Chapter 11

Being a ‘Good Researcher’ in Transdisciplinary Research: Choreographies of Identity Work Beyond Community

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11.1 Introduction—The Multiplication of Belongings in Research

Since the institutionalisation of modern science, disciplinary communities and sub-communities have been the basic structural, epistemic, and cultural units of academic knowledge production and education (Kuhn 1962; Knorr Cetina 1999; Stichweh 2008). Disciplinary communities have been described as providing shared understandings of what should count as relevant problems, suitable methodological and theoretical approaches, and of the kinds of findings that should be accomplished (ibid.). This includes understandings of how to be a proper scientist in terms of practices and skills as well as virtues and motivations (Ylijoki 2000; Daston and Galison 2007; Shapin 2008). Shared understandings of what makes a ‘good’ researcher¹ (comprising norms of thorough professional knowledge and skills as well as moral attitudes) have been conceptualised as ‘role identities’, ‘social identities’, or as ‘subject positions’ in different disciplines (for an overview see Cerulo 1997). In this chapter, I understand identity as a shared conception of how researchers should position themselves within different value repertoires (Fochler et al. 2016), which differs between disciplines (Becher 1989; Ylijoki 2000). These disciplinary identities are passed on through socialisation, and they are internalised,

¹In this chapter, I will not address how being a ‘good’ researcher is related to research ethics and (avoiding) misconduct—issues that are currently debated in terms of research integrity and responsibility—because these issues hardly come up in the empirical material at hand. The researchers in my sample were first and foremost concerned with which methods, skills, and motivations were valued in different research fields.

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adapted and negotiated, or resisted by individual researchers through ‘identity work’ (Swidler 1986; Butler 1990).

Yet, different contemporary developments are challenging the notion of a rather exclusive and lasting belonging of individual researchers to the one disciplinary community into which they had been socialised, to which they subsequently contribute, and which they reproduce (Knorr Cetina 1999). On the level of research governance, a range of initiatives have been installed to facilitate researchers’ mobility between disciplinary communities and between scientific and practical fields (such as networking initiatives, collaborative research programmes, and possibilities to combine different fields of study in the European higher education sector; see Gibbons et al. 1994; Kerr and Lorenz-Meyer 2009). Thus, the belonging of individual researchers is becoming more fluid and diverse (Galison 1996; Henkel 2005; Darbellay 2015; Hackett et al. 2017). This means that it is no longer the case that a researcher is necessarily educated, socialised, and employed in one disciplinary community that is also home to her collaborators, her reviewers, her publication media, and audiences. Rather, researchers maintain different and changing kinds of relations to different communities and collectives. Under these circumstances, researchers cannot draw on a singular, coherent imagination of how to be a good researcher. In turn, the very meaning of community is challenged when there is a perpetual exchange of community members.

Felt and Fochler (2012) argue that broader policy changes do not directly influence research practices but affect them indirectly via alterations of collective imaginations about what makes a good researcher. They argue that this results in

new kinds of images of what doing science and being a scientist means, both in terms of the aims of scientists’ epistemic pursuits, as well as in terms of the skills and virtues expected from the scientist as a person ... *Whether they embrace or reject these new images, researchers have to position themselves with respect to them in their orientation work and when developing their own professional identity.* (Felt and Fochler 2012, p. 152, emphasis added)

For this reason, the loosening and multiplying of researchers’ belonging can be expected to severely challenge both research communities and research identities. Thus, there is a need for new ways of conceptualising the dynamic and fluid relations between collectivity and individuality (see also Brew 2007; Kerr and Lorenz-Meyer 2009).

In this chapter,² I ask how researchers with diverse and dynamic relations to different collectives develop a self-understanding of what it means to be a good researcher, i.e. what the normative ideals are that they should strive for. In doing so, I empirically analyse how researchers who engage in transdisciplinary research

²The research this chapter is based on was conducted at the Department of Science and Technology Studies (University of Vienna). This work was supported by the Austrian Federal Ministry for Science and Research under the funding scheme proVISION (funding of the project ‘Transdisciplinarity as Culture and Practice’) and by the Dr. Maria Schaumayer scholarship for returners of the Vienna University of Economics and Business (amongst others, funding for publication projects).

occasionally or regularly narrate, adopt, translate, resist, and combine the different imaginations of being a good researcher that they encounter. I focus on transdisciplinary research because it attempts to cross different kinds of boundaries (Klein 1996; Hirsch Hadorn et al. 2008)—including intra-scientific boundary transgressions between disciplines and boundary transgressions between science and other societal areas. How and which boundaries are addressed, transgressed, challenged, or maintained in researchers’ identity work is an empirical question.

When I refer to transdisciplinarity in this paper, I mean research that aims to solve a societal problem by bringing together actors from different areas who are considered to contribute expertise, knowledge, or experiences that are relevant for solving that problem (compare Hirsch Hadorn et al. 2008; Stichweh 1994).³ Here, it is important to note that transdisciplinarity, understood in this sense, aims not only to integrate diverse actors but also to abandon these collaborations again when the concrete problem that brought them together has been solved or re-defined (Gibbons et al. 1994). Actors are meant to then return to their respective domains or assemble in different constellations around other problems. This (by definition) permanently changing character of belonging is one aspect that distinguishes transdisciplinarity from emerging interdisciplinary fields which aim to build lasting communities—at least in theory (Molyneux-Hodgson and Meyer 2009). Thus, looking at transdisciplinary research will trigger new insights about ‘identity work’ beyond coherent and stable communities.

