Transdisciplinary Teams as Discourse Coalitions: Building transformative narratives for transdisciplinary inquiry

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INTRODUCTION

It has become abundantly clear that the sustainability challenges humanity faces in the 21st Century, such as climate change, biodiversity loss and the lack of an equitable social foundation for all people (Raworth, 2017), demand a purposive approach to societal transformation (Fazey et al., 2017; Linner & Wibeck, 2021). Linner & Wibeck (2021, p. 890) define transformation as 'a profound, enduring, and non-linear change in complex systems'. Faced with this transformative challenge, many scholars call for new knowledge production practices (Fazey et al., 2020; Norström et al., 2020; Schneider et al., 2021). Primary among these is co-production of knowledge, defined as 'iterative and collaborative processes involving diverse types of expertise, knowledge and actors to produce context-specific knowledge and pathways towards a sustainable future' (Norström et al., 2020). Transdisciplinary research, action research (Lewin, 1946) and post-normal science (Funtowicz & Ravetz, 1993) are three common approaches to co-production of knowledge (Schneider et al., 2021).

While co-production of knowledge is undoubtedly needed to support purposive societal transformation, it is by no means easy to achieve in practice (Fam & O'Rourke, 2020; Fiore, 2020; OECD, 2020). It requires transformation of long-established scientific practices and discourses and pushes research teams to generate new narratives about their work. In other words, it requires transformation of our narratives about knowledge production. To illustrate the challenges posed by such a transformation, I will share a story from my own practice.

In 2006, I joined an exciting transdisciplinary research project at the University of Technology Sydney. The project was funded by an internal university grant. Its goal was to bring together researchers from across the university, breaking us out of our disciplinary silos to develop new collaborative research projects. As an early career researcher in sustainable

futures, I was thrilled to engage with ecologists, designers, engineers, policy scientists and social scientists.

We began a series of fortnightly meetings to build a research project together, but quickly found that this was much more difficult than any of us had imagined. Each of us entered the room not only with our own research agendas and objectives, but with an unconscious disciplinary language – a discourse – in which only we were fluent. Words with self-evident meaning in our own field seemed to mean something quite different in other fields. Often, it felt like we were talking past each other. Common ground between our various research agendas was elusive.

Eventually, after many meetings over the course of a year, and with project deadlines looming, we identified a shared research interest in the management of the largest river system in Sydney – the Hawkesbury-Nepean. Before our funding ran out, we got as far as developing a research agenda that we hoped could lead to future funding proposals. In the end, those proposals never eventuated, and the group disbanded, returning to our more familiar roles and disciplinary spaces. We did not achieve a transformation in the management of the Hawkesbury-Nepean River, let alone produce the kind of traditional research outputs that are so valued in academia.

I share this personal experience because I think the challenge of building shared narratives to support transdisciplinary research teams is underestimated. In this example, we were unable to build a shared narrative about the purpose of our group that led to a productive research collaboration. This is not an uncommon experience. The members of transdisciplinary research teams can have radically different ways of seeing the world, different languages and meanings, and different goals (Fiore, 2020; Pohl et al., 2021). While diversity, and even conflict, has the potential to be creative and generative (Escobar, 2018), it can also prevent teams from working together effectively towards transformative goals.

In this chapter, I draw on the concepts of discourse coalitions (Hajer, 1995) and discursive entrepreneurship (Riedy, 2021) to explore the ways in which transdisciplinary teams build shared narratives. I propose ways to approach this process more consciously to support co-production of knowledge for sustainability transformations. The next two sections introduce a conceptual framework. The first positions transdisciplinary teams as a type of discourse

coalition; the second draws attention to the entrepreneurial work that such teams do to transform discourse. This is followed by a section describing my research approach, which I describe as 'circling out' from personal reflection on transdisciplinary teams that I have participated to wider literature review. I then deploy the conceptual framework in four sections reflecting on key practices of discursive entrepreneurship: deconstruction; framing and reframing; collaborative construction and performance of meanings; and proactive diffusion of meanings. The conclusion draws the reflective threads together by identifying eight specific practices that might help transdisciplinary research teams to achieve their discursive goals and more consciously support co-production of knowledge for sustainability transformations.

TRANSDISCIPLINARY TEAMS AS DISCOURSE COALITIONS

In 1995, Maarten Hajer introduced the idea of discourse coalitions as part of his study of the politics of environmental discourse. Hajer (1995, p. 44) defines discourse as 'a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities'. He defined discourse coalitions as 'unconventional political coalitions…made up of actors such as scientists, politicians, activists, or organizations representing such actors' that 'somehow develop and sustain a particular discourse, a particular way of talking and thinking about environmental politics' (Hajer, 1995, pp. 12-13).

