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EDITORIAL

How research on communication can help to understand the management of natural resources and sustainability transformations: practices, concerns and new perspectives on environmental communication

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Communication is an integral part of natural resource management and sustainability transformations, and questions on how communication helps or hinders the development of more sustainable relationships between people and their environments have become increasingly urgent. This special issue directs our attention to the processes and outcomes of such communication and explores what a focus on communication makes visible and accessible for practical as well as academic analysis. The twelve articles collected in this issue examine a wide range of contexts and practices of environmental communication, here understood as the joint construction of meaning related to environmental and sustainability issues. In this editorial, we propose five conceptual lenses that, as we argue, are crucial for an in-depth engagement with environmental communication. Together, these provide us with an understanding of communication as arising from manifold interactions that are shaped by and shaping disagreement, power relations and, more generally, the interplay between structure and agency. We examine the contributions to this special issue in light of these conceptual lenses and highlight how the twelve articles help us to understand the role of meaning-making in environmental management and sustainability transformations. We conclude with suggestions for future work, identifying spaces for further conceptual development and empirical scrutiny as well as scope for new ideas on environmental communication to gain in importance and influence.

Keywords: environmental governance; climate communication; sustainability communication; deliberation; facilitation

1. Why focus on environmental communication?

In recent years, communication on environmental and sustainability issues has moved into the spotlight of concern among not only scientists, but also practitioners and policymakers, and questions on how communication helps or hinders the development of a more sustainable relationship with our environment have become increasingly urgent.

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Communication is an integral part of much management of natural resources and sustainability transformations, often with underlying assumptions that better communication leads to more socially accepted outcomes.

However, in many environmental management¹ contexts, communication still tends to be understood as the transmission of information and knowledge, and regarded as a solution to problems that are interpreted as originating in information deficits (Anderson 2015; Seethaler *et al.* 2019). Consequently, communication is then evaluated from an instrumental standpoint, i.e. in terms of its effectiveness in spreading the information in question. This focus on instrumental effectiveness obscures the manifold ways in which communication interacts with other social dimensions of sustainability and environmental issues, such as the role of relationships, legitimacy and trust (Macnamara 2018). Conversely, considering these dimensions without considering the processes of meaning-making that they arise from and give rise to means neglecting a large part of the social interactions that constitute today's sustainability and environmental issues.

In this special issue, we, therefore, use a broader concept of environmental communication as a lens to look at the management of natural resources and sustainability transformations. We define environmental communication as the joint construction of meaning through the social negotiation of knowledge, emotions, values, relationships and embodied experiences related to environmental and sustainability issues. The emphasis on joint construction and social negotiation implies a focus on the *interaction* between participants in communication (van Ruler 2018). Such interaction in the construction of meaning does not need to be based in agreement and consensus – to the contrary, as we will elaborate (Section 2.4), it might be constituted by disagreement and contradiction. Interaction might be direct as well as indirect (van Ruler 2018): It could be mediated or unmediated; and interactions might consist in actors *explicitly* referring to others as well as in meaning being constructed in *implicit* reference to existing norms, discourses and other forms of ideas and practices.

This special issue thus directs our attention to the processes and outcomes of meaning-making in contexts of natural resource management and sustainability transformations, and explores what such a focus on environmental communication makes visible and accessible for practical as well as academic analysis. Thereby, our special issue aims to help work towards a multi-faceted understanding of environmental communication, and to explore and exemplify the contributions that research building on such a broader understanding of environmental communication can make to interdisciplinary science and practice concerned with natural resource management and sustainability transformations. In the remainder of this editorial, we first introduce five conceptual considerations that we argue are crucial for an in-depth engagement with environmental communication (Section 2), to then explore these considerations in light of the contributions made by the articles in the special issue (Section 3). We conclude with suggestions for future research in this field (Section 4).

¹In this editorial, we use the terms 'environmental' and 'sustainability' as labels for a range of complex clusters of issues related to human-nature relationships, climate change, natural resources and other challenges that have environmental dimensions. 'Environmental communication' denotes an established field of research (Katz-Kimchi and Goodwin 2015; Comfort and Park 2018) that does not only engage with environmental questions but also with wider sustainability concerns. By 'management', we refer here also to the wider governance of environmental and sustainability issues.