11.2 State of the Field—Identity beyond Scientific Disciplines

Literature that addresses inter- and transdisciplinary identities mostly highlights the inherent dilemmas, tensions, and paradoxes faced by researchers who move between disciplines and domains. This hints at the fact that identities between and beyond communities are not unproblematic and that they at least reflect the ‘essential tensions’ (Kuhn 1977; Hackett 2005) of research explicitly (Kerr and Lorenz-Meyer 2009; Andersen 2013; Felt et al. 2013; Woelert and Millar 2013; Darbellay 2015; Turner et al. 2015; Schikowitz 2017).

Empirical literature that analyses the identities of researchers who engage in inter- or transdisciplinary research practice focuses on how researchers position themselves in relation to and as demarcated from disciplines, and thus on the attachments and identities they develop (see Hacking 2004; Brew 2007; Granjou and Arpin 2015). In addition, they analyse challenges and tensions that go along with a position

³Earlier definitions of ‘transdisciplinarity’, as for example described by Nicolescu (2006), do not refer to joint problem solving but rather to a unitary scientific approach based on metaphysics and quantum physics that should go beyond disciplinary specifics (see also Klein 2014). In this chapter, I do not refer to this meaning of transdisciplinarity.

between or beyond disciplines (Turnhout et al. 2013). Studies that address how these attachments and identities develop beyond a single discipline, and how they are maintained or shift because of ‘identity work’, mostly focus on the process of role negotiation in inter- or transdisciplinary project teams (see Lingard et al. 2007) or on processes of socialisation in inter- and transdisciplinary education programmes (Hackett and Rhoten 2009; Felt et al. 2013). In a recent body of literature, social scientists have reflected upon their collaboration with natural scientists in the research area that considers ethical, legal, and social implications (ELSI), in post-ELSI research, and in responsible research and innovation (RRI). They have reflected on how this collaboration has challenged the identities and roles of these social science researchers (Fitzgerald et al. 2014; Balmer et al. 2015).

In this chapter, I contribute to the empirical literature on identities beyond disciplinary communities in two ways: first, I investigate not only the attachments and positioning of researchers who engage in transdisciplinary research but also the practices of identity work they do to establish, adapt, and maintain these positions. Second, I go beyond researching identity work and role allocation in one specific collaborative setting and analyse researchers’ identity work across and beyond their engagement in different groups and collectives. I thus analyse not only what kinds of identities are emerging in transdisciplinary research but also what kinds of identity *work* emerge when researchers repeatedly move between different collectives with different understandings of being a good researcher. In order to analyse identity work, I develop the sensitising concept of ‘choreographies’.

11.3 Approaching Identity Work beyond Disciplines as ‘Choreography’

Starting from the insight that relations between collectives and individuals are becoming more fluid and dynamic, this chapter draws on concepts that do not presuppose a certain relation but make it possible to capture different kinds of relating that can be found empirically. Thus, the term ‘togetherness’ (based on Felt 2009; esp. Kerr and Lorenz-Meyer 2009) is used, understood, and further conceptualised as constellations of specific understandings and practices of collectivity and individuality in research (Schikowitz 2017). In this sense, collectivity and individuality are always regarded as related, mutually constitutive, and mutable.

In this chapter, the focus is on ‘identity work’ (Swidler 1986; Butler 1990) as one way of relating collectivity and individuality, understood as practices of interpreting, narrating, adapting, maintaining, and resisting collective imaginations of being a good researcher. The term emphasises that identity is not to be understood as something fixed. Instead, identity is continuously enacted and stabilised through practices of coping with tensions and articulating different ideals, as well as articulating these ideals with self-understandings and practical circumstances, and thus it

represents an achievement. Yet, identity work is not arbitrary either. Instead, practices of identity work are embedded in and entangled with other practices and routines (methodological procedures, education, communication, dissemination habits, etc.) and institutional arrangements (research funding and evaluation, career imaginations, job descriptions, etc.) that stabilise them. Thus, the notion of identity work adopts a relational understanding of agency (Giddens 1984; Law and Mol 2008). It is about how individuals translate collective imaginations and how collective imaginations are reproduced through individuals' practices. Looking at identity work makes it possible to capture the mutual constitution of broader imaginations of what makes up a good researcher and individuals' struggles to build and maintain a satisfactory self-understanding within a certain context. Thus, identity work simultaneously constitutes collectivity and individuality in specific and related ways, which shapes togetherness in research.

