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# Visualising Epistemological Perspectives

## *Using Symbols and Metaphors to Research Sustainability*

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### Abstract

This study articulates the epistemological underpinnings of a web banner's visual elements featured on the webpage of the research centre, Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures (KINDknow). Through interdisciplinary work within a diverse framework including dialogical, cultural, historical, systemic, anthropological and more-than-human epistemological approaches, the research team has consolidated a common sphere of member-identifying visual representations. This work tells the story of how the research team became 'ocular' in developing a web banner and establishing a new research centre. The aim of the narrative is to demonstrate how visual forms, elements, symbols and metaphors can be productive in research teamwork for articulating epistemological commonplaces and commonalities. The article shows the text and visual elements used. The video attached outlines one of the metaphors that served as a productive thinking tool in the process.

### Keywords

epistemology – metaphor – web-banner – becoming – visual metaphor



**FEATURE** This article is based on the film 'Visualising Epistemological Perspectives', which can be viewed [here](#).



**FIGURE 1** KINDknow web banner

## 1 Introduction

This article articulates the epistemological underpinnings of a web banner's visual elements, featured on the webpage of the research centre Kindergarten Knowledge Centre for Systemic Research on Diversity and Sustainable Futures (KINDknow). Funded by Norway's research council for the years 2018–2023, the centre is part of the country's efforts at strengthening early childhood educational research domestically and internationally. This work explains how the research team, behind this new research centre, became 'ocular' while developing a web banner for its webpage. Through interdisciplinary work within a diverse framework, which included dialogical, cultural, historical, systemic,

anthropological and more-than-human epistemological approaches, the research team consolidated a common sphere of member-identifying visual representations. The team expanded their visual knowledge (Lima, 2014) and, by working with images and symbols, adopted visual metaphorical practices and shaped a commonplace for communicating messages about the meaning of sustainability in the centre.

A web banner is an image-based profiling element for a website. As an image, a web banner is an artefact depicting visual perception. The purpose of creating this web banner was to a) identify epistemological commonplaces for the new research team and b) create a website for the research centre established to study childhood education, play and learning and leadership within a sustainability framework.

This article's goal is to demonstrate how visual forms, elements, symbols and metaphors helped the research team articulate epistemological commonplaces and commonalities. It sheds light on metaphors that were crucial to creating the web banner and shows how metaphorical thinking was realised visually with examples.

The article contains text and visual elements from the web project. In the following sections, we first present an outline of the context in which the web banner was created. The team's background and critical events led the team to consider visibility seriously. Next, the framework of the work is explained. Finally, we outline metaphors that were productive for identifying commonalities.

## 2 Background

KINDknow's main objective is to explore how staff, children and families can cohabit as social, ecological citizens by understanding the effects of local and global conditions on kindergarten practices. KINDknow generates knowledge that is locally sensitive and internationally relevant. Through the use of participatory design, the research centre aims to empower kindergarten teachers and children as actors in the field; enhance synergies between academics, kindergartens and communities; and reconstruct the multi-voiced, complex worlds of practice(s). With external funding of 25 million NKR from the Research Council of Norway, which offers unique opportunities for early childhood educational research, and additional local funding from three universities and two municipalities, KINDknow aims to engage in high-quality, relevant and committed research by nurturing a creative, inclusive and achievement-oriented community of researchers based on trust, ethics and open communication. The centre's core goals are advancing educational understanding of sustainability

and diversity by considering how kindergartens face contemporary challenges and changes in societies and ecological conditions. Its main goals are greatly influenced by UN's 2030 Agenda, especially the following passage:

By 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.

UNITED NATIONS 2015, p. 17

Within interdisciplinary teams, researchers easily overcome challenges related to key concepts and texts. Visual elements, along with key concepts and ideas, support communication, enrich one's understanding of research and are useful for establishing a common transdisciplinary ground and visions for a research team. Visual elements help focus and remind researchers of the relationship between epistemology and metaphorical communication, in which a concept or a phrase is applied to something to which it is not directly applicable in order to suggest similarity or to pave the way for further meaning-making and implications.