2. Five conceptual lenses for an in-depth engagement with environmental communication

In this editorial, we highlight five key ideas about meaning-making, employing these as conceptual lenses to sketch out, delineate and concretise a broad yet coherent understanding of environmental communication. Together, these lenses make up a research agenda that draws our attention to the many different facets of environmental communication.

2.1. A broad variety of actors, sites and modes interact and shape environmental communication in often unexpected ways

Our first conceptual lens concerns the multimodal and multilateral nature of communication: communication happens through many different channels and ways of constructing meaning in interaction and has many different participants. *Multimodality* implies that meaning-making involves more than language shared through talk and texts. It might include visual impressions and representations (Hansen and Machin 2013), gestures, body posture and gaze (Mondada 2019), prosody and other auditory sensations – and in some constellations even taste (Wiggins and Keevallik 2021) or touch. The idea of *multilaterality* invites us to broaden our analytical gaze on the participants in environmental communication to consider a wider range of interactions – *within* the individual participant, *between* them, but also between human and non-human participants. At a basic level, this could mean going beyond the conceptualisation of media users as passive recipients and looking at the ways in which they interact with these media and with each other, thereby shaping meaning (see e.g. Noy 2004; van Ruler and Verčič 2005). It could also involve the analysis of environmental communication in an arena with multiple (rather than just two) and diverse actors (Hansen 2011; van Ruler 2018) – which might include non-human living (Kohn 2013) and non-living participants such as information infrastructure and algorithms (Haider and Rödl 2023). Importantly, by interacting, these diverse participants and modes create sometimes unexpected outcomes of communication processes. And while some of these communication modes and participants are apparent and visible, others are hidden yet still influence both communication process and outcome. An approach to environmental communication that facilitates attention to these manifold participants and modes helps to make those hidden influences visible.

2.2. Environmental communication as both instrumental and constitutive

Communication can be examined from both instrumental and constitutive perspectives (Pezzullo and Cox 2018). To begin with, we argue that it is fruitful to consider different dimensions of instrumentality: in many contexts, environmental communication is practiced instrumentally, i.e. with a purpose (Pezzullo and Cox 2018; van Ruler 2018), for example, to change people's understanding of, relationships with and behaviours related to environmental issues. But while most acts of communication have a purpose and are thus instrumental, this purpose is not necessarily connected to environmental issues; the purpose can also be social (e.g. to assert one's identity, or construct relationships) or of a different character. We want to highlight here that meanings related to environmental phenomena can also emerge from interactions with primarily social or other (i.e. not necessarily environmental) instrumentality – imagine two neighbours chatting while waiting in a queue in front of the local shop about their newly acquired

electric cars, or friends in the pub complaining about their government's most recent climate political escapades. While the main purpose of these conversations might have been to maintain relations, confirm one's social identity or simply pass time in an entertaining way, they also contribute to the speakers' development of environmental views.

Importantly, we can now look at these communication acts and processes from two different analytical perspectives. First, we can analyse these from an instrumental standpoint: did the speakers manage to get their messages across (regardless of whether these messages focused on environmental or other issues, e.g. related to social identity and group belonging)? Did the audience act as hoped for? Second, and this is crucial for the understanding of environmental communication proposed in this special issue, we can also explore the ways in which communication *constitutes realities* (Pezzullo and Cox 2018). Such a constitutive perspective considers how the joint construction of meaning creates, shapes and changes the worlds we live in. It reaches beyond an evaluation of the effectiveness of communication in relation to its purpose and intentions and examines both the intended and unintended workings of communication.

2.3. *Communication as interactions between structure and agency*

Third, the interplay of structure and agency, i.e. between relatively persistent social rules and systems and the ability of individuals and groups to act, is important to our examination of the joint construction of meaning. It is also crucial for our analysis of how communication relates to societal change. For example, discourses related to natural resource management and sustainability transformations imply ideas related to individuals' roles, responsibilities and agency (or lack thereof); these ideas can have prescriptive, normative effects, motivating people to act – or to resign from active engagement (Carvalho, van Wessel, and Maesele 2017). The joint construction of meaning takes place within the framework of social structures – ideas, norms, infrastructures and procedures – and may reproduce these, but participants' agency can also lead to a change of such ideas, norms, infrastructures and procedures. An in-depth understanding of change – as well as of the maintenance of the status quo – as created through the interplay between structure and agency in communication is thus essential for anyone interested in sustainability transformations.