Building on the insight that individual movement within and between different collectives reproduces and shapes togetherness, I propose using the sensitising concept of 'choreographies' to analyse the identity work done under conditions of multiple and flexible belongings. This understanding of choreographies is inspired by Cussins' (1998) notion of 'ontological choreography', which she introduced as a way to analyse how, in an infertility clinic, body parts that are objectified and treated separately, different technical procedures, legal and bureaucratic procedures, emotional moments, etc. retain their affiliation to a whole through coordinated spatio-temporal movements. Similarly, identity work as choreography consists of constant movement, a constant back and forth between contradictions. Thus, the notion of choreography includes performance, and it directs attention to how different belongings and ideals in different moments might be related through '*dance instead of design*' (Law 2003, p. 58). In this sense, a specific way of moving constitutes an identity in the first place by aligning otherwise separate belongings. Yet, there might be restrictions about which moves are attainable and worthwhile for whom in which situations (e.g. in different career stages, institutional positions, etc.). While some researchers might be able to dance creatively according to their own inspiration, others might feel forced to move in a specific way or avoid certain moves that appear to be risky. In this way, I understand choreography as a subtle relation of rules, routines, situated responses, and improvisation. A choreography enacts power relations as it distributes and orders possibilities of moving, foreground and background, and degrees of freedom. Simultaneously, choreography includes possibilities for resistance and variation.

Summing up, while the notion of choreography allows for an analysis of multiple aspects in relation to changing practices of togetherness in contemporary research (see Schikowitz 2017), for the purpose of the chapter at hand I focus on choreography as a way of working on and building an identity through moving within and between different belongings when engaging in transdisciplinary research that is held together by a certain style, rhythm, and pattern. Thus, choreographies might develop momentum and effects that were unintended when the individual steps and moves were designed. This makes it possible to reflect on how change in collective orders happens—often in subtle and non-linear ways.

11.4 Material and Methods

11.4.1 Case

As a case for analysing identity work beyond community, I use the major Austrian research programme on transdisciplinary sustainability research, ‘proVISION’⁴ (2004–2012), and the projects funded by this programme. A central funding requirement of the programme was to address problems at the interface of nature and society and to elaborate them in a transdisciplinary way, together with partners from different scientific disciplines and areas of practice, such as scientists, stakeholders, locally affected people, local administrations, NGOs, etc. However, the programme was clearly located in the scientific realm. It was operated by the Austrian Federal Ministry of Science and Research and only scientists could apply for funding and be project leaders.

In the programme description that was published on the website and in the two calls for proposals, the envisioned identity of ‘transdisciplinary researchers’ was discussed in detail. These researchers were ascribed the role of mediators who should achieve a balance between different perspectives and interests and integrate different ways of knowing and experiences based on a ‘neutral’ stance (see Schikowitz 2017). The programme description explicitly addressed the fact that there are not yet any clear norms or criteria for ‘good interdisciplinary science’. That is why humility, i.e. the readiness to sacrifice one’s own scientific prestige to work together on complex problems, was demanded. In contrast, the programme’s evaluation criteria also included high-ranked peer-reviewed publications. Thus, the programme requirements and imaginations reflected different kinds of tensions that have been described as being challenging for identities beyond communities (see Turnhout et al. 2013)

11.4.2 Empirical Approach

The empirical material used for this paper was produced collectively in the project ‘Transdisciplinarity as Culture and Practice’.⁵ The data was collected within eleven

⁴The original website, which also published the two calls, was online until the end of the programme at <http://www.provision-research.at> (accessed 12 May 2013). Due to the discontinuation of the programme and a reorganisation of the responsibilities of the Austrian ministries, the website was shortened and relocated to <https://bmbwf.gv.at/forschung/national/programme-schwerpunkte/provision> (accessed 30 December 2018).

⁵The project was conducted at the Department of Science and Technology Studies (University of Vienna) from 2009 to 2013. It was funded by the Austrian Federal Ministry for Science and Research. The project leader was Ulrike Felt, and project collaborators were Judith Igelsböck, Andrea Schikowitz, and Thomas Völker. See <https://sts.univie.ac.at/en/research/completed-research-projects/transdisciplinarity-as-culture-and-practice> (accessed 30 December 2018).

of the projects that were funded by the programme proVISION and in one doctoral training programme that was co-funded by the research programme. The empirical material for this article mainly consists of 28 semi-structured interviews, two focus groups, and observation protocols of eight meetings held in three different projects. As contextual information, I looked at researchers' (self-)presentations on their websites, CVs, and publication lists.

The researchers had different positions in the projects (project leaders and collaborators), were at different career stages, had different institutional affiliations (specifically employed for the project, faculty positions at a university, employed in private research institutions, etc.), and came from different disciplinary backgrounds (mostly from natural sciences that identify themselves as interdisciplinary, such as ecology, but also from social sciences and humanities such as economics, sociology, history, or theology). For the analysis, I oriented on grounded theory in its constructivist version (Clarke 2005; Charmaz 2006). I used the notion of choreography as a sensitising concept to analyse how to align diverging belongings, but I adapted this notion during the analysis according to the further empirical insights.⁶ Analysing the accounts of this diverse set of informants indicated that researchers with different backgrounds and in different positions move in different ways and that they experience different degrees of freedom in their choreographies.