The creation of a webpage is synonymous with the idea of public sharing. The research team at the centre used the process of creating a web banner as an opportunity to articulate their ethos and theories via visual representations and metaphors. Very early in the process, it became obvious that creating a web banner warranted theoretical work, rhetorical work and searching for commonplaces and commonalities of representations.

The research centre opened for 'new beginnings' and 'lines of becoming' (Ingold, 2011). As members of the research team, we sought visual inspiration, symbols and metaphors in environmental perspectives and ecological and dialogical approaches. We found common ground in Tim Ingold's ecological approaches and were inspired by the metaphors of a spider's web (Ingold, 2008) and a compass on a moving weather map, called a weather world (Ingold, 2010). Since metaphors are built into our culture's conceptual system (Lakoff & Johnsen, 1980), we used visualisations from these inspirations, keeping in mind the metaphors we wanted to research. Ingold based his theories on the ethnography of hunters and gatherers, who lived hundreds of years ago. Nonetheless, he argued that we must not only consider their worldviews seriously but also learn from them. He visualised a world in which everyone and everything consists of interwoven or interconnected linkages, thus laying the foundation of

entanglement (Ingold, 2007). Entanglement refers to the processes or lines of becoming and conditions of possibility. Theorists have offered several constructs for visualising the nature of entanglement, including Alan Rayner's fungal mycelium (1997), Deleuze and Guattari's rhizome (2004) and Ingold's spider web (2008). Entanglement as a notion helps theorise and articulate the complexity and heterogeneity of the world in which we live.

In KINDknow, researchers are grouped into 10 work teams, targeting the following themes: sustainable leadership and knowledge creation, eco-citizens and conditioning, children's exploration, diverse families, generations and belonging, equity through food and meals, multilingual mathematics, place, heritage and local and indigenous language practices. All the teams engage in systemic dialogical workshops, visual pedagogies and participatory methodologies.

The researchers across various teams were already in agreement in terms of their understanding, engagement, values and worldviews, which were aligned with the UN 2030 Agenda for Sustainable Development and Sustainable Development Goals. In the process of creating a web banner, the team aimed to consolidate the centre's goals and communicate its values, worldviews and epistemological approaches. Adopting a reluctant, critical view of the notion of 'development', the researchers agreed that sustainable futures and sustainability better reflected the centre's values and pursued the transformative changes needed for sustainability. The team members had already agreed on a participatory methodology and the need to reconnect humans beings with nature, local heritage and diverse spaces involving children, families and staff. Time, local areas and spaces had been identified as crucial dynamic concepts.

With this context, the team of researchers started working with metaphors and images to create a visual element and a web banner for KINDknow. The banner was co-composed through reflections on the common epistemological ground among researchers, with the help of a visual designer. We chose visual elements that were specifically of interest to children and reflected their symbolic, material, diverse worlds and their possible sustainable futures. Our common vision was 'sustainable futures – research on behalf of children'.

### 3 Creating a Web Banner – The Process Story

Visual communication allows viewers to associate certain symbols and characteristics with meaning, thus drawing attention to them and promoting their understanding. Defining the visual communication was an important step in

establishing KINDknow, and creating a web banner was one of the many profiling tasks.

1. As a first step, the centre's director collaborated with a web designer and outlined the communication strategy, the target groups and the goals for a sustainable future, with the help of elements from an earlier project on the purpose of children's activities. The director used the metaphor of 'the web of life', activity symbols and open circles to express new possibilities. Figure 2 below shows the web designer's first draft.