Without necessarily having met or agreed on any strategy, these coalitions gained political power by grouping around specific 'story-lines'. Storylines are 'narratives on social reality through which elements from many different domains are combined and that provide actors with a set of symbolic references that suggest a common understanding' (Hajer, 1995, p. 62). Despite sharing a set of storylines, actors in a discourse coalition 'might nevertheless interpret the meaning of these story-lines rather differently and might each have their own particular interests' (Hajer, 1995, p. 13). Hajer was particularly interested in discourses such as sustainable development and ecological modernisation, which became dominant environmental discourses while meaning very different things to discourse participants.

Hajer developed his thinking about discourse coalitions in the context of large-scale political debates involving many actors. My argument is that his idea can be fruitfully applied to transdisciplinary research teams, despite evident differences in the scale and type of collaboration. My justification for this is as follows. First, although Hajer's discourse coalitions involved many more actors, transdisciplinary research collaborations do typically involve actors from diverse backgrounds – not only scholars from different disciplines, but frequently stakeholders in the issue at hand from government, business and civil society (Fam et al., 2017). Indeed, many scholars identify diversity as a normative goal for transdisciplinary research teams (Deutsch et al., 2021; Moreno-Cely et al., 2021). This makes transdisciplinary research teams smaller versions of the diverse, unconventional coalitions that Hajer studied.

Second, all persistent groups must grapple with the challenge of finding a narrative – a story-line – that binds them together sufficiently to allow them to persist and function. In Tuckman's well-known model of group development, new teams move through stages of forming, storming, norming, performing and adjourning (Bonebright, 2010). It is notable in this model that groups do not start to perform well until they have been through the norming stage, where the group develops cohesion by establishing norms, shared mental models and a sense of group identity (Bonebright, 2010). In essence, this is the formation of a shared narrative for the group.

There is substantial common ground between the idea of discourse coalitions and the concept of a community of practice, which Wenger (2011, p. 1) defines as a group 'of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly'. Communities of practice have a shared domain of interest, engage in community activities and discussions, and do things together – they practice (Wenger, 2011). The difference between the concepts is one of emphasis. In thinking about a team as a community of practice, there is naturally a stronger emphasis on the practice – what the community does. In thinking about a team as a discourse coalition, there is a stronger emphasis on the narratives that the team adheres to, and how those narratives form. I have chosen the narrative path in this chapter, while recognising that it is also fruitful to explore teams as communities of practice (see chapter 10).

To explore processes of narrative formation, I draw on an additional conceptual framework – the idea of discursive entrepreneurship. I define discursive entrepreneurship as 'the practice of creating, performing, and transforming memes, stories, narratives, and discourses to promote a desired structure of the discursive landscape' (Riedy, 2021). Discursive entrepreneurs are actively engaged in transforming narratives to promote desired meanings and ways of seeing the world.

This framework is relevant to the work of transdisciplinary teams in two ways. First, as discussed in the previous section, transdisciplinary teams need to find a way of working together to effectively achieve their goals. This means they are internally engaged in finding a shared narrative that can support their work together. While all team members may be engaged in this process, those who see themselves as group leaders may be particularly focused on promoting a preferred narrative for the team.

Second, transdisciplinary research teams are inherently engaged in external contestation over discourses of knowledge production. By self-defining as a transdisciplinary research team, or a team engaged in co-production of knowledge, researchers take a discursive position that critiques established forms of knowledge production and promotes new forms. They enter a discursive battle over the nature of valid knowledge and its application. Whether they do so consciously or not, they become discursive entrepreneurs.

Riedy (2021) defines key meaning-making practices used by discursive entrepreneurs, including deconstruction, reframing, construction, performance, connection, and collaboration. These practices loosely structure the discussion in the remainder of this chapter, following a section on my approach.

Research approach

The approach I have taken to write this chapter could be described as 'circling out'. I began by critically reflecting on my own participation in transdisciplinary research teams, starting with the project described in the Introduction. This project was my first experience with a team trying to put the theory of transdisciplinary research into practice; it could be described

as a failed attempt at forming an effective discourse coalition. I continued to reflect on my personal experience by scrutinising the narrative practices of subsequent transdisciplinary research teams I have participated in through my work at the Institute for Sustainable Futures (ISF), University of Technology Sydney. In this reflective work, I was looking for narrative elements and narrative practices that these teams used to build shared storylines. Many of these projects were more successful in making progress towards desired outcomes.

As my reflection continued, I expanded the review beyond projects I had personally participated in to include the work of colleagues at my university, then transdisciplinary networks I have had some engagement with (particularly the blog posts of the Integration and Implementation Insights community, at https://i2insights.org/), and then networks I am aware of but less engaged with (the Network for Transdisciplinary Research, td-net, at https://transdisciplinarity.ch/en).

