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Integrating knowledge: Challenges raised by the “Inventory of Synthesis”



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ABSTRACT

The paper is devoted to the crucial issue of inter- and trans-disciplinary research: the synthesis. Its aim is to contribute to the enhancement of the scientific quality of integrated knowledge. The synthesis is the common result that has to be achieved through processes of integration. In order to be successful and lead to scientifically valid results, such processes of integration have to be convincing in terms of methods and in terms of epistemology. However, in inter- and trans-disciplinary projects, the fact that methods of integration have to be chosen and described in a way that allows a judgement of the validity and scope of findings is often neglected. Furthermore, there is a marked lack of concern in many such projects about the epistemic challenges that should be met in order to integrate knowledge originating from different fields. We introduce the “Inventory of Synthesis”, an instrument developed to facilitate the epistemic analysis and description of the integrated results of inter- or trans-disciplinary research and to identify where methods of integration are needed. This instrument thus helps to link the connected issues of the epistemic structure of the synthesis and of the choice of integration methods. Referring to the results of an interview study, we discuss the special challenge trans-disciplinary research has to cope with in dealing with non-academic knowledge. We endorse a double perspective, one from the point of view of inquiring into processes of integration and one from the point of view of designing and implementing them. Because we observe how the scholarly discourse on inter- and trans-disciplinary research and the demands accompanying the practical work in such projects risk drifting apart, we call for an approach to integration taking into account research findings on such processes and for research into integration informed by practical needs.

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1. Introduction

Inter- and trans-disciplinary research is both an object of research and a field of practice in research – and one can go without the other. Those investigating inter- and trans-disciplinarity belong to the rather broad community of science studies, while those actually doing inter- and trans-disciplinary research belong to numerous and diverse scientific

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communities. Hence, knowledge about inter- and trans-disciplinary processes and how to design them best is scattered and evolves – at least in part – in independent communities; for instance, someone having an inter-disciplinary project dealing with issues of biodiversity in an African region does not, as a rule, consult journals or books devoted to higher education, modern languages and literature, preventive medicine or nicotine and tobacco research and thus misses the contributions on inter- and trans-disciplinary research therein; and he/she in turn will not contribute to the discourse led in these communities. Additionally, there are two kinds of interests to be distinguished: the main objective of those who investigate inter- and trans-disciplinary processes is to advance theoretical and empirical knowledge on these processes (they are curiosity driven), and those who carry out inter- and trans-disciplinary research first of all want to improve their practice (they are problem driven).

We are perfectly aware of the fact that people often belong to both groups. Nonetheless our paper draws on this distinction at least to some extent. This is firstly due to the fact that we ourselves belong to both groups and secondly, because of our experience in training and counselling leaders of inter- and trans-disciplinary projects. Time and time again, our experience shows how the scholarly discourse on inter- and trans-disciplinary research and the demands accompanying the practical work in inter- and trans-disciplinary projects risk drifting apart, leading to a practice that disregards research achievements and to research that neglects practical needs. We want to contribute to their reconciliation. Hence, the perspective we have endorsed in this paper is the following: we look at the inter- and trans-disciplinary research practice from the point of view of research on inter- and trans-disciplinarity and call for a scientifically sound approach. At the same time we look at the research on inter- and trans-disciplinarity from the point of view of the inter- and trans-disciplinary research practice and ask what issues should be tackled in future research to improve the practice.

This article is devoted to integration and thus to the issue generally considered to be the core of inter- and trans-disciplinary research by both abovementioned groups. More specifically, it addresses two main and closely linked issues on which we think future debate should focus: the epistemic issue of knowledge and the issue of its methodical validity. Initially, we will explain why we consider inter- and trans-disciplinary research to be a highly demanding scientific endeavour. In the subsequent section we will introduce the “Inventory of Synthesis”, an instrument developed in order to analyse and describe the integrated results of inter- or trans-disciplinary research. This will lead us to a discussion on the special challenge to be met in trans-disciplinary research when it comes to integrate non-academic knowledge. This discussion will be based on the results of an interview study. Finally, we will explain the methodical and methodological shortcomings we identify in research on and practice of inter- and trans-disciplinary inquiry. To conclude, we will summarise our reasoning by emphasising why we think to manage inter- and trans-disciplinary projects is a genuinely creative and scientific work.

2. The demanding character of inter- and trans-disciplinary research

Inter-disciplinarity and trans-disciplinarity are both terms expressing quality requirements such research has to meet.² Accordingly, a paper on the subject of integration in inter- and trans-disciplinary research should start by explaining which kind of research is denominated by ‘inter-disciplinary’ and by ‘trans-disciplinary’ and what is considered to be the special quality required of such work. Hence, in the following subsections we will explain how we define these terms and explain which quality criteria with regard to inter- and trans-disciplinary research we will proceed from.

2.1. Defining inter- and trans-disciplinarity

We conceive inter-disciplinarity as the collaboration of scholars of at least two different academic disciplines aiming at common results. To expand on how this definition relates to the broad (and growing) body of literature on this subject would be beyond the scope of this paper (for a more detailed discussion with respect to the older literature see e.g. Defila & Di Giulio, 1998). Nevertheless, we want to stress two points we consider to be important with regard to our definition: First, our definition entails that inter-disciplinary research is performed by a team and not by a single person (the same definition is endorsed by a wide range of scholars, see e.g. Andersen & Wagenknecht, 2013; Holbrook, 2013 or the overview and taxonomy by Klein, 2010). We consider it appropriate to distinguish a team-approach and a one-person-approach because the two differ considerably with regard to what is actually done and the challenges to cope with. In a team-approach an inter-disciplinary result is the common result of a group achieved by dealing with different persons having different worldviews and relating these worldviews.³ In a one-person-approach an inter-disciplinary result is the result of a single person achieved by dealing with a body of knowledge and/or methods originating from different disciplines and relating them to his/her worldview. Second, our definition does not imply that the persons involved in an inter-disciplinary project do necessarily belong to different scientific realms in terms of natural sciences, social sciences, humanities, etc. Therefore inter-disciplinary research can take place within the humanities or the social sciences.

² The normative character does not extend to posit inter- and trans-disciplinary research as being a somehow ‘better’ way of doing scientific work, i.e. it does not imply research should always be inter- or trans-disciplinary.

³ By worldviews we do not mean the political opinion of a person but his/her specific way of looking at the world whilst being informed by all those elements making up a scientific profile (see e.g., Di Giulio, 2010), such as choice and description of phenomena, value system, terminology or body of theories and methods, as it developed through his/her scientific biography.

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