2.4. *Environmental communication as struggles over meaning, characterised by disagreement and conflict*

In many contexts of environmental communication practice and research, agreement and consensus are regarded as the ideal (Ganesh and Zoller 2012; Hallgren, Bergeå, and Westberg 2018), and are sometimes even taken as a given, e.g. by assuming agreement over what is 'pro-environmental' (Lange and Dewitte 2019). However, disagreement and struggle over meaning are constitutive of society, involved in the production of social institutions, and have an important function in democratic processes: Disagreement alerts society to the political, indicating where decisions about stakes and rights need to be made, knowledge needs to be developed and consequences need to be assessed and compared. While consensus as a default risks the exclusion of knowledge and identities (Mouffe 2005), constructive disagreement is communicatively

difficult to perform (Hallgren, Bergeå, and Westberg 2018). We highlight the value of examining disagreement, conflict and struggles over meaning, as well as the interactive procedures through which these are performed. Such struggles can be seen to include both discursive and material elements. While studies of environmental communication tend to foreground the discursive, it can be very fruitful to also pay attention to interactions between the discursive and the material. Carpentier, Doudaki, and Rozsypal Pajeroová (2021) examined, for example, how material environmental change arising from the mining of iron ore interacted with media representations of this change and the management approaches to address it. Such perspectives help to conceptualise conflicts as composed of a network of discursive and material interactions – again highlighting the multimodal and multilateral nature of environmental communication.

2.5. Power as inherent to environmental communication

Finally, and closely connected to this, power relationships, albeit a crucial component in many theorisations of communication such as discourse theory (van Brussel, Carpentier, and de Cleen 2019), tend to be underexamined in much empirical environmental communication research (Hansen 2011). Similarly, the natural resource management literature, especially where it focuses on collaborative management, recognises power as an important factor, yet only rarely engages explicitly with it (Avelino and Rotmans 2011; Suškevičs *et al.* 2018). Power relations are inherent to conceptions of communication, collaboration, disagreement and consensus as such. For example, where disagreement is conceptualised as a problem to be solved, the power relations implicit to collaborative arrangements are constituted. In applied contexts such as urban and environmental planning, communicative ideals of an egalitarian, level playing field and a focus on agreement and consensus often prevent thorough engagement with the different forms that power can take (Westin 2022). Starting from the assumption that power is an integral part of meaning-making processes in environmental management and sustainability transformations, we argue that power relationships and power dynamics need to receive more attention in empirical research on these issues.

2.6. Five perspectives for a better understanding of environmental communication

In this special issue, we explore the implications of an understanding of environmental communication that reflects these five considerations. While each of these are not novel, as such, we argue that together, they encourage us to consider aspects of communication that are often neglected and allow for in-depth insight into the processes and outcomes of meaning-making that underpin and shape natural resource management and sustainability transformations. We believe that this special issue, with its combination of integrative conceptual thought and empirical applications of high societal urgency and relevance, is interesting for a range of readers, including communication researchers, environmental social scientists, environmental managers and interdisciplinary scientists. The approach taken in this special issue facilitates a critical examination of the assumptions and expectations placed on communication in environmental management, and helps to identify aspects of communication processes that might – in stark contrast to the actors' intentions – decrease social acceptance and overall sustainability, instead of increasing it. For example, the neglect of disagreement

in dialogue processes might eventually lead to engrained conflict and distrust in natural management institutions (Westberg, Bergeå, and Hallgren 2024). Using visualisations in corporate sustainability reporting might suppress, rather than foster, genuine engagement with such sustainability issues (Ganesh *et al.* 2024). An unreflected use of story-telling for sustainability – a multifaceted communication approach that has recently become very popular – might, while intending to challenge some social conventions, (re-)produce others (Joosse *et al.* 2024). Our special issue explores ways to address the resulting challenges and offers researchers and practitioners in environmental planning and management new, reflective perspectives on environmental communication theory and practice.

