Prompting transdisciplinary research: Promising futures for using the performance metaphor in research

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Transdisciplinary research is increasingly recognised as important for investigating and addressing 'wicked' problems such as climate change, food insecurity and poverty, but is far from commonplace. There are structural impediments to transdisciplinarity such as university structures, publication requirements and funding preferences that perpetuate disciplinary differences and researchers often lack transdisciplinary experience and expertise. In this paper we present a heuristic that aims to encourage researchers to think about their current research as performance and then imagine different performances, with the view to encouraging reflection and creativity about the transdisciplinary potential and dilemmas. The heuristic is inspired by the metaphor of performance that Erving Goffman uses to understand everyday, face-to-face interactions. The heuristic includes scaffolding for imagining research as performance through a transdisciplinary lens, a suggested process for using the tool, and examples based on the every day research projects. The paper describes the application of the heuristic in a graduate masterclass, reflecting on whether it does indeed 'prompt' transdisciplinary research. Limitations and lessons learned for further refinement of the heuristic are also included. The authors conclude that the heuristic has a range of uses including for self-reflection, and as a practical learning tool that can also be used at the start of integrative research projects.

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1. Introduction

Transdisciplinary research is an increasingly mature approach that a broadening range of journals and disciplines consider relevant. Scholars in this field are investigating the characteristics of transdisciplinarity (Wickson, Carew, & Russell, 2006; Mobjörk, 2010; Lang et al., 2012), developing 'tools' for evaluating transdisciplinary research (Pohl, 2005; Carew & Wickson, 2010) and reflecting on experiences of transdisciplinary researchers (Ramadier, 2004; Pohl, 2005). At the same time, they are advocating the importance of transdisciplinary research to investigate and address 'wicked' problems such as climate change, food security and poverty (Lawrence & Després, 2004; Hadorn, Bradley, Pohl, Rist, & Wiesmann, 2006). These

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problems are complex, have multiple problem definitions, lack clear solutions and are trans-sectoral, requiring collaborative approaches by a wide range of public and private actors (Rittel & Webber, 1973; Lawrence & Després, 2004). However, in spite of all this activity, embedding transdisciplinary research firmly into the academic world continues to be challenging.

We can find in the literature on transdisciplinary research a wide range of definitions. Pohl (2005) brings together various elements that are often considered as key to transdisciplinarity by defining it as research that "takes into account the complexity of an issue (. . .), addresses both science's and society's diverse perceptions of an issue (. . .), sets aside the idealised context of science in order to produce practically relevant knowledge (. . .), and deals with the issues and possible improvements of the status quo that are involved in balancing the diverse interests and inputs of individual stakeholders and disciplines" (pp. 1160–1161). In practice, transdisciplinary research involves a wider range of stakeholders than just academics (including community interest groups, industry and government), requires 'close and continuing collaboration' during every phase of the research and, it is often 'action-oriented' (Lawrence & Després, 2004). These traits are in contrast to multidisciplinary or interdisciplinary research, in which each discipline works in a 'self-contained manner' (Lawrence & Després, 2004).

Why is transdisciplinary research still so challenging? Because, according to both Klein (2004) and Horlick-Jones and Sime (2004), there are conceptual, as well as institutional and social barriers. These barriers exist in multidisciplinary and interdisciplinary research, but are more salient in transdisciplinary research, where 'problem-oriented issues of social, technical and/or policy relevance are involved' (Horlick-Jones & Sime, 2004, p. 522). Thus, impediments to transdisciplinarity have gained critical attention, such as the way universities are compartmentalised (Lawrence & Després, 2004; Petts, Owens, & Bulkeley, 2008), divergent language and culture of different disciplines (Petts et al., 2008), publication culture (Kueffer, Hadorn, Bammer, Van Kerkhoff, & Pohl, 2007), funding preferences (Petts et al., 2008) and reward mechanisms (Evely et al., 2010). However these impediments do not leave researchers and research leaders powerless to change the situation.

The *Futures* and other journals demonstrate that there is a growing body of literature about a diverse range of tools and ways of 'cultivating transdisciplinary capacity' (Klein, 2004, 2008). This includes, but is by no means limited to, adaptable heuristics to help researchers visualise and discuss what it means to do transdisciplinary research (Carew & Wickson, 2010; Huutoniemi & Tapio, 2014), evaluation frameworks that provide researchers with a guide to critically reflect on their attempts to enhance transdisciplinarity in their work (Buizer et al., 2014), 'interdisciplinary encounters' to provide researchers with exposure to different disciplinary perspectives and an opportunity to create research networks across disciplines (Bridle, Vrieling, Cardillo, & Araya, 2014), problem based learning via case studies and exercises that simulate the co-production of knowledge (Stauffacher, Walter, Lang, Wiek, & Scholz, 2006; Balsiger, 2014), professional development programs that support researchers to improve their 'transdisciplinary work' (de Nooy-van Tol, 2003) and mentoring and masterclasses for researchers on how to explicitly reflect on their research practice (Lyall & Meagher, 2012).

However, while a diverse range of approaches exists they often comprise of quite general teaching tools (mentoring, group work, case studies, problem-based learning) and emphasise the development of specific skills needed for transdisciplinary research (communication skills, systems thinking). The authors argue that creativity also plays an important role in enabling researchers to think outside their disciplinary box. Our experience suggested that researchers find it difficult to imagine what it might mean for them and their research environment to explore transdisciplinary opportunities, especially opportunities for collaboration with people other than their peers in a community of researchers. To this end, our objective is to further the development of heuristics, using a more creative and unconventional approach. The heuristic presented might standalone or complement other tools of observation and learning aiming to understand the world from the viewpoints of different observers. It can be executed in a relatively short amount of time as compared with learning by doing in a real-project situation; provides users of the heuristic with a common language for talking about their research; encourages the researchers to step out of normal routines; and, aims to deliver an embodied experience (cf. Hukkinen & Huutoniemi, 2014).

Finding inspiration in theories of performance (Section 2), in particular the seminal work of Erving Goffman about dramaturgical analysis of social interaction (Goffman, 1959; Manning, 1992), we developed a heuristic that forms the basis of thinking about research as performance (Section 3). To develop the heuristic further the authors 'transformed' the researchers descriptions of their practice into concise portraits using the language of performance, to include as examples of applying the heuristic. These descriptions were derived from interviews with 10 researchers from different disciplinary backgrounds, all of them working on environmental problems that cannot easily be solved from within the boundaries of a single discipline and most of them relatively experienced (as in mid- to late career). The transcripts of the interviews provided us with rich accounts of the researchers' practice, mostly in relation to one of their recent research projects. We then tested the performance metaphor in a research- and design oriented masterclass of thirty-seven students with different disciplinary backgrounds, and asked the students to reflect on their experiences in doing so (Section 4). This exercise enabled us to reflect on the utility of the heuristic and whether it helped researchers think differently about their roles and interactions with others in the research process. We discuss the potential uses of the scaffolding in the final section, reflecting on the usefulness of theatrical concepts for learning about transdisciplinarity and on ways to build these practices more structurally into research processes.

2. Performativity and the performance imagery

Scholars from different analytical traditions have addressed performance and performativity in very different, and sometimes contradictory ways (Gregson & Rose, 2000; Thrift, 2003). It is beyond the scope of this paper to go into the details