the indices of different countries. So only after a comparison of a different nature than a comparison between countries or regions could I find an explanation of the similarities. Furthermore, I needed a hypothesis from public problems theory, about why some definitions of public problems easily spread from country to country and others do not, to know where to start my cross-country comparison of relevant contexts.

In sum, the circulation-appropriation-approach has the virtue of getting one focused on the two-way relationship between technology and society, can be easily combined with pragmatist approaches to history, and has the elegance of telling you clearly what to do. Yet it leaves important decisions to be made in each case study. Next to methodology, we clearly need theory.

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<sup>5</sup> Wolfgang König (2003), Der Kulturvergleich in der Technikgeschichte, *Archiv für Kulturgeschichte*, 85, 2, 413-436.