The choice of networks to focus on responded to early findings from the reflective process. Specifically, reflecting on ISF's transdisciplinary research practice (Fam et al., 2016) reminded me of Klein's (2015) classification of transdisciplinary discourses of transcendence, problem-solving and transgression. Given my focus on purposive transformation, the problem-solving discourse was of most interest to me, and Klein (2015) names the two networks above as key proponents of that discourse. I focused heavily on reviewing blog posts indexed under relevant keywords at I2Insights because I anticipated researchers would be more likely to reflect on what made their teams work (or not) in the less formal setting of a blog post. I reviewed blog posts from the last three years under the index terms analogy (2 posts), collaboration (26), collective intelligence (2), communication (13), foresight (3), framing (3), groupthink (1), meeting protocols (5), mental models (5), rituals (2), storytelling (4), teamwork (40), values (4) and vision (4).

The final step in the circling out was to review prominent recent articles on transdisciplinary research and co-production of knowledge to check that I had not missed key narrative elements and practices (including Bammer et al., 2020; Deutsch et al., 2021; Freeth & Caniglia, 2019; Freeth & Vilsmaier, 2020; Klein, 2020a, 2020b; Kligyte et al., 2021; Lam et al., 2020; Norström et al., 2020; OECD, 2020; Pohl et al., 2021; Pohl & Wuelser, 2019; Renn, 2021; Schneider et al., 2021; Tobias et al., 2018; Wuelser et al., 2021). Throughout this process of review and reflection, I was looking for narrative elements and practices used by

transdisciplinary research teams, guided by the framework of discursive entrepreneurship. I did not impose a particular definition of transdisciplinary research in deciding what work to review. Any teams that self-define as transdisciplinary were eligible for inclusion, as variations in narratives about transdisciplinary research were of central interest for the research. I did, however, confine the analysis mostly to teams engaging with sustainability challenges.

DECONSTRUCTION: REFLECTING ON THE DISCURSIVE LANDSCAPE

In discursive entrepreneurship, deconstruction refers to the process of surveying the discursive landscape and identifying opportunities for strategic meaning-making (Riedy, 2021). In the context of transdisciplinary research teams, it involves understanding the possible meanings and narratives associated with transdisciplinary research and how these might affect the work of the team. In the project I described in the Introduction, it is fair to say that our team had no sense of the diverse discourses that exist about transdisciplinary research, or its longer history and origins. We felt like pioneers working out what transdisciplinary research was for the first time. We assumed that *our* discourse of transdisciplinary research was *the* discourse of transdisciplinary research.

In fact, there are multiple discourses of transdisciplinarity, emerging from different traditions and practices (Klein, 2015; Renn, 2021). In 2015, Julie Thompson Klein (2015) identified three distinct discourses of transdisciplinarity: transcendence; problem-solving; and transgression. The discourse of transcendence is concerned with epistemological unity and draws on a strong philosophical tradition. The discourse of problem-solving frames transdisciplinarity as a way to more effectively address complex societal challenges. The discourse of transgression emerges from critique of existing systems of knowledge and education. In a similar vein, Roderick Lawrence characterised transdisciplinary research as integrative, participative, transgressive, transformative and multicultural (Lawrence, 2017). Further, TD-Net defines four key purposes of transdisciplinary research which correspond to different definitions (and discourses): encyclopaedic understanding, holistic understanding, problem solving, and reflection-in-action (TDNet, 2021). More recently, Renn (2021) proposed three distinct research concepts for transdisciplinary research, each with their own discourse: curiosity-driven, goal-oriented and catalytic. Some of these discourses are more

consistent with a goal of purposive societal transformation – the discourse of transcendence is more philosophical and not specifically geared towards sustainability transformations, whereas problem-solving, goal-oriented and transformative discourses clearly are. Problem-solving discourses are dominant in the literature and institutional perspectives on transdisciplinary research, as seen for example in the work of the OECD (2020).

One of the core intentions of this book is to draw attention to the diversity of global discourses about transdisciplinary inquiry. In this vein, it is important to be aware of the geography of such discourses. Dominant conceptions of transdisciplinarity in Europe, for example, are very different to those prevailing in Latin America or Australia. As networks of transdisciplinary researchers strengthen, there may be increasing convergence of discourses but, for now, one's discourse of transdisciplinary research is very much shaped by geographic context.

The existence of such diverse discourses about transdisciplinary research, and their geographic diversity, makes it possible – indeed likely – that those individuals entering a transdisciplinary research team have participated in different discourses and associate different meanings to transdisciplinarity. As Pohl et al (2021) put it, drawing on the work of Fleck (1979), they bring different 'thought-styles' that have been nurtured in distinct 'thought-collectives'. Conflicting thought-styles or meanings can lead to misunderstanding and conflict over project goals. Team reflection on and naming of the discursive landscape and our own discursive assumptions can be a valuable practice for understanding the starting positions of the participants and opening productive dialogue.