3. Seeing environmental communication through the five conceptual lenses: contributions of the special issue

The special issue draws on multi- and transdisciplinary work in and around the international research programme MISTRA Environmental Communication but also includes other contributions. Here, we summarise and explore the insights developed by these twelve articles in relation to the five perspectives outlined above (Section 2). While we present these insights here in separate sections, each focusing on an exploration of the articles from one of the conceptual perspectives, they can be seen as analytically strongly interlinked. For example, analytical attention to multimodality and multilaterality may help to reveal how power is constituted and reproduced in different forms of communication, and this constitution of power is not necessarily connected to the instrumental purposes that led to the communication situation in the first place, as illustrated by e.g. Ganesh *et al.* (2024) but also Senecah (2024). Actors involved in environmental management may have the agency to disagree and exercise power towards each other in discursive and material struggles, but are at the same time guided by the norms, procedures and discourse that structure the conditions for communication. These conditions can – as shown by e.g. Kanarp and Westberg (2024), Fischer *et al.* (2024) and Åhlvik *et al.* (2024) – develop their own meanings, leading to unintended outcomes. We suggest that it can be helpful for both researchers and practitioners to consider environmental communication, its conditions and consequences using the proposed conceptual perspectives as relatively focused analytical lenses – and then to make these perspectives, and the insights they facilitate, speak to each other. This special issue constitutes an instance of such a dialogue between different interpretations of environmental communication, and Figure 1 offers a visual exemplification and overview of the twelve articles' contributions in relation to the five conceptual perspectives, as well as the ways in which these can be seen as connected to each other.

3.1. Communication is multilateral and multimodal, and this matters

The articles in this special issue illustrate the multilateral nature of, and the diversity of, participants in environmental communication. For example, Rödl, Haider, and Joosse (2024) describe how social media users and multi-sided platforms interact with their human and non-human environments, reproducing ideas about and practices of human consumption of 'beautiful' nature, whereas Kanarp and Westberg (2024) follow the interactions between staff members of Swedish governmental organisations in a

environmental issues – and in which they attempt to make these issues governable (Whitman and Holmgren 2024; Åhlvik *et al.* 2024; Joosse *et al.* 2024; Fischer *et al.* 2024). Some of the articles go beyond text and talk by examining visual representations and their role in sustainability governance: Ganesh *et al.* (2024) investigate how the communicative practice of visualisation in sustainability reporting, by conforming to the norms of visual managerialism such as logic, simplicity and clarity, constructs environmental problems as solvable and controllable. Others explore the entanglements and interactions between different modes of communication. For example, Rödl, Haider, and Joosse (2024) highlight how not only visual representations of the self and nature (in the form of nature selfies), but also attention on social media (measured e.g. through views, likes and shares) are modes of communication and contribute to the construction of human/nature relationships. Milstein *et al.* (2024) argue that university food gardens as such can be seen as a mode of communication, considering that their existence as well as the activities around them work towards the creation of meaning around ecocentric identities. Westberg, Bergeå, and Hallgren (2024) suggest that also *not* preparing for a meeting and taking along additional, not officially invited participants to a formal meeting are communicative acts that, together with language-based modes of communication, contribute to the creation of meaning – in this case the expression of opposition and resistance to a natural resource management process instigated by the local authorities. Finally, Senecah (2024) highlights the multidimensionality of communication as involving not only the talk occurring and views expressed in a dialogue meeting, but also process design and relationships. Together, the papers in this special issue show how different forms and modes of communication have implications for both communication processes and outcomes – in both instrumental and constitutive terms. These will be further explored in the next section.