11.4.3 Analytical Strategy and Presentation of Findings

My initial interest in identity work emerged out of researchers' utterances in the material. In the interviews, many of them explicitly addressed the question of 'how to be good' in transdisciplinary research because they experienced diverging ideals and expectations. Researchers talked about their self-understanding and if and how it is congruent with different identities in transdisciplinary research and beyond. I coded the interviews focussing on accounts of what it means to be a good researcher in transdisciplinary research and in other research areas, what tensions researchers encounter between these areas, and how they deal with these tensions.

From the analysis of the researchers' accounts, four different choreographies emerged that differ in terms of how researchers move within and between different belongings and commitments (see Sect. 11.5). I aggregated researchers' utterances in the material into these four distinct choreographies that cut across individuals' stories. Thus, an individual researcher potentially enacted parts of different choreographies. Yet, most of the interviewees drew predominantly on one of them. The notion of choreography also drew my attention to three aspects of identity work: the specific 'tone' or 'style' (the overall emotional expression, for example, if a dance appears rather cheerful or grave, etc.), the rhythm of identity work (the time-structure

⁶This chapter is based on the analysis conducted in the course of my dissertation project (Schikowitz 2017). Here I focus on a specific question and develop it further.

as a combination of speed and duration of moves and steps, for example, an emphasis on continuity or change of pace), and the pattern or scope of movements (if the dancer stays in the foreground or background, or on which parts of the stage s/he moves). In this way, analysing identity work as choreography also made it possible to reflect on the collective orderings that frame and shape which moves are attainable for whom (see Sect. 11.6).

11.5 Findings—Identity Work as Choreography

11.5.1 *Being an ‘Explorer’—Undertaking Temporary Trips into Unknown Territory*

One way of being a ‘good researcher’ in transdisciplinary research that comes up in the empirical material is by undertaking temporary trips into unknown territories. Such unknown territories become accessible by engaging in transdisciplinary research projects and returning ‘home’ in-between these trips. The notion of ‘explorer’ captures how this choreography resembles the journeys of explorers from the fifteenth to the eighteenth century. What these explorers did in unknown territories was collect and bring home valuable specimens and goods to study them within their own thought system (see Pickstone 2009). In a similar way, a choreography of exploring involves moving into inter- and transdisciplinary engagements, gaining inspiration or new data resources there (which includes data produced by extra-scientific actors, such as NGOs or administrative bodies), bringing this back into a researcher’s usual disciplinary thought system, and processing it there according to her usual working methods. Thus, ‘explorers’ move mostly within their disciplinary field but occasionally, driven by curiosity, they temporarily undertake trips into foreign areas.

In interviews, researchers (both senior and early stage) who enacted a choreography of exploring seemed very relaxed and satisfied with their work. They conveyed the impression of feeling comfortable in the interview situation—sitting casually, using colloquial language, and making jokes. They were generally very open towards us ‘outsiders’ and willingly shared all kinds of information—they would, for example, put us on the internal project mailing list, invite us to all their project meetings and other events, send us the slides of their presentations, and talk to us about their work practices, obstacles, and setbacks in detail. Researchers enacting an explorer choreography stemmed mostly from the natural sciences, covering different career stages and positions, from tenured professors to predoc project collaborators. They exhibited a stable disciplinary affiliation accompanied by a simultaneous attraction to working in very different areas, collaborating with proponents of different disciplines and professions, a supplement to their

disciplinary careers they would refer to as ‘*the salt in the soup*’.⁷ While often foregrounding the interdisciplinary nature of their home disciplines and their scientific approaches, they did not see themselves as transdisciplinary researchers but as ‘*not too far away*’, as researchers who occasionally engaged in transdisciplinary collaborations.

Thus, the relaxed attitude of ‘explorers’ might be related to the fact that they hardly experience tensions with their disciplinary identities when engaging in transdisciplinary research. For them, being a good researcher means to follow their scientific curiosity, even if that means engaging and exchanging data with extra-scientific actors. Cooperating with new actors in this way does not challenge their disciplinary research practices; rather it expands the scope of the empirical field into new areas and makes new bodies of data available to them. In this way, the choreography provides both security and freedom for researchers who enact it.

11.5.2 Being a ‘Caring Broker’—Creating Ad-Hoc Social Bonds while Keeping Epistemic Independence

Another way of creating a researcher identity through moving between different belongings consists of engaging in ad-hoc social bonds that can later be turned into professional cooperation while leaving the epistemic independence of the respective partners intact. Here, the moves and relations are not framed as motivated by a strategic aim, a moral goal, or by a common epistemic interest. Instead, a ‘caring broker’ enacts a social motivation (*‘The first contact came because [at this event] I knew no one, and then someone was nice and I talked to him for a while, and that is actually how that [cooperation] emerged’*). A ‘caring broker’ enlarges his or her scope through initial social contacts with single actors that later open up larger territories to move into. Thereby, ‘caring brokers’ do not exploit other scientific or societal actors, but they take care that each and every member of the project team yields outcomes that are respectively relevant for them. In this sense, they do not only broker between actors, but they do so in a caring way—trying to understand the individual needs and balancing them within a project. They often act as facilitators who organise knowledge exchanges between other actors (compare Meyer 2010). Accordingly, researchers who enact this choreography are often in a coordinating position—they are project coordinators, heads of departments, or they are in charge of research platforms or groups.