FIGURE 2 First draft of the web banner

2. The director presented the first draft to the team members, who then critically evaluated it. Some members wondered if the boy placed in the centre of the image was far out in space, while some observed that the web banner seemed more appropriate for a natural science centre. Some questioned why a white boy was depicted as an astronaut in centre of the banner was too much of an anthropocentric approach, while others were curious about the use of a spaceship. Next, the team discussed how they could improve the visuals and find symbols for common values and research activities. The ideas of 'web' and 'active children' were identified as commonplaces. Other suggestions included 'weather (not a sunny day) map' and 'food'. Another commonplace was very clearly articulated: the team decided not to separate human beings and the environment. Instead, they decided to integrate nature and culture and to treat the web banner as a visualisation of a constructed landscape reflecting the research centre.
3. The team agreed on retaining open spaces to symbolise beginnings and possibilities. They also conceded to symbolising children as agents in activities, adding symbols of togetherness and replacing human visual elements with lines and dots: a web. A response group was created to discuss metaphors, and the director sought another draft from the web designer.

4. The director worked with the web designer to find weather maps with a dark blue sky, indicating rain and maybe storms. The web designer created visual elements symbolising growth – a root/vegetable – and a fish. A sense of connectedness developed between the webdesigner and the director, as the webdesigner drew on the web board. We interpreted the weather maps and the concept of a human compass as symbols of finding one's path through local and global landscapes. Thus, with the concept of a compass built on human togetherness, and symbolised by a circle, the pedagogical compass was born.
5. The web designer adjusted the colours and shapes, and the director presented the next draft to the response group, which accepted it (See Figure 1).

#### 4 Visual Metaphors – Seeing is Knowing

Metaphors are a symbolic language through which meaning is created. They can be better understood with the help of two rhetorical concepts. The first is *ekphrasis*, which is derived from Greek, and is a rhetorical device that involves a vivid, verbal description of a visual artwork. It could also describe an experience. The word combines the Greek words *out* and *speak* (Tvedt, 2019, pp. 163–172). Second, metaphor is a figure of speech used to describe something by comparing it to something else. This bestows the subject with qualities of something it is unrelated to. The less related the two subjects, the better the metaphor.

Etymologically, *metaphor* is derived from the Greek words *meta* (over/between) and *phèrein* (to carry) (Caprona, 2013, p. 630), which together mean *transfer between*. A metaphor is a type of analogy and one of many figures of speech used to compare two unlike entities (Lakoff & Johnson, 2003). Metaphors often clarify meanings – they are used to express and complement experiential understanding. In visual metaphors, compositional elements like line, shape, texture or colour connect two items (or more) that ordinarily might seem unrelated. Visual metaphors do not reinforce ideas already in the image but remind viewers of the elements absent from the image (Caponigro, 2010).

As part of this project, the research team identified epistemological commonplaces through dialogues on the links between visual elements, symbols, metaphors and theoretical concepts. This resulted in the creation of a web banner and visual elements that captured the essence of the research centre. The teamwork also resulted in heightened awareness of seeing and visibility.



Members articulated their shared understanding of 'seeing as more than knowing'. It is important to add that 'seeing as knowing' is a well-known metaphor grounded in Western concepts and languages on thinking and knowing.

Seeing as a concrete, situated, sensory experience and activity was the first commonplace identified by the team. Seeing is positioned; therefore, the team agreed rather early that the web banner should display great awareness of theories and empirical data as sensorial, philosophical, and articulated (rhetorically) concepts.