3.2. Examining instrumental practices from a constitutive perspective

The forms and situations of environmental communication addressed in this special issue cover a wide range of instrumental logics. These can be organised on a spectrum from firmly prescriptive formats of communication, where much of the meaning shared appears to be pre-defined within a relatively narrow space, to more open formats of communication, where meanings and content are developed during the process. For example, Åhlvik *et al.* (2024) report on so-called inspirational meetings for business and other organisational actors interested in a circular economy. The authors demonstrate how communicative norms resulted in the dominance of hopeful and optimistic statements about the circular economy as an important part of the sustainability transition. Doubts as well as negative views were, in these formats, only very rarely expressed, and immediately qualified and mellowed down. The authors conclude that such ‘hope norms’ led to positive experiences of the meetings and a feeling of solidarity between the participants, but at the same time inhibited a constructive engagement with the challenges of circular economy.

In their analysis of different frames for ‘storytelling for sustainability’, Joosse *et al.* (2024) examine the implications of different degrees of openness in storytelling. They contrast storytelling for persuasion – a relatively closed, prescriptive format of communication that aims to convey a predefined message to the listener in a compelling and engaging way – with storytelling for emancipation and storytelling for

collaboration, which encourage the listener to form their own views. All three forms of storytelling are overtly instrumental, albeit with very different purposes in mind.

Engaging with the diversity of communication formats in yet another way, Westberg, Bergeå, and Hallgren (2024) analyse how a prescribed procedure for a participatory process, with the instrumental purpose to help improve management of carnivores preying on domestic reindeer played out in very different ways when implemented in three places in northern Sweden. Although in all three cases the same process leader applied the same procedural framework, the openness of the format allowed for three different practices to evolve from the interactions between the participants and the process leader.

Much like Westberg, Bergeå, and Hallgren (2024), Joosse *et al.* (2024) and Åhlvik *et al.* (2024) many papers in this special issue start from a focus on the instrumentality of a communication practice – usually a practice with the ambition to improve environmental planning and management. However, rather than evaluating the effectiveness of these practices, they unpack them with the help of communication-focused concepts and theories and examine their wider constitutive – often unintended – effects. For example, Fischer *et al.* (2024) examine parliamentary debates and policy documents in the Swedish discussion on a just transition. They find that the use of justice-related arguments was either superficial and thus inconsequential, or led the participants into a discursive competition that established the idea of transition policies as generally worsening the status quo for individual citizens. This rendered a constructive engagement with justice in the context of transition governance politically unacceptable, thereby – and paradoxically – hindering the development of just transition policies. In a similar vein, Kanarp and Westberg (2024) analyse Swedish authorities' practices to coordinate adaptation to climate change. They examine how communication routines that were meaningful within the logic of the practice – characterised by efficiency, incremental progress and the demonstration of action – resulted in the stifling of initiatives that might have resulted in more fundamental change conducive to the overarching goals of the practice, namely to support Swedish municipalities in their adaptation to climate change. In both studies (Fischer *et al.* (2024); Kanarp and Westberg (2024)), communication practices thus did not only fall short of their own instrumental ambitions, but also contributed to the constitution of wider ideas and understandings – such as justice being about the safeguarding of the status quo – that, in unexpected and sometimes paradoxical ways, made changes in environmental policy and management difficult. By doing so, the contributions to this special issue showcase the value of a critical perspective on both instrumental and constitutive aspects of environmental communication.

3.3. Understanding change: agency and the inertia of communicative structures

Most, if not all, articles in this special issue describe environmental communication as emerging from the interplay between structure – norms, institutional logics and procedures, technological affordances – and agency. In Ganesh *et al.*'s (2024) analysis of how visual managerialism shapes sustainability reporting in the Swedish Global Compact, the focus lies firmly on the structuring role of technocratic solutionist ways of thinking about environmental management, but the authors also identify alternative approaches to visualisation, thereby indicating possible spaces for agency. Along similar lines, Åhlvik *et al.* (2024), Rödl, Haider, and Joosse (2024), as well as Kanarp and Westberg (2024) emphasise the role of communicative expectations and norms.