In the interviews, this choreography is often covered by small anecdotes that start with (sometimes incidentally) emerging social relations, such as getting into a nice

⁷If not marked otherwise, all quotations stem from interviews with researchers. The original language of the interviews is German. Quotations were translated by the author. To prevent endangering the anonymity of the informants when providing longer descriptions of identities and contextual information, it is not specified which quotations are from which interview.

conversation at an event, establishing an informal get-together within a project team, or getting to know the members of an organisation during a longer research stay on a professional as well as personal basis. 'Caring brokers' frame these relations as emerging, not as strategically planned. Further on in the interviews, 'caring brokers' explained how (sometimes even after the end of a project) these relations later had unexpected beneficial effects that came as a pleasant surprise. Examples of these effects included being invited to follow-up projects with former clients or partners or the promotion of project findings in different contexts. Thus, the choreography of caring does not produce short-term outputs but rather indirect and long-term effects. To describe these indirect effects, a researcher used the metaphor of a stone thrown into water, which causes waves that can be observed at a distant place, or of yeast resting under a cover, fermenting out of sight, and suddenly causing surprising effects. Thus, moving within and between engagements is explained as emerging from social relations of mutual care and as developing according to its own dynamics.

While the choreography of caring links different actors in common projects, the respective epistemic enterprises remain clearly separated. Each scientific and extra-scientific partner gets what is respectively valued in their worlds, and there is no aspiration to blur epistemic boundaries—relevant research questions, methods, and outcomes are defined by scientific disciplines or areas of practice; what gets exchanged is data and readymade findings. 'Caring brokers' argue that every partner is '*top-quality in his [sic] area*', and including others in genuine research would diminish this quality. In this way, a 'caring broker' builds a network of actors who trust him or her in the sense that if s/he asks them to collaborate in another project they would agree because they are convinced that s/he would guard their interests and that it would be beneficial for them epistemically, allowing them to '*still [do] hardcore research*'.

To create a common transdisciplinary project, 'caring brokers' relate these separated disciplinary areas through an overarching issue and story line ('*We put the mortar between the bricks . . . but the bricks were disciplinarily focused*'). They take care that the single parts fit into this overall frame and they act as the link to the funding agency. The practices of 'caring brokers' involve coordination and emotional work. As a way of '*getting them on board*', 'caring brokers' create social relations within the project team by making it a comfortable and interesting space for social exchange—'*We looked forward to the meetings and we had a party at the end*'. Things like nice locations, food and drink, and a nice atmosphere are often mentioned. The social relations create loyalty and trust towards the project as a whole and towards the 'caring broker'.

11.5.3 *Being a 'Moral Manager'—Heading for a 'Greater Good'*

Yet another choreography that makes it possible to develop a researcher identity in transdisciplinary research is to align different activities and belongings by directing them to the 'greater good' of sustainable development. All the individual steps and moves in this choreography are heading for this 'greater good'.

The identity that emerges through this choreography can be labelled as being a 'moral manager' because the main motivation is an explicitly normative one (to foster sustainability rather than to produce knowledge as a goal in itself). As one researcher explains: *'Sustainability is based on values that drive us, or me, you likewise. So that ... makes [the research] meaningful'*. Management techniques are applied in order to reach the goal of sustainability, coordinate different activities, and organise the projects efficiently. Management techniques—in the sense of outcome-oriented steering and detailed plans, or even contracts with project partners—are meant to ensure that no one loses sight of the project goal or spends too much time on activities that do not produce immediate outcomes. For example, as one researcher explains: *'I mean, it is rather a huge challenge or restriction that due to this openness you never know if the loops you spend your resources on actually lead to success ... And we didn't have these resources—that causes stress'*. This means that the choreography of heading for a 'greater good' includes controlling and resisting all moves that might distract from this ultimate goal.

In the interviews, as well as at public events, researchers who enacted this choreography spoke in an earnest way and were aware of the importance of their message. The overall tone of this choreography was alarmed and somewhat defensive—different interests, scarce resources, and inefficient processes appeared as distractions from the goal of working towards sustainability. For example, when we asked one project leader if we could observe a project meeting, this was rejected because the project leader was afraid that we might disturb the research process. 'Moral managers' also modified their own behaviour, sacrificing individual benefit for the sake of the overall goal of sustainability. Personally, they abstained from unsustainable behaviour. In their research, they avoided or restricted activities that count only within science but seem to have no immediate practical effect on the ability to foster sustainability, such as producing specialised publications for a scientific audience. They described this as *'staying pragmatic'*.

While the overall scope and direction of this choreography is rather targeted and straight, its rhythm is unsettled and wavering. 'Moral managers' emphasised that to keep everything in line, they need specific qualities, skills, and competences, such as coordination, multitasking skills, and *'juggling'*. While never losing sight of the 'greater good', 'moral managers' also seemed to enjoy the more playful moves that allow them to introduce their own creativity and skilful performance. The requisite qualities were described as a certain readiness to get involved, risk-affinity, or courage. Thus, going beyond a discipline was framed not only as a question of cognitive capacity but primarily as a question of moral strength and courageousness.