## 5 What, Then, Are Visual Metaphors and Symbols?

Coined by Virgil Aldrich (1968), the term 'visual metaphor' was initially used to describe non-scientific content and sculptures. More recently, 'pictorial metaphors' and 'visual metaphors' have come to focus on how pictures are a stepping stone in metaphorical conceptualisations in non-scientific contexts, such as commercial advertisements and editorial cartoons. Even though recent philosophical analyses of the epistemic dimension of images in the sciences seem to go beyond their decorative or pedagogical functions, they pay little attention to the construct of 'visual metaphors' (Baedke & Schöttler, 2017). Visual metaphors have a flexible, exploratory role in supporting communication and guiding research as well as in organising data, modelling and theory formation. The development of cognitive sciences first gave rise to a cognitive view of metaphoric thinking. Although there is a lack of consensus on metaphor theories, numerous studies have examined the concept (Serig, 2006). Cognition cannot exist in the absence of context, relationships, body and emotions. In this article, the notion of metaphor links the research theme, processes, methodology, worldviews, philosophy and scientific substructures. Serig (2006, p. 232) notes that the literature on visual metaphors is pluralistic and sometimes incongruous. However, each position offers arguments towards characterising the phenomenon. While some consider all forms of art to be visual metaphors, others have stricter guidelines for what constitutes a visual (e.g. pictorial) metaphor. Another aspect on which definitions differ is the focus on the creator and the viewer of a visual metaphor.

A symbol can be a mark, sign or a word that indicates, signifies or represents an idea, object, activity or relationship. As metaphors, symbols let people surpass what is known or seen, by connecting otherwise distinct concepts and experiences (Serig, 2006). For this creative process, the research team began by finding and reflecting on metaphors, in order to later find symbols and images that could illustrate commonplaces.



## 6 Finding Symbols and Images to Represent Early Childhood Educational Research and Sustainability

Metaphors helped the research team represent their understanding of early childhood educational research and helped them create frames for a common ground that could be expanded. Social interaction among research team members led to joint fields of attention, which supported interpretations (Roepstorff, 2007). Thus, metaphors can help establish a common group language and identity (Cameron, 2003), with specific metaphors and metaphorical signs synthesised in a larger collage of metaphors. When individuals face challenges in perceiving their surroundings, the imagery of metaphors offers something tangible, gives voice to silent knowledge and creates avenues for multitudinous new interpretations of the collage's subjects.

### 6.1 *'Creation is birth': The Sustainability of Everything*

The team at KINDknow, which is a research centre for early childhood education, could easily relate to the metaphor 'creation is birth'. In other words, the concept of *making* in meaning making can be understood as a relational process wherein one shapes meaning with the knowledge afforded to a person and is, thus, always existing in relationship. Thus, the idea of meaning-making is closely linked to another important concept: change. Words that represent new understandings, transformative learning and new practices such as *meaning making* and *change* emerge naturally from human experiences. They reflect a more metaphorical notion of birth.

Lakoff and Johnsen explain that the birth experience, as well as agricultural growth, grounds the creation concept in the idea of *making*. The research team recognised this grounding in birth metaphors for creation (Lakoff & Johnsen, 2003, p. 57) and foregrounded it, by simultaneously symbolising at least two aspects: the creation of a concrete web banner and creation as new beginnings – the sustainability of everything.

The birth metaphor was crucial to the centre's concept, especially the metaphorical function of the centre being 'born from' a desire for 'the child's best interests'. In Norway, the early educational institution for children aged 1–5 years is *barnehage*, which is officially translated as 'kindergarten' (with reference to Friedrich Fröbel's famous metaphor). The kindergarten metaphor, a children's garden, is understood as a place for growth and activity. These ideas are also reflected in the research centre's name, KINDknow (kindergarten knowledge centre).

The inspiration for the crucial 'web of life' metaphor came from Ingold's theories on human life, the visual of a spider's web and anthropological and

pedagogical reflections. Ingold's relational anthropology served as the central inspiration for several metaphors and visual elements. In30