However, they also highlight the potential for agents to breach these norms: Kanarp and Westberg (2024) and Åhlvik *et al.* (2024) describe how smaller breaches of expectations and communicative routines, for example, the expression of scepticism and doubts in so-called ‘inspirational meetings’ on the circular economy (Åhlvik *et al.* 2024), are being glossed over, softened or dissipated rather than taken seriously and acted upon. The communicative norms are thus maintained – through the interaction between discussion participants. In the case of Rödl, Haider, and Joosse’s (2024) ‘ugly nature selfies’ – a small experiment playing with expectations around selfies taken in nature – the agents’ deliberate subversion of communicative norms showed that the resulting non-normal communication artefacts were indeed experienced as confusing and their meaning as ambiguous and unstable, even by the researchers themselves who were prepared to deal with such non-normal artefacts. In Westberg, Bergeå, and Hallgren’s (2024) analysis of three participatory processes related to carnivore-reindeer questions, all of them based on the same institutional and procedural structures and involving the same process leader, the agency of this process leader in interplay with the participants’ agency allowed for the emergence of three very different practices that transcended the structural framework. However, the authors also show how the absence of feedback from these divergences to the structure (e.g. through a reformulation of the formal objective of the process) led to outcomes that the participants experienced as neither positive nor constructive. Together, these articles highlight the inertia of the structures that socially organise environmental communication, and the insufficiency of single breaching acts where structures are seen in need of change.

3.4. The constructive potential of disagreement and conflict

While all the contributions to this special issue recognise communication over environmental and sustainability issues as a struggle over meaning, some of the articles explicitly engage with the performance of disagreement (such as the above mentioned Åhlvik *et al.* 2024; Kanarp and Westberg 2024; Westberg, Bergeå, and Hallgren 2024) and the role of conflict in environmental communication. Some contributions diagnose how disagreement and tensions manifest themselves in empirical contexts, leading to conclusions that suggest a constructive way forward. In their argumentative discourse analysis of debates over justice in transition governance, for example, Fischer *et al.* (2024) trace the discursive tug-o-war-like struggles over the question of which policies count as just and, conversely, unjust. Westin, Montgomerie, and Hallgren (2024) illustrate the complex negotiations of facilitators’ authority in collaborative forest governance that emerge from the interactions between facilitators, participants and their organisations. Milstein *et al.* (2024) interpret university food gardens as material as well as symbolic contestations of ‘business as usual’. They describe the manifold, often institutionalised, tensions that the food gardens they studied in the US and Australia were implicated in, and how these tensions could, through perseverance and collaboration, be addressed and turned into opportunities for learning and change.

Bussey *et al.* (2024) are even more explicit in their proposal for new ways of engaging with and learning from disagreement. They explore the possibilities for convergence – as opposed to consensus or agreement – in co-creation labs as safe spaces that facilitate working through diverse views and disagreements to allow new understandings to emerge. Through both the examination of how disagreement is performed in environmental communication practice and how this disagreement could be used

productively, as well as the suggestion of new ways to deal with disagreement, the special issue thus exemplifies how a critical engagement with communication in conflict-laden contexts can help to make change-oriented communication practice more constructive.

3.5. *The hidden workings of power in environmental communication*

Across this special issue, a wide range of different forms of power in environmental communication are examined. Whitman and Holmgren (2024), for example, show how academic discourses structure problem representations in wildfire policies and thus highlight the discursive aspects of power. Two of the articles suggest communication spaces and approaches that aim to strengthen the power of their participants: Bussey *et al.* (2024) discuss how power relations in knowledge production can be reconstructed through reinterpreting the meaning and procedure of ‘the lab’: away from the well-known closed and exclusive knowledge production sites, towards inclusive and creative spaces in which participants from different contexts can co-create inquiries and knowledge. Senecah’s (2024) account of access, civic standing and influence (the ‘Trinity of Voice’) as crucial ingredients in participatory processes in environmental planning and management engages with power both explicitly – by emphasising the importance of the participants’ influence and efficacy in terms of the process outcomes for their trust in the process – and implicitly – as in the hands of the process designers who have the power to provide participants with access, civic standing and influence.