Overall, moral qualities were emphasised as a crucial part of a ‘*transdisciplinary researcher personality*’, going hand-in-hand with the willingness and ability to acquire knowledge from several areas. This was also reflected in the professional career path of many ‘moral managers’. They often did not spend their whole education and professional life in one discipline. Furthermore, in many cases they had had some additional training or previous experience in areas like project management or science communication. Here it is interesting that the willingness (or a ‘*serious want*’⁸) to abandon a disciplinary home, not only temporarily but permanently, was often explicitly mentioned as necessary for implementing transdisciplinary research in a meaningful way. Such mental strength was needed because not belonging to a specific community means that the relevant communities need to be identified and assembled anew for each and every project. When asked about the relevant communities for their research in the interviews, ‘moral managers’ sounded rather frustrated: ‘*Yep, that’s the question for every transdisciplinary project*’. This signifies extra effort vis-à-vis disciplinary researchers who stay within one community in which they move more intuitively.

11.5.4 Being a ‘Polymath’—Integrating Encounters with Others into One’s Own Life Story

When researchers who enact the choreography of a ‘polymath’ talk about what it means to be a good researcher, it feels a bit anachronistic and nostalgic. They evoke the idea of a researcher who is directed by her engagement with a certain phenomenon rather than steered by a strict project plan. Here, the researcher appears not as a representative of a certain discipline nor as ‘broker’ who facilitates encounters with or for other actors but as a ‘polymath’ who moves back and forth between different communities and belongings and who integrates the different experiences and encounters within her personality and her personal body of knowledge. This choreography puts the person of the researcher in the centre, and developing personally—intellectually, emotionally, and morally—is its main imperative. The main motivation is not, in the first place, the *production* of knowledge as a commodity or as a means to reach a ‘greater good’ but rather *understanding* in a more comprehensive, personal, and emotional sense—‘*experienced through one’s own brain and through one’s own emotions*’. This is also what distinguishes the choreography of a life story from the explorer choreography that focuses on objective facts that would reflect knowledge about the world, independently of the person of the researcher.

To develop a deep and personal understanding of a certain phenomenon, researchers reported that it is necessary to engage with others on a personal basis, and that transdisciplinary research allows for such encounters. Encounters should be characterised by openness, mutual interest, and respect, and they trigger reflection,

⁸This quotation was from a focus group with researchers of different projects.

creativity, and the development of new perspectives on both sides. Thus, researchers enacting this choreography generally welcomed our interview requests as they see reflection as a crucial part of their research, and they also regarded the interviews we conducted with them as an opportunity for such reflection. For example, we were asked for the transcript of our interview for 'internal reflection'. The rhythm that goes along with this choreography is that of a biographical narrative, of working on different experiences and encounters through reflection and of creating a coherent and holistic story. Thereby, the continuous process of learning is what matters rather than single episodes or specific outcomes. Togetherness appears in the form of open reflection and mutual learning—however, it is restricted to the individual persons involved in such encounters and to specific moments.

The choreography of a life story has a rather epic scope; it does not restrict itself to specific kinds of problems or to a specific research area but includes universal and interconnected claims. In this way, transdisciplinarity is seen not only as an approach for handling specific problems but as a better way of doing science (epistemically and morally). The choreography follows a unitary understanding of science, also evoking the earlier meaning of transdisciplinarity as a unitary scientific approach (Nicolescu 2006; Klein 2014) that demands a holistic researcher identity (Giri 2002). It frames transdisciplinarity as an attainable standard for scientific research more generally and something that should be institutionalised. Thus, a 'polymath' does not feel committed to her discipline but rather follows an overarching view. She experiences institutional obstacles to such an overarching approach as illegitimate and seeks to overcome them by promoting transdisciplinarity. One researcher even stated that the disciplinary organisation of science would be '*an absurdity*' and '*naturally completely unproductive and utterly, utterly stupid*'.

11.6 Collective Ordering

Building on the analysis of four different choreographies, I reflect in this section on how identity work as choreography impinges on collective orders and how collective ordering shapes the conditions of possibility for individual moves. Overall, the analysis suggests two broader collective ways of ordering togetherness: first, researchers who do not question their disciplinary belonging use transdisciplinary research as a temporary extension that provides resources to inspire and enrich their disciplinary research ('explorers' and 'caring brokers'). They engage in practices of networking and 'trade' but do not blur epistemic boundaries. Second, researchers who try to position themselves and their research as genuinely transdisciplinary rely on improvised and more personal choreographies ('moral managers' and 'polymaths'). They cannot draw on a collective set of stories about how to be a 'good researcher' but need to invent themselves permanently anew. Thus, they engage in community-building and institutionalisation. They try to establish and stabilise a transdisciplinary community that could provide legitimacy for their own way of being in research.