To illustrate, I will give a few examples. First, returning to the example from the Introduction, our collective ignorance of the discourses of transdisciplinarity (which admittedly had yet to be named in the literature) meant that we lacked clarity about our goals. We entered collaboration to explore the process of transdisciplinary research itself and learn how to do it in a diverse group, without having a specific research challenge in mind. In hindsight, I think that team members had different perspectives on the goal of transdisciplinary research – some had a philosophical interest (a transcendence discourse) and others wanted to solve sustainability challenges (problem-solving discourse). The key lesson for me from that early experience was to start with a particular sustainability challenge as the focus and then work out who needs to be involved to take an effective transdisciplinary

response to that challenge. In other words, I have embraced a problem-solving discourse and seek out collaborators that share that discourse. This embrace of a problem-solving discourse has frequently helped teams to deliver positive change (Fam et al., 2017), and even 'failures' carry the potential for learning (Fam & O'Rourke, 2020), which is a valued outcome.

Second, recognising the discourse you are embedded in and deconstructing the assumptions of that discourse can reveal new practices. When Klein (2015) articulated problem-solving discourse, I quickly recognised it as my discursive home. My institutional home, the Institute for Sustainable Futures, was established in 1997 with an organisational mission to create change towards sustainable futures. Problem-solving discourse is a natural fit for our work. However, over time, I have become critical of its discursive assumptions. The assumption that the world is made up of 'problems' that can be solved does not mesh well with my experience of complex systems, where unpredictable, emergent behaviour is the norm. Sustainability challenges are never 'solved', although progress may be made (Mitchell et al., 2015). The language of problem-solving also feels conventional, making it easily co-opted by those that would prefer endless incremental reform to the purposive transformation needed to genuinely respond to sustainability challenges. I prefer to frame transdisciplinary research as a (potentially) transformative response to unsustainable situations that may help to move them in a positive direction. This framing supports more iterative research approaches, such as action research cycles, where learning is continual.

Third, reflecting on the discursive landscape can reveal opportunities and challenges for practice. For example, the recent emergence of co-production of knowledge as an umbrella term that takes in diverse practices including transdisciplinary research, action research and post-normal science (Norström et al., 2020; Schneider et al., 2021) is a clear opportunity to broaden discourse coalitions, creating a storyline that aligns the goals of multiple groups. Instead of focusing on their differences, such a storyline foregrounds the shared focus of diverse groups of researchers on critique of status quo knowledge production practices and promotion of practices that are context-based, pluralistic, goal-oriented and interactive (Norström et al., 2020). By orienting with this storyline, transdisciplinary research teams can find discursive allies and build broader, more powerful coalitions for transformation of knowledge practices.

A core practice for reflecting on the discursive landscape is the familiar process of literature review, which allows teams to become familiar with narratives about best-practice and principles for transdisciplinary research. While there is much diversity in narratives about transdisciplinary research, certain terms recur again and again. For the dominant problem-solving discourse, typical narrative statements include:

- Transdisciplinary research is one type of **co-production** of knowledge (Norström et al., 2020; Schneider et al., 2021)

- Transdisciplinary research is a necessary response to **complex societal challenges** (particularly **sustainability** challenges) (OECD, 2020)

- Transdisciplinary research is **goal-oriented**, seeking to achieve positive change or transformation in the situation at hand (Mitchell et al., 2015; Norström et al., 2020)

- Transdisciplinary research is **context-based**, grounded in the particularities of the challenge it is addressing (Norström et al., 2020)

- Transdisciplinary research is **pluralistic**, recognising diverse perspectives, beyond academia, as valued and necessary (Norström et al., 2020)

- **Integration** of knowledge from those different perspectives is a core challenge and key objective to develop more **holistic** knowledge of a situation (Pohl et al., 2021)

- **Reflexivity** or **critical reflection** are essential capacities to cultivate for transdisciplinary research (Kligyte et al., 2021)

- The process of transdisciplinary research is **interactive**, providing opportunities for **social learning** to take place (Mitchell et al., 2015; Norström et al., 2020).

This is my own synthesis of the currently dominant discourse of transdisciplinary research. Others, particularly other teams, will arrive at different syntheses. The point is that teams need to develop a shared view of the discursive landscape before they go on to mark out their position in that landscape. This is a practice of framing, discussed in the next section.

Framing and reframing

Framing is the act of choosing what meanings to 'make salient' in communication, or in the storyline governing a group (Fløttum & Gjerstad, 2016; Ross & Rivers, 2019). It is a crucial next step after reflecting on the discursive landscape. Having developed an understanding of

the discourses and narratives that are currently circulating, such as my list of narrative elements above, transdisciplinary research teams can make choices about how to frame their work in ways that can increase their effectiveness and potential to contribute to sustainability transformations.

Within a transdisciplinary research team, this process of framing can be understood as the selection, by the team, of the norms and practices that will guide their work together. Part of this process is what Pohl et al (2021) describe as 'problem framing', where participants collectively identify questions to work on within a broader topic of shared interest. Of more interest from a discursive perspective is how transdisciplinary teams choose meanings to support their work together. Often, teams leave this work implicit and simply assume that they have come to the project for the same reasons and bring similar meanings. However, as Hajer points out, and as is also evident from work on boundary objects (Star, 2010), what can appear as a shared narrative can actually have quite different meanings for participants. As such, initiating dialogue about team narratives to discover what exactly is shared and what might be hidden points of difference is an essential practice.