Ingold's universe, 'to human' is a verb (Ingold, 2008, 2011, 2018). Being human is a never-ending, formative process, and living connotes movement. He surpasses the human – animal and culture – nature (biology) divide via a nature – culture systemic worldview. Like cultural relational inspirations (e.g. philosophy of dialogism) and central epistemological underpinnings in research, Ingold (2011, 2018) shows, through anthropological descriptive reflections, that knowledge is not simply transmitted or ready-made. It is continually regenerated through guided rediscovery within the social context of interaction between those experienced and those beginning. As the research centre deals with the often contested and confusing concept of 'sustainability', which is used variously in political as well as in educational contexts, the team used document analysis and empirical and innovation studies. Ingold (2016) once was asked if he could discuss 'sustainability'. He then asked, '[W]hat more specific do you want?' When the asker gave him list, he remarked, 'So you want me to talk about the sustainability of everything?' Ingold went on to explain that the more he thought about it, the more it seemed that 'sustainability' was everything or nothing – it could not be some things and not others. In other words, 'sustainability' did not have boundaries of inclusion and exclusion. The research team was inspired by his holistic and ecological approach as it aligned with the holistic nature of early childhood education (Ødegaard, 2015).

The team members welcomed the wide sustainability lens. Working with children in the Nordic model implied that everyday life experiences were intertwined with learning, and kindergarten was learning for life, just like school and development. In that sense, the web as a metaphor could be criticised for its regularity. Life tends to be messier, more like the image of the fungi mycelium (or roots of rhizomes), shown in Figure 3 (Worall, 1999)

In botanical terms, a rhizome is a subterranean plant, with a creeping root stalk that spreads laterally in multiple directions and surfaces to produce a clone of the original plant in an unexpected location (Macness, Bell & Funes, 2016). The rhizome has both positive and negative interpretations. It may be seen as weed growing in the wrong place, and it has also been used to describe fast-growing concepts or communities, such as the Internet. Deleuze and Guattari (2004) used the concept of the rhizome to explore ways of thinking that challenge hierarchies and decentralise authority (Manley, 2018).

For the research team at KINDknow, the rhizome symbolised the *fluid character of life*. The lines in the web banner, the big and small commonplaces of



FIGURE 3 Rhizomatic growth

open circles and circles filled with focus points; children's activities; food; and a rhizomatic root, depict the web of life.

## 6.2 *Researcher's Compass – Wayfarer's Compass*

In creating the web banner, the team played with the compass metaphor and found it be a useful, guiding artefact. Compasses do not reveal one's location.



FIGURE 4 Researcher and pedagogical wayfarer's compass

They tell the user the direction they are facing and the other directions available. These could be North, West, South, East or somewhere in between. While the compass will point to a direction, those who want to use it to reach a goal or gain a new experience will need more information, such as a map (or in this case, project description and a strategy document). Sailors in the open sea also need a sea map and a nautical chart for navigation. One needs imagination and knowledge to know what to anticipate if one uses the compass to head north. Further, it is important to know that when compasses point 'north', they actually point to the magnetic north, which is quite far from the actual north. Consequently, one cannot totally trust compasses. Those who want to head north must make many adjustments: sail or fly? They must account for places they did not plan end up at.

Using a compass opens one to new experiences and to using one's imagination. While it points to a direction, it never tells the user what choices to make when faced with an obstacle. One needs to manoeuvre to stay on track and use a map for making other decisions. In the open sea, or in the deep ocean, metaphorically speaking, one needs a compass to manoeuvre. In leadership scenarios, such as running a research centre, one need directions or goals, and one must gauge the landscape and act according to events.