11.6.1 Transgressing but Maintaining Boundaries through Trade

The choreographies of undertaking trips into unknown territories and of creating social bonds are both firmly anchored in disciplinary belongings and their epistemic standards and practices of how to be a good researcher. They allow for togetherness as ‘trade’ (in the sense of Galison 1996). Thus, they can often be found within the same projects. Trade means that while established boundaries are maintained, single actors can temporarily cross them, exchange goods, and subsequently integrate these goods into their own value system. Thus, practices of trade work to build networks rather than communities. Engaging in trade allows researchers to break out of their densely structured and institutionalised research environments without abandoning the security that their disciplinary belongings provide. Trade makes it possible to keep disciplinary knowledge production within interdisciplinary settings separate, to a large extent. Relations are developed via clearly defined interfaces—encounters serve to transfer knowledge as ‘input’ and ‘output’. The value of transdisciplinary research would be to link knowledge about single aspects of a given problem in a systematic way, or to transform them into a comparable and linkable scale.

Organising togetherness as ‘trade’ provides security and orientation for researchers who move between different collectives. In projects that enact togetherness as trade, most members (researchers as well as stakeholders) expressed in the interviews that they perceive the introduction of predefined procedures—rather than negotiating relations during the process—as relieving. As a result of practices of ‘trading’, existing boundaries are often reinforced or left untouched. Researchers who engage in ‘trade’ are mostly from the natural sciences or quantitative social sciences. They perceive a division of (epistemic) labour through the input and output of separately produced data to be unproblematic. Yet, those who do not share a positivist understanding of knowledge as reflecting parts of one common reality, but who see knowledge and knowing as situated within the context of its production, face problems engaging in the collective order of trade. This is the case for qualitative interpretive or constructivist knowledge as well as for embodied knowledge.

11.6.2 Establishing New Boundaries through Attempts at Building a Transdisciplinary Community

Analysing different choreographies shows that staying within established epistemic boundaries seems rather safe, while trying to blur them requires personal sacrifices or personal engagement without knowing if this will work out in the long run (see also Blättel-Mink and Kastenholz 2005). The latter is the case mostly for researchers who see themselves as transdisciplinary researchers, even when they are senior researchers in rather secure positions. It is even more pressing for early stage researchers who often describe the feeling of ‘belonging nowhere’ in a very personal

way, as exemplified in the following quotation from a student in a transdisciplinary doctoral college:

My disciplinary home has gotten a little lost now, because it is not X any more—and even before it was only with some reservation—and, so, I can use a lot of it, I can really use very, very much of it, but it is not the case that I would be at home in this community then.

Here, we encounter a distinction between drawing on knowledge and approaches from different disciplines and a feeling of belonging. Also, other researchers use a very emotional and personal language when narrating this impression, talking of '*not feeling at home*' or '*being an outsider*'. The metaphor of the home reflects the desire to belong and be accepted as an insider, a desire hardly fulfilled in transdisciplinary research. '*Belonging everywhere and belonging nowhere*' are described as two sides of the same coin. The identity work of 'transdisciplinary researchers' is thus not so much about negotiating their self-understanding vis-à-vis an ideal but also about *creating an ideal* that would prove stable across different belongings and engagements. In many cases, researchers locate this overarching ideal on a moral level, while they feel the need to vary epistemic standards and practices from project to project. Thus, while it seems to be quite clear for them how to be morally good in transdisciplinary sustainability research, on an epistemic level, what it means to be a good researcher must perpetually be established anew (compare also Felt et al. 2013).

Moreover, in the choreography of heading for a 'greater good', tensions with striving for good epistemic work in a traditional disciplinary sense can arise. This goes along with insecurity and precarity, since intra-scientific assessment criteria and the attribution of worth, as well as legitimacy and credibility in the policy domain, are often related to epistemic aspects (compare Turnhout et al. 2013). In addition, the choreography of a life story, where a personal development process provides the connective ideal, falls short of meeting standardised assessment criteria. 'Being a polymath' is thus only attainable for already-established researchers with a fixed institutional position, while their younger colleagues describe it as '*completely naïve*' within the current science system.

Several researchers who position themselves as transdisciplinary researchers express the desire for a common epistemic framework that would provide them with some common understandings about legitimate questions, methods, conceptual approaches, and procedures, so that these do not need to be negotiated and justified every time. In this way, they take into account or even wish to normalise in the sense of building a '*standard routine*', '*certain guidelines, where to look*', and '*the agreement on a structured process*' that would be '*basically ... the core of such a thought collective that should develop*'. This leads to the slightly paradoxical situation where something that, by definition, should always be assembled anew ends up being established in a more permanent manner. Such tendencies of institutionalisation are hence seen by some researchers as actually contradicting the transdisciplinary claim for inclusiveness (this is also discussed in the literature; see Blättel-Mink and Kastenholz 2005; Jahn et al. 2012; Turner et al. 2015). An early stage researcher engaged in one of the projects describes this exclusive nature of

community-building by stating that ‘*community actually already demarcates vis-à-vis others ... so that is more or less an in-group*’. In this way, practices of community-building are necessarily exclusive and ‘disciplining’. Institutionalisation and flexibility are adjured simultaneously—the exclusiveness and rigidity of disciplines is criticised as being inadequate for overarching and complex problems, but at the same time researchers strive for the stability and orientation that such institutionalised structures would provide. As a result, institutionalisation and de-institutionalisation of transdisciplinarity, building and re-building communities, stays in a permanently provisional state.