In the catchment management project I discussed earlier, one of the things we did achieve was to explicitly agree, after much dialogue, on a set of behaviours to guide our collaboration (Palmer et al., 2007, p. 309). The documentation of these behaviours was partly a response to the challenges posed by collaborating in a very diverse group with different disciplinary norms and languages. Many of the behaviours sought to harness this diversity for creative outcomes, for example by encouraging tolerance to 'discomfort and unresolved tensions as they are often a gateway to a new level of knowledge, understanding and trust' (Palmer et al., 2007, p. 309). The agreed behaviours brought the storyline of our group out into the open and encouraged generosity, tolerance, trust, sustained engagement, recognition of the 'whole person' and critical reflection. It was important to our shared identity that these behaviours were documented rather than left implicit.

Many scholars recognise the value of explicitly surfacing and naming the norms that will govern the team early in a project (Hubbs et al., 2020; Klein, 2020a; Moore & Khan, 2020; Moreno-Cely et al., 2021; M. Rossini, 2020). For Klein (2020a, p. 265), the first of six principles for success in transdisciplinary research is 'transparency in all aspects of boundary work'. Naming the norms and discourses that will govern a team provides such transparency,

at least internally. For Moore and Khan (2020), 'building a shared understanding' is the first core competency of implementation practice. Rossini (2020) describes the use of 'nomadic concepts' to explore differing uses and understandings of concepts within a team and build bridges between participants. Drawing on an Andean perspective, Moreno-Cely et al (2021) describe a 'circle of dialogue of wisdom' in which the first two steps are 'knowing each other' through listening and drawing out real motivations, and 'concerting rules for participation' for a respectful and supportive alliance. They specifically draw attention to differences in culture, worldview and positionality, and hidden assumptions, values and interests. Similarly, Hubbs et al (2020) describe a toolbox dialogue method for use in team workshops to facilitate dialogue about the core beliefs and values that frame perspectives and bring unacknowledged differences to the surface. Drawing on the review of the discursive landscape above, I would argue that all these framing practices should include explicitly naming the transdisciplinary discourse that the team belongs to, and the narrative elements that are part of that discourse, as a way of reducing potential misunderstandings within the group.

This is not necessarily a simple process; it can involve interrogation of narratives and negotiation over meanings. For example, in the section above I identified transdisciplinary research as pluralistic, valuing diversity of perspectives. It is easy enough for a team to agree to such a statement, but what exactly does it mean in practice? As Prager (2021) wrote, how can we construct teams that are purposefully diverse, matching the needs of a particular project, rather than arbitrarily diverse? She suggests distinguishing demographic and cognitive diversity and pursuing both to maximise the benefits of diversity in a team. The core narrative elements of the prevailing discourse thus become a starting point for 'framing conversations' within the team, where the team members decide on their specific values and position – in this case, what diversity is important to them?

Another way to prompt such framing conversations is to develop a shared vision of success for the project. This has been a core practice at ISF for many years, documented by Mitchell et al. (2015, p. 86) in their articulation of the three outcome spaces for transdisciplinary research: (1) an improvement within the 'situation' or field of inquiry; (2) the generation of relevant stocks and flows of knowledge; and (3) mutual and transformational learning by researchers and research participants to increase the likelihood of persistent change. Kligyte et al (2021) built on this work to propose four partnership outcome spaces: situation,

knowledge, learning and relationships. Developing a vision of desired outcomes in each of these spaces is another way to build a shared storyline for the team. Developing a shared 'theory of change' or 'transformation knowledge' (Buser & Schneider, 2021) for moving from the present to the desired future potentially has similar benefits (Lam et al., 2020), although Deutsch (2021) cautions that it can be challenging to generate shared commitment to such a theory in practice. Nevertheless, engaging in a team discussion about how the project will create desired changes is far better than naively assuming that the generation of new knowledge alone will somehow change the way that societies collectively respond to sustainability challenges. One way to approach this task is to use common story structures, such as the hero's journey or 'story spine,' to imagine a story of success and the plot for getting there.

In the catchment management project that I have used as an example throughout, we had no shared vision or theory of change to guide our work, leaving us as a team without a problem. While any vision can probably help to build the storyline of a transdisciplinary team, achieving the goal of sustainability transformations requires creative, transformative visions. Many visions reinscribe the present rather than imagining genuinely different futures. Transdisciplinary research teams could benefit from allowing more time for visioning, drawing on established tools from futures studies and using creative practices to imagine transformed futures.

The internal framing processes discussed here are important and necessary but framing also shapes the external positioning and communication of transdisciplinary research. The way the research is framed for other audiences may influence its ability to contribute to sustainability transformations. I will return to this point in the section below on Diffusion of Meanings.