Finally, research in this special issue also highlights ‘hidden’ or implicit power relations in communication situations, arguing for a more power-aware engagement with environmental communication. Westin, Montgomerie, and Hallgren’s (2024) analysis of process facilitation in collaborative forest governance departs from the observation that facilitators of such participatory processes tend to be portrayed as neutral power-sharers, obscuring their (unavoidable) use of power. The authors show how this power was practiced in a case of forest governance in Sweden, identifying a constant movement between the enactment of power through argumentation and authority that was adaptive to the demands and reactions of the process participants. Joosse *et al.* (2024) direct our attention to a set of practices that, at first sight, seem neutral and free of power-play: ‘Storytelling for sustainability’. Each of these practices can be seen to (re)produce specific power relations based on ideas about who defines what is sustainable, and who is supposed to listen and change. Each of the three frames of storytelling, persuasion, emancipation and collaboration, assume and thereby structure power relations between the participants in the storytelling situation in different ways. Based on their analysis, the authors argue that while power is productive and inherent to any change process, it is in constant need of critical inspection, also, or especially, in times of planetary crisis.

4. Conclusions: future research into communication in natural resource management and sustainability transformations?

Our special issue shows how a broad, constitutive and conflict-sensitive perspective on environmental communication enhances our understanding of the practice of natural resource management and sustainability transformations. It also highlights how communication, understood as the joint construction of meaning, is ubiquitous and,

whether directly or indirectly, an integral part of environmental management and sustainability work at all levels and contexts – from food gardens in educational settings to participatory processes in natural resource governance, from parliamentary debate to social media.

The five perspectives on environmental communication that we outlined (Section 2) and used to interrogate and organise the findings emerging from this article collection (Section 3) can be understood as an invitation to look at communication processes and outcomes from different standpoints – standpoints that as dynamic points of engagement will, as we argue, in many situations lead to novel, important and often unexpected insights. Our own experience writing and working with a visualisation (Figure 1) of this editorial has helped us to also see our own work from new angles. We find that to understand both agency and the workings of structure in communication (Section 2.3), we need research that looks at direct, explicit interaction in the joint construction of meaning as well as research examining more indirect, implicit interactions (Section 1). This, in turn, underscores once more the importance of considering multilaterality (Section 2.1), including the hidden and less obvious participants in, and structuring elements of, communication, and offers insight into the role of power (Section 2.5). Power in environmental communication contexts can be regarded from the vantage points of both agency (as, for example, the power performed by the process leaders in Westin, Hallgren and Montgomerie 2024) and structure (as the workings of power through the discourses and procedures captured by e.g. Whitman and Holmgren 2024 or Westberg, Bergeå, and Hallgren 2024). We argue that such moving between perspectives contributes substantially to our capacity to understand socio-environmental change.

Our overview of the special issue also points at areas for further work – both by highlighting spaces and a need for further conceptual development and empirical scrutiny in relation to the five perspectives on environmental communication, and by identifying scope for new ideas on communication to gain in importance and influence. Two of these areas are sketched out here:

First, we observed that most of the twelve papers in this special issue focus on communication with a sustainability- or environment-related instrumental purpose (Section 3.2), which might be representative of much environmental communication research, not least of those strands that centre on media and strategic communication as reviewed e.g. by Comfort and Park (2018). This might indicate a relative lack of studies that examine environmental communication *without* such an explicitly sustainability- or environment-related purpose (Section 2.2), for example, research on everyday talk that shapes people's understandings of environmental issues although it did not aim to do so, including naturally occurring meaning-making at the family dinner table, between neighbours or friends. However, such processes and their outcomes might be a crucial puzzle piece, especially for our understanding of disagreement and conflict – and related to this, the maintenance of the status quo vs the generation of change – in natural resource management and sustainability transformations.

Second, while the articles in this collection engage with emerging perspectives and conceptual issues such as more-than-human participants in communication, the role of the material, and communication beyond talk and text, we suggest that researchers' analytical repertoire and terminology would benefit from adaptation and broadening to allow for a more nuanced engagement with these. Such concepts and approaches exist in other social scientific fields and disciplines. Bringing these into communication

research, and further developing our understanding of the *interactions* between the discursive and the material, as well as between other well-established and emerging conceptualisations of communication, would allow for fruitful encounters and could strengthen environmental communication research and practice even further.

This special issue is an invitation to engage explicitly with communication in environmental management and sustainability transformations to better understand how the joint construction of meaning in all its dimensions interacts with other social processes that constitute our complex world – an engagement that constantly needs to be developed.

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