11.7 Conclusions

My concern in this contribution has been with transdisciplinarity, which makes claims about identity work and belonging beyond disciplinary communities. Rather than building a new community, researchers are urged to abandon all long-term belongings. This goes along with specific kinds of tensions that differ from the tensions that occur in emerging interdisciplinary fields such as nanoscience and synthetic biology, where providing new identities and building new communities is an explicit goal (Molyneux-Hodgson and Meyer 2009). The findings presented here suggest that community *still* matters as a basis for providing an understanding of how to be a proper scientist in terms of practices, virtues, and motivations; thus identity work beyond community is a paradoxical undertaking.

I analysed four different choreographies that go beyond single projects or belongings and that allow for being a good researcher in transdisciplinary research. ‘Explorers’ follow their epistemic curiosity, which is firmly based in their home discipline but which leads them to undertake trips into unknown territories from time to time where they engage and exchange with different actors. ‘Caring brokers’ align their different encounters and belongings through social bonds. They cooperate in common projects where they work on the same topic or exchange data without intermingling their disciplinary epistemic practices. ‘Moral managers’ are heading for a ‘greater good’, a goal that unites all their different engagements and belongings, and they are ready to sacrifice personal epistemic interests and disciplinary success to that goal. ‘Polymaths’ pursue the path of a life story, translating all kinds of encounters and belongings into their personal development and embodied knowledge—which proves to be only attainable for researchers who are already in an institutionally secure position.

These choreographies of identity work go along with two broader collective ways of ordering togetherness. ‘Explorers’ and ‘caring brokers’ are engaging in networking and trade (Galison 1996), which maintains existing boundaries but allows for crossing them in predefined ways. ‘Moral managers’ and ‘polymaths’ engage in attempts of community-building and institutionalisation of transdisciplinarity, which stays an ongoing struggle as they simultaneously abandon all long-term belongings.

These findings suggest that togetherness or communality in transdisciplinary research does not necessarily mean membership in a community. Togetherness also appears as engagement in ever changing strategic and personal networks (that does not, however, challenge belonging to the home discipline) or as (ongoing) engagement in the paradoxical undertaking of building community while abandoning belonging to a community. Both kinds of togetherness include ongoing movement and oscillation between groupings beyond community but which simultaneously gravitates around community or the desire for a community. Identity work in situations of multiple belongings only works out for researchers when they come from a 'home base', from a stable community that they can return to and refer to (compare Hacking 2004). This holds true across career stages and institutional positions. Thus, there is a tension between stability and openness. Being open towards others seems to be satisfactory only when one is part of a stable and necessarily closed community.

Against this backdrop, I return back to the initial question whether it is possible to imagine transdisciplinary choreographies of identity work that would allow for a blurring of epistemic boundaries between different disciplines and between science and society in a more radical way, transcending practices of trade (that 'explorers' and 'caring brokers' enact) but without self-denial or precarious working circumstances (as is the case for 'moral managers' and 'polymaths' who abandon disciplinary belongings). The findings suggest that this would require collective coping strategies beyond single programmes or projects (compare Schikowitz 2017). In order to develop such collective coping strategies, policy would need to reflect upon what the intended forms and practices of togetherness actually are, what kinds of individuality specific forms of collectivity would imply, and vice versa.

Existing literature that develops concepts and imaginations on what 'good research' in both epistemic and moral terms could mean in a transdisciplinary frame—such as Funtowics and Ravetz (1993) on 'post-normal science' or Pohl (2005) and Hollaender et al. (2008) as well as Pohl and Hirsch Hadorn (2008) on 'transdisciplinarity'—does not, however, provide imaginations of how 'good transdisciplinary research' could be aligned with 'good disciplinary research' when researchers move between different belongings. This literature focuses on transdisciplinary research projects and mostly identifies methodological issues or insufficient personal or institutional commitment as hindering transdisciplinarity from fulfilling its promises. Yet, the analysis at hand and its focus on choreographies that go across and beyond different projects and work contexts suggests that beyond single projects, individual researchers (even if they are committed to the idea of transdisciplinarity) are not able to both satisfy the normative claims of transdisciplinarity and the epistemic requirements of disciplinary research. Thus, without cultural change within science and science policy, transdisciplinary researchers still risk falling short in terms of disciplinary assessment systems (compare Turnhout et al. 2013). A broader debate is needed on how incremental change can be valued beyond measurable and countable output (compare Fochler et al. 2016)—a debate that needs to include not only transdisciplinary research but also disciplinary research. This could involve understanding transdisciplinarity as an

opportunity to imagine and probe desirable and attainable research futures that go beyond the dominant research regime based on quantification (compare, for example, Klenk and Meehan 2015).

The analytical utility of the notion of choreography beyond the specific case of transdisciplinary research seems promising. While the specific choreographies and the identities that go along with them might be different in different contexts, dealing with contradictions between different belongings can be analysed through the lens of choreographies on a general basis. The notion may well provide a sensitising concept for research in all fields that feature change, tensions, and contradictions, such as emerging interdisciplinary fields.

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