CONSTRUCTING AND PERFORMING MEANINGS COLLABORATIVELY

In the conceptual framework for discursive entrepreneurship, framing is followed by stages of constructing and performing meanings for audiences (Riedy, 2021). This part of the framework is geared towards situations where a discursive entrepreneur is engaging in persuasive communication with an audience, often in one direction. A later stage in the framework brings in the idea of a more collaborative approach. Here, I will combine these

three stages to consider the ways in which transdisciplinary research teams construct and perform meanings collaboratively. This is appropriate because the kind of communication taking place in transdisciplinary teams is inherently collaborative.

If framing is about choosing shared meanings for the team, this stage is about putting them into practice. The relationship between these stages is iterative rather than linear. Framings are constantly tested through practice and revised, and they do not really take hold in people's minds until they are enacted in some way. Common practices for constructing and performing meanings include the construction of boundary objects (Star, 2010), metaphors and visualisations to capture the collective work of the team, storytelling, dialogue, development of rituals and ceremonies (Bammer, 2018) and field trips to give participants direct experience of other thought-styles and life-worlds (Tobias et al., 2018).

In the catchment management project discussed previously, we developed several such practices to enact our meanings. The first was a routine, or ritual, of meeting together every fortnight, to demonstrate our ongoing connection to, and valuing of, the project. This was supported by documenting, as described above, the agreed behaviours we expected at those meetings. Further, the project developed a metaphor of 'lenses' to understand our work together. The core idea was that each participant looked at the world in a different way – through a different lens. By getting a sense of those lenses others were using, and becoming more aware of our own lenses, we could reach a more complete understanding of a research topic. We saw this as necessary to address the complexity of sustainability challenges. Here, the metaphor of a lens is partly standing in for concepts like worldview, or paradigm, or theoretical perspective, or 'thought-style' (Pohl et al., 2021). However, the metaphor had an important practical dimension, encouraging us to continually attempt to take different perspectives on the research challenge at hand. This is an important point – to truly perform meanings, a boundary object, or metaphor or other device should prompt practices that are consistent with those meanings.

Imagery and symbolism can play a crucial role in carrying and enacting meanings for a transdisciplinary team. For example, when introducing concepts of integration, holism or globality (in the sense used in the subtitle of this book), I often refer to the Indian parable of the blind men and the elephant. Each of the blind men feels a part of the elephant and comes to a false conclusion about what they are touching – the trunk becomes a snake, the leg a tree

trunk, the tusk a spear. Only by combining their partial knowledge could they approach the reality of the elephant. I have a cartoon image of an elephant surrounded by blindfolded scientists that I use in presentations to represent this parable. In subsequent work, the idea of integration or holism can easily be evoked for a team – "remember the elephant image?" These images and visualisations become memes within the team, embedding shared meanings in an instantly recognisable shorthand form.

There are countless examples in the literature of boundary objects, metaphors and visual imagery that help teams to construct and perform their meanings together. I have already mentioned the 'three outcome spaces' for transdisciplinary research, which are usually visualised as three overlapping concentric circles (Mitchell et al., 2015). Other examples include the well-known conceptual models of transdisciplinary research processes developed by Jahn et al (2012) and Mauser et al (2013), the 'theory of change' diagrams in Deutsch et al (2021), the 'double diamond' model with its central 'groan zone' that depicts the divergent and convergent stages groups often move through (Kappel, 2019), and the 'gradients of agreement' tool to support team decision-making (Love, 2021). These (and other) models give team-members a shared language and help them to name what is going on at a particular stage in a project.

Something that was very evident to me in my literature review for this chapter was the prevalence of circular or spherical imagery. To give just a few examples: the three outcome spaces are shown as circles (Mitchell et al., 2015); Deutsch et al (2021) depict spheres of control, influence and concern; Moreno-Cely et al (2021) describe a circle of dialogue of wisdom; and Freeth and Caniglia (2019) show comfort, discomfort and learning zones as circles. To give an example of how such imagery can help to enact particular practices, I personally find the imagery of concentric circles valuable when designing governance structures for transdisciplinary research. A simple representation of this governance concept is provided in Figure 13.1. No matter how inclusive and welcoming the invitation to participate in transdisciplinary research, there will inevitably be differences in the degree to which participants are interested and able to participate. A concentric governance structure can recognise this, comprising a Steering Group (inner circle) that is deeply engaged and able to commit time for the research, an Advisory Group (middle circle) that is interested but able to commit less time, and stakeholders (outer circle) that are least able to commit time but important to include. The risk with such a model is that it creates three different group

identities and inhibits interaction, so it is necessary to consciously create what Cundill et al (2015) call 'benches for outsiders', inviting those in outer circles to observe, try and migrate to inner circles.

(Insert Figure 13.1 here)

Figure 13.1. A simple governance structure for transdisciplinary projects.

Proactive diffusion of meanings

The final stage of discursive entrepreneurship that I will discuss here is the diffusion of meanings. In the original definition of discursive entrepreneurship, the focus was on a change agent working to promote their desired meanings in a discursive landscape (Riedy, 2021). To the extent that transdisciplinary research teams are seeking to change the way that knowledge is generated in society, and/or the way that society responds to challenges, that framing is also relevant here. However, the diffusion of meanings within transdisciplinary research teams is also important to consider, given the diversity of participants and their worldviews.