### 6.3 *Weather Landscapes – Weather Worlds*

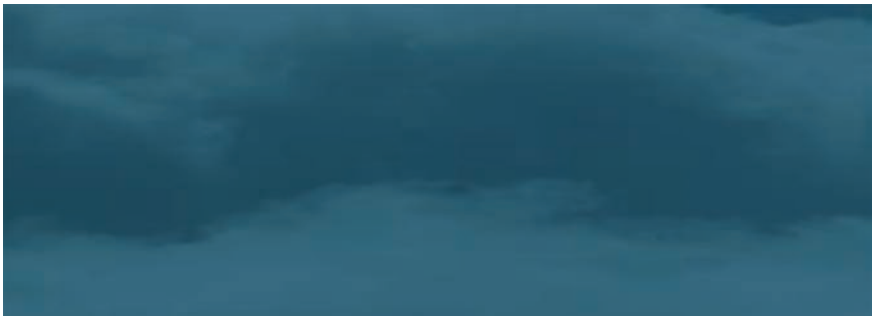


FIGURE 5 Weather landscape

While creating the web banner, the research team sought a more dynamic image and used the weather map for inspiration. Very few phenomena are more dynamic than weather. Weather is ever-changing, just like the world we live in (Schilderman, 2014, p. 47).

Weather represents a transient medium and a significant factor that influences how organisms experience the environment and inhabit places (Ingold, 2006, 2010). Our experience of the weather is rooted in moods and motivation;

*it is the very temperament of our being and governs how we make our way in the world* (Ingold, 2010, p. 122).

Climate is the long-term average of weather conditions. The term global climate refers to the planet's climate, averaging all regional differences. Climate change and its impacts on weather events affect people, animals and many types of planetary ecosystems (National Centers for Environmental Information; NCEI, 2018).

Today, the global climate is changing faster than ever, resulting in more extreme weather events, damage to biodiversity, melting ice caps and rising sea levels (IPCC, 2018). These changes can no longer be ignored, and they call for a serious rethinking of our actions and priorities, from a less human-centric worldview (Rooney, 2018). When talking about the 'environment', it is important to include all living organisms, beyond humans and animals. Human beings should consider themselves as part of the plant, and not separate from it (Ingold, 2011; Instone & Taylor, 2015, p. 139). Our actions shape the world, and elements of the world shape our actions (Myrstad, 2018). We must find alternatives to articulate these mutual processes. The conceptualisation of child–weather relationships may be one way to understand humans' interconnections with the earth (Roony, 2018).

#### 6.4 *Lines of Movement*

Finding alternatives is not a straightforward process of moving from point to point, from A to B. Metaphorically, the interweaving lines in different directions highlight ecological complexity. The lines have no inside or outside, no



FIGURE 6 Systems – lines – activities – movement

boundary separating them from the environment (Ingold, 2007). This leads us to imagine our relationships with the world as open ended.

Descriptively, the interweaving lines can be considered trails made by wayfarers. Ingold (2007) states that all living organisms are wayfarers: birds, animals, fishes, insects, pedagogues, children, parents, families, researchers, etc. By navigating the earth, every wayfarer leaves a trail. These trails or lines may be visible or invisible; on the ground, in the air or even in the sea. Whenever wayfarers meet, trails become entwined and knotted (Ingold, 2011, pp. 148–149). When they move, new relationships appear while others disappear. New encounters may prompt the wayfarer to rest, change direction or head back home. Along the way, events occur, observations are made and life unfolds (Ingold, 2010b, p. 126). Moving around can, thus, be understood as perceiving and responding to the environment.

Movement thus represent an answer to the world, necessitating direct engagement with the elements of the environment (Ingold, 2013). The contours of the land – uphill, downhill, roughness – are understood through movement, touch and action. Through body and movement, human beings integrate their knowledge of the world. Simultaneously, moving bodies shape the environment. Given this context, it is worthwhile to ask what tracks do children make in the kindergarten? Are they given opportunities to participate in their life and create their own paths, or are goals already pre-defined? Do we see their small paths in struggling to reach our goals?

From the viewpoint of sustainability, the lines remind us that our presence on earth leaves traces. What kind of traces do we want to leave in our research? Such questions have put travel and emissions on the centre's agenda. We have initiated processes to define a policy for climate-friendly ways of organising, conducting and meriting research.

## 7 Summing Up

In this article, we demonstrated how visual forms, elements, symbols and metaphors were productive for articulating epistemological commonplaces and commonalities among a team of researchers in a newly established research centre in Norway. We highlighted the main metaphors identified while creating a web banner and describe how we realised metaphorical thinking.

Metaphors were used to represent research into early childhood education and helped the research team create frames for a common ground that could be expanded. We found common ground in Ingold's ecological approaches and

the visual metaphors of a spider's web (Ingold, 2008) and a compass on a moving weather map, called a *weather world* (Ingold, 2010). Unlike linguistic metaphors, visual metaphors are actual images and are characterised by their double extensionality (Baedke & Schöttler, 2017). As a team of researchers working with images, we faced challenges in articulating the epistemological underpinnings of our research and in creating a common ground for visual communication. However, this process helped us critique and question the taken-for-granted images (e.g. a boy in the centre of the banner) and what they symbolise and find alternative symbols and representations. As a result, the team very clearly articulated a commonplace where humans and the environment overlap.

As a collaborative research team, we were unaware of the extent of our shared knowledge and epistemological underpinnings. The use of metaphors, visual elements and symbolic language contributed constructively to developing our research team. Linguistic metaphors are mediated and, therefore, fundamentally communicative. Similarly, the process of creating a web banner and communicating via visual metaphors was valuable and enriching because it allowed us researchers to articulate the philosophical underpinnings and the theory-constitutive functions that guide our research.

## References

- Aldrich, V.C. (1968). Visual metaphor. *Journal of Aesthetic Education*, 2, 73–86.
- Baedke, J., & Schöttler, T. (2017). Visual metaphor in the sciences: The case of epigenetic landscape images. *Journal for General Philosophy of Science*, 48(2), 173–194.
- Cameron, L. (2003). *Metaphor in educational discourse*. London: YHT Ltd.
- Caponigro, J.P. (2010). Using visual metaphors. In J.P. Caponigro (Ed.), *Illuminating creativity*. Location: Publisher.
- Caprona, Y. (2013). *Norsk etymologisk ordbok*. Estland: Kagge Forlag.
- Deleuze, G., & Guattari, F. (2004). *A thousand plateaus*. (B. Massumi, Trans.). London: Continuum.
- Grasseni, C. (2004). Video and ethnographic knowledge: Skilled vision and the practice of breeding. In Pink, A.I. Alfonso, & L. Kùrti (Eds.), *Working images* (pp. 15–30). London: Routledge.
- Ingold, T. (2006). Rethinking the animate, re-animating thought. *Ethnos*, 71(1), 9–20. doi: 10.1080/00141840600603111.
- Ingold, T. (2007). *Lines: A brief history*. London: Routledge.
- Ingold, T. (2008). When ANT meets SPIDER: Social theory for arthropods. In C. Knappe & L.



- Ingold, T. (2010a). Bringing things to life: Creative entanglements in a world of materiality. Working Paper 15. University of Aberdeen.
- Ingold, T. (2010b). Footprints through the weather-world: Walking, breathing, knowing. *Journal of the Royal Anthropological Institute*, 16, 121–139.
- Ingold, T. (2011). *Being alive. Essays on movement, knowledge, and description*. New York: Routledge.
- Ingold, T. (2013). *Making: Anthropology, archaeology, art, and architecture*. New York: Routledge.
- Ingold, T. (2016). *The Sustainability of Everything*. Talk at The Centre for Human Ecology – The Pearce Institute Govan, Glasgow. 11.09.2016.
- Ingold, T. (2018). *Anthropology – why it matters*. Oxford: Polity Press.
- Instone, L., & Taylor, A. (2015). Thinking about inheritance through the figure of the Anthropocene, from the antipodes and in the presence of others. *Environmental Humanities*, 7(1), 133–150. doi: <http://dx.doi.org/10.1215/22011919-3616371>.
- IPCC (2018). Special report. Global Warming of 1.5 °C. Retrieved from <https://www.ipcc.ch/sr15/>.
- Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. London: University of Chicago Press.
- Lima, M. (2014). *Book of trees. Visualizing branches of knowