Werkstattgespräche: Histories of Planning

13 May, 10:30-12:00 Ursula Klein: Knowledge in the Context of Planning: Examples from Prussia

You are about to hear the fourth interview held as part of the working conversation series „Histories of Planning“ presented by Department III Artefact, Action and Knowledge at the Max Planck Institute for the History of Science, Berlin. The interviewee is Ursula Klein, researcher at the Max-Planck-Institute for the History of Science, Dep. I, Berlin. Ursula Klein is author of Materials in Eighteenth-Century Science: A Historical Ontology (with Wolfgang Lefèvre Cambridge: The MIT Press (2007) and currently working on a monograph on „... „ (forthcoming).

Questions are asked by Dagmar Schäfer and Nina Lerman.

Dagmar Schäfer: Today is May 14th and we have Ursula Klein with us, who is a renowned expert [of] chemistry history and also a renowned expert [of] the intersections of science and technology, or what she calls herself ‘technoscience’, or has called at one point. Ursula was here yesterday [and] introducing to us her new work on Prussian state mining and porcelain. And I start with a very straightforward question:

In what way is Prussian administration organization peculiar and what has it to do with science?

Ursula Klein: If we focus on Europe as a whole and not on global history it would be peculiar with respect to England, which has long been, I think, the focus for historians of science and technology. It is not peculiar with respect to continental Europe as a whole, because there were similar mercantilist policies existing in France, for example, in Austria, in Hungary, in Sweden and so on. My argument in my new book, which is based on a lot of new archival work, is that Prussian industrialization was promoted at its beginning by the state and that the industrialization developed in interaction with the development of the exact natural sciences and what was called technological sciences in the nineteenth century. The actors who were supporting technological improvement were strongly convinced that knowledge is a major factor in technological improvements and they also coined the notion of useful knowledge and in particular of useful sciences. And ‘useful sciences’ was a historical forerunner of what was later called technological sciences. Examples of useful sciences are the so-called mining science, science of forestry, science of architecture and so on. And, at the very beginning of industrialization, in the context of attempts to improve technology, these actors also tried to put together knowledge that constituted the useful sciences. There was knowledge taken from the natural sciences but also from technical experts and some advanced craftsmen, so it was a sort of heterogeneous, mixed or hybrid knowledge bringing science and technology together. And they also attempted to institutionalize that in the form of mining academies or academies of architecture and so on.

Dagmar Schäfer: Broadly speaking, one could say that in the history of science administration doesn’t hold a very venerated place. Everything that has to do with administration seems to indicate routine actions rather than something that you would probably relate to the much more favoured narrative in the history of science on innovation, creativeness, and change. Can you describe a little bit your point of view on these quite black-and-white perspectives?

Ursula Klein: There has long been an argument in the history of science promoted even by historians of science who studied administrations and policy in connection with the sciences, that administration and any kind of technical work connected with administrations was actually a hindrance of science, and that some of the scientists did this in order to make a living but did not connect it with their scientific work and regarded it actually as a hindrance. This is, for example, Charles C. Gillispie's famous 'Science and Polity in France at the end of the Old Regime (1980)', you find very often in his descriptions that he actually shows that there are some connections but in his more general conclusions he makes the argument to the contrary. That it has been of interest because science is a pure science. This ideology of pure science as something opposed to technical work and attempts at technological improvements is a result of the later nineteenth century, of the mid-nineteenth century. It did not exist earlier. (…) Now when you speak of administration, state administration and with respect of the so-called mercantilist states of continental Europe, a fact that is not contested is that the state organized scientific institutions. What is actually contested is, that the administrative goals and economic goals and more or less all the other goals that cannot be directly identified as scientific ones, that there were mutual interactions between these goals and the scientific goals. That has been contested. And I think that I can show that there is actually a strong interaction in many parts, not in all parts. So I like to speak of a partial overlap, which means that there are also errors in the administration, of course, and in technology and in science, which are different, so which do not have connections, but there is a strong field of overlap.

Dagmar Schäfer: What would you say is the impact of administration structures in your case on the science that comes out? Or are these two things that you cannot connect?

Ursula Klein: I would not connect the structure of administration in the proper sense. What I connect is the social figure, the particular figure of an official, who was also a *savant*, and that figure is quite ubiquitous in the period of early industrialization, when technicians or engineers or any kind of technically advanced experts were not trained in long-existing institutions. So it is not the case that the bureaucratic administrative structure as a whole would somehow contribute to promote the natural and technological sciences, but a certain group of officials who had an alliance with *Naturforscher*, with *savants* and technicians. (…) In the case of this first man, Bergling, he died before he was 30, because, and this is another concern – why, in that particular context, why private, personal secrecy was not tolerated. It was very dangerous work, they were involved with poisonous materials and sudden deaths were something that occurred quite quickly, and then the knowledge was gone. So that was a real concern in Meissen as well, we have documents, which express that concern explicitly.

Nina Lerman: I have one other question in relation to those various rules of knowing people. And whether we have actual porcelain objects, such that one could study whether there are changes, Bergling (?-1797) dies, Friedrich Bergling comes in. If Friedrich Bergling really has secrets, than are there changes in the artifacts. Can we track them over time so that we could see, you know, is the actual making knowledge pretty stable at the underling level and the officials are making experiments at this point or are they really changing the recipes such that the paint looks different. Do we have that factual thesis?

Ursula Klein: That is an excellent point. That would be an additional big, big research project to do. Something that I couldn't do, because it is really the kind of research project which people in material studies institutes do, who do that, because you need more than physical instruments to study exactly the materials and related issues. That is a question that I must leave open and that is not really important for me. The question of success or what I am interested in, the development of strategies and what they changed, in some cases we can

really say: ok this was achieved, for example, through the establishment of lecture courses or the establishment of a school or the access of non-noble people to the highest position of officials or so. But in the technical area, did they really improve the quality of porcelain by means of quantitative chemical analysis? That would be an interesting question for me. Was there really improvement at the end of the process?

Dagmar Schäfer: On that note on future research we thank you very much for a really great interview.