Regardless of how exactly a transdisciplinary research team is structured, it is typical, particularly in larger projects, for sub-teams to form and work on distinct items (Pohl et al., 2021). These sub-teams will start to construct and perform their own meanings in their work together, which need to be communicated back to the larger team if the team is to maintain a shared storyline. Storytelling is a particularly useful practice for doing this as it brings meanings to the fore and stories use a structure that our brains find natural and memorable (Riedy, 2021). The common practice of 'checking in' at the start of a meeting to hear stories about what the various members of a transdisciplinary research team have been working on is one vehicle for such storytelling and can help to maintain a shared team storyline.

For meanings to diffuse throughout the transdisciplinary team, it is crucial to create formal and informal spaces where team members can 'come together in dialogue to share, reflect, critically and constructively question, imagine, challenge, and synthesize their experiences into collective organizational learning' (Riedy et al., 2018, p. 41). These spaces can be thought of as 'crossroads', where team members who have been on individual learning

journeys, generating new meanings along the way, share those meanings with others in the team (Riedy et al., 2018). Lawrence (2021), drawing on Routledge (2003), refers to such spaces as 'convergence spaces'. In the context of a transdisciplinary research team, these crossroads or convergence spaces can include regular 'whole team' meetings, check in spaces within those meetings, and informal conversations between sub-team members. Governance practices such as sociocracy can provide a supportive structure for diffusion of meanings by ensuring that sub-teams (circles in sociocracy) share at least two members with a parent circle (Rau, 2021). This ensures there is a conduit for information to flow.

As noted above, transdisciplinary research teams will also want to share the meanings they have generated in their team with a larger audience. In the outcome spaces framework for transdisciplinary research, one of the three desired outcomes is 'the generation of relevant stocks and flows of knowledge, including scholarly knowledge and other societal knowledge forms, and making those insights accessible and meaningful to researchers, participants and beneficiaries' (Mitchell et al., 2015, p. 86). While it is obvious that teams will want to communicate their research findings in a way that they hope will have impact, I believe there is also value in sharing narrative elements emerging from the research. There is some support for this idea in the literature. Wuelser et al (2021) identify 'framings' as one of seven transferable forms of knowledge generated in transdisciplinary research, and several of the others – such as transdisciplinary principles and approaches – are essentially codifying meanings that the team has generated about what transdisciplinary research is for them.

Here, the team has an opportunity to complete the circle, returning to their original review of the discursive landscape and deciding what new or altered meanings they wish to promote. If they feel that existing discourses of transdisciplinary research or knowledge production are not adequate to deliver sustainability transformations, they can promote new meanings and practices. The Integration and Implementation Insights blog is a great example of transdisciplinary researchers doing exactly this, promoting new meanings about transdisciplinary research that may, in time, become dominant.

In addition to overt advocacy of new meanings, transdisciplinary teams can contribute to discursive shifts by being very conscious about language use. From the perspective of achieving sustainability transformations, there are several such narrative moves that I see as crucial. First, transdisciplinary research teams can promote discourses of transdisciplinary

research that are consistent with deliberate transformation. For example, it would be helpful to leave behind the language of 'problems to be solved' in favour of 'situations to be transformed'. In another example, recent scholarship has begun to question the prevailing notion of transdisciplinary integration as consensus, opening up the possibility of other approaches to integration (Pohl et al., 2021), and perhaps even different objectives for transdisciplinary research. Scholars of decolonialism point out that integration is typically done in ways that marginalise Southern and Indigenous knowledge systems, and a better goal might be a kind of creative agonism, accepting ongoing conflict and tension between plural perspectives (Chilisa, 2017; Escobar, 2018) and paying attention to discomfort and uncertainty as a source of learning (Freeth & Caniglia, 2019; Moreno-Cely et al., 2021).

Second, there are opportunities to choose language that broadens discourse coalitions aiming to transform knowledge practices. The emergence of 'co-production of knowledge' as an umbrella term that embraces diverse practices, such as transdisciplinary research and participatory action research, is just such an opportunity. Such broadening is necessary because established knowledge production practices are entrenched, hegemonic and defended by dominant neoliberal institutions. Powerful discursive coalitions will be needed to overturn such a hegemony.

Finally, and connected to this last point, transdisciplinary research teams can choose language that helps to build alternatives to the dominant discourse of neoliberal capitalism. Transformations towards sustainability will need to be supported by new narratives. Terms such as wellbeing, regeneration and partnership, among many others, are emerging as key meanings in transformative movements (Riedy, 2020). Transdisciplinary research teams can choose language that consciously reinforces transformative discourses.

