

## ***Interactive comment on “Transnational mobility and the spaces of knowledge production: a comparison of different academic fields” by H. Jöns***

### **Anonymous Referee #2**

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This is a forceful effort to push forward the debate on mobility in scientific practice. The paper is highly ambitious in conceptual terms and it bases on an impressive empirical basis, which is displayed in a number of well arranged figures and tables. The paper addresses a relevant question within the scope of Social Geography (the relationship between knowledge, mobility and space), it elaborates a novel three dimensional matrix on the varying spatialities of scientific practices, or more specifically: it elaborates further an already existing matrix of two dimensions (see Jöns 2003) by complementing a third dimension. The paper does acknowledge the relevant literature and the methodological approach is all in all well documented. However two non-trivial problems remain to be addressed:

Firstly, the aim of the paper is depicted in a rather general way: “I explore the complex relationships between knowledge, mobility and space” (p. 81). It would be desirable to be more precise, which conceptual gaps exist in the discourse and which specific contribution the paper wants to make in order to fill these gaps. It is difficult for the reader to estimate, whether or not it is appropriate to address this issue by “looking at the ways in which geographical patterns, motivation for and outcomes of transnational mobility vary among different academic fields” (p. 81). This decision, though not implausible, appears a bit arbitrary.

Secondly, the paper oscillates between an exploration of the field and hypothesis-testing. The former impression results from the relatively open research question and the conceptual contribution at the end of the paper. The latter impression stems from the quantitative approach, which applies predefined categories (for instance the rather traditional distinction between natural sciences and arts and humanities). As it is, the paper is neither purely explorative nor does it test hypotheses in an appropriate way, rather, both intentions seem to be contradictive.

For a hypothesis testing approach, the paper does not give sufficient account on the hypotheses, which have guided the quantitative survey. Why did the author investigate the issues presented in sections 3, 4 and 5? What were the expected results (in relation to hypotheses that circulate in the scientific discourse, or in relation to own hypotheses developed elsewhere) and in how far do the empirical findings deviate from these expectations? How can these deviations be interpreted? Why are the interrogated categories adequate indicators? And what exactly do they indicate?

For a primarily explorative paper, however, it remains unclear, how it will be possible to raise relevant information with a quantitative empirical approach and a standardised questionnaire that allows to extend one’s conceptual ideas about “scientific cultures” and “scientific practice”. Furthermore, would it not be more appropriate for an explorative approach to inductively create a typology of different practices (such as: strongly vs. weakly contextualised practices; collaborative work practices vs. individ-

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ualistic scholarship) that crosses the familiar categories, instead of collecting data on predefined categories? For instance it might be possible, that work practices in some humanities and some natural sciences are surprisingly alike, e.g. anthropologists, geographers and some biologists are extremely field dependent. Other (sub-)disciplines, which at the first glance appear to be closely related, might differ considerably concerning their practices, e.g. theoretical vs. experimental physics.

These two general problems lead to a range of related more specific problems.

In the present form the empirical sections and the conceptual consequences remain more or less detached from one another. The conceptual ideas are not “conclusions Ę drawn from Ę empirical findings” (p. 95). The first (degree of materiality) and third dimension (degree of abstraction) of the matrix of spatialities of scientific practice already existed before (p. 103/lines 4f.), so, quite obviously, they do not depend on the empirical survey presented above. The second dimension, which is the main new contribution of this paper, however, is merely completely deduced from the literature. Only incidentally (on p. 98 there is a reference to figures 3 and 5) it is also illustrated with the empirical data presented above.

The empirical sections, rather than selectively exploiting the data in favour of a range of research questions, summarize the data in an own logic. As a result, it is hard to keep all the facts presented in mind, as one does not know, which of them will be relevant for what purposes and what they do indicate. Consequently, the interpretations provided in these sections are not always convincing, a high diversity of topics is addressed, often factors from outside the survey explain characteristics in the data (e.g. the influence of the collapse of the former Soviet Union on scientific mobility from Eastern Europe). Some facts are commented others are only depicted. In short words, the facts are presented comprehensively as if they were interesting in themselves, however, they remain too little integrated into the conceptual endeavour of the paper.

I recommend, the author should exploit her quantitative data more systematically and

more selectively by testing the validity of her model. The three dimensions are already convincingly deduced from the literature (which is a conceptual merit in itself), however, the causalities suggested by her model (e.g. on page 102: “the more immaterial and standardized the research practice, the lower is the spatial embeddedness”) still need to be tested empirically. This presupposes an operationalisation; to develop a number of verifiable hypotheses, to link the conceptual cornerstones (e.g.: degree of materiality; degree of standardisation; degree of abstraction; degree of spatial embeddedness) of the matrix with applicable indicators, to correlate these indicators with one another in order to test the assumed causalities.

Furthermore, the developed matrix is very instructive for future research. However, compared to the former version (elaborated in Jöns 2003), the three dimensional matrix is not only more complex, but unfortunately also considerably more complicated. The more important it becomes, to keep the argument as simple as possible. One problem is that the three dimensions seem to be not independent from one another. For instance, standardisation and materiality on the one hand represent the first and second dimension of spatial embeddedness of knowledge. On the other hand they also partly contribute to the grade of abstraction, which is the third dimension: “researchers perform consequential mediations from matter to form involving a trade-off between multiplicity, materiality and locality and the gain of standardisation, immateriality and universality” (p. 100, own emphasis). This would mean, that an increase in the grade of abstraction is closely associated with a decrease of materiality (and an increase of standardisation). I propose to pronounce stronger what characteristics are distinctive for each of the elaborated dimensions. Further, to enhance readability, I recommend to use less synonyms (e.g. on page 97 im/materiality is used synonymous with more or less symbolic content).

Finally, “context dependency” is here understood as the dependency of a scientific practice on the German national context. However, in my estimation, the idea of context in scientific practice is much richer and also more specific than that (the author

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refers to the German language and to culture in general). For instance the material and infrastructural context of scientific practices may vary in several respects: every researcher needs a computer with an internet connection and a library, only few need a laboratory with expensive devices. Some scientific practices need the stable context of a laboratory, while others work directly in the field and so on (see Knorr Cetina 1981 and 1999).

Minor remarks:

The term of “field/field-specific” (pp. 79, 81, 92, 102, 103) does not become clear.

The issue of face-to-face vs. online interaction raised at the beginning of the conclusions has not been elaborated in the paper. It does not summarize the argument.

You hint at “important conclusions for science policy” (p. 103), which can be drawn from your results, however, you do not give any examples.

The methodological section (pp. 81f.) does not discuss any weaknesses of your approach. This could eventually be supplemented.

Sentences like: “The geographies of academic mobility Ę had been structured by political, socio-economic, cultural and intellectual relations Ę” (pp. 101f.; also p. 79/lines 9-12; p. 88/lines 17-20) are so general, that they are always true. In my estimation they are dispensable.

Technical corrections:

trans-national instead of transnational

References:

Jöns H. (2003) Grenzüberschreitende Mobilität und Kooperation in den Wissenschaften. Deutschlandaufenthalte US-amerikanischer Humboldt-Preisträger aus einer erweiterten Akteursnetzwerkperspektive. Dissertation, University of Heidelberg.

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