CONCLUSION: PRACTICES FOR BUILDING TRANSDICIPLINARY DISCOURSE COALITIONS

I have made the case that transdisciplinary research teams can be understood as discourse coalitions that need to build a shared storyline or narrative to work together effectively. This framing opens conversations about the meanings that team members carry into a research project, their practices for finding common narrative ground, and how they engage with the

broader discursive landscape of knowledge production and transdisciplinary research. Further, it draws attention to the possibility that certain storylines are more consistent with a goal of achieving sustainability transformations.

A key conclusion is that it is valuable for transdisciplinary research teams to openly discuss the meanings that they bring to their work and how they want to frame their project, right from the start. Thinking about the storyline that will hold together a discourse coalition, working to strengthen commitment to that storyline, and considering the strategic opportunities that a storyline offers to pursue sustainability transformations is important. In other words, transdisciplinary team members can act as discursive entrepreneurs, creating, performing, and transforming memes, stories, narratives, and discourses to promote a discursive landscape that can better support co-production of knowledge for sustainability transformations.

It is perhaps not reasonable to expect all members of transdisciplinary teams to have the skills and experience to enact these practices without support. This points to the need for skilled facilitators that can create spaces where these practices are nurtured and supported. (This need for 'scaffolding' is explained in chapter 1).

The chapter has explored specific practices that might help transdisciplinary research teams to achieve their discursive goals and more consciously support co-production of knowledge for sustainability transformations. These include:

1. **Survey the discursive landscape**: Use the literature review that is the first task in most research projects as an opportunity for discourse analysis, identifying prevailing discourses of co-production, transdisciplinary research, and the topic at hand. It may help to write a storyline or list of narrative statements that captures each identified discourse.
2. **Reflect on the team relationship with the discursive landscape**: Use the discourse analysis to explore the thought-styles of team members and initiate dialogue about discursive assumptions, the positionality of the team and any discomfort with prevailing discourses that may point to innovative practices. Be aware of where the team is located in the geography of transdisciplinary discourse.

3. **Document the team storyline**: Rather than assuming team members bring the same meanings to the project, write a narrative together that makes the project storyline and core meanings explicit, ensuring all have opportunities to contribute equally. The storyline should identify the team's relationship to prevalent transdisciplinary discourses and narrative elements. It should include a vision of successful transformation and a logic for how the project can contribute to that vision. This logic should not naively assume that generating new knowledge alone is sufficient to change the way that societies collectively respond to sustainability challenges.

4. **Create memes that succinctly capture aspects of the team storyline**: As the work progresses, look out for images, visualisations, metaphors, and phrases that resonate with the team and capture shared meanings. Use these as boundary objects.

5. **Develop practices that are consistent with the team storyline**: These might include things as mundane as a regular meeting time, but can also include check-in processes, rituals or ceremonies, decision-making practices, field visits, and even the choice of governance structure for a project. If explicitly connected with the team storyline, these practices will help to enact shared meanings.

6. **Create team storytelling opportunities**: Encourage team members to share stories about what they have been working on, what they have learned, and what they are wondering about. This is important to maintain a shared storyline while individual storylines continue to develop.

7. **Share new stories and meanings alongside more conventional research findings**: The continued development of transdisciplinary research as an effective way of supporting sustainability transformations requires transformative of narratives about knowledge production, so there is value in teams sharing their narrative innovations alongside other research outcomes.

8. **Look for strategic opportunities to broaden discourse coalitions**: Consciously adopt language (e.g. co-production of knowledge, wellbeing, regeneration, transformation) that builds bridges with other teams working towards sustainability transformations, as a basis for creating more powerful discourse coalitions.

Using these practices, transdisciplinary teams can act as discursive entrepreneurs to support transformation of knowledge production discourses, which in turn will contribute towards sustainability transformations.

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Abstract

Sustainability challenges demand a purposive approach to societal transformation. Methods for co-production of knowledge, including transdisciplinary research, have emerged as key components of a transformative response. This chapter contends that there is value in framing transdisciplinary research teams as discourse coalitions, tasked with developing a shared storyline or narrative to work together effectively. This framing opens conversations about the meanings that team members carry into a research project, their practices for finding common narrative ground, and how they engage with the broader discursive landscape of knowledge production and transdisciplinary research. Further, teams can make narrative choices that are more or less strategic for pursuing sustainability transformations. The chapter explores eight practices that allow transdisciplinary team members to act as discursive entrepreneurs, creating, performing, and transforming memes, stories, narratives, and discourses to promote a discursive landscape that can better support co-production of knowledge for sustainability transformations. These practices include: surveying the discursive landscape; reflecting on the team relationship with that landscape; documenting the team storyline; creating memes that succinctly capture this storyline and practices consistent with it; creating team storytelling opportunities; sharing new stories and meanings as research products; and seeking strategic opportunities to broaden discourse coalitions.

Keywords: co-production of knowledge; transdisciplinary research; discourse coalitions; discursive entrepreneurship; sustainability transformations; narratives

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(8950 words, 1 figure)

FIGURE

Figure 13.1

Stakeholders / participants

Advisory Group

Steering Group

Increasing engagement and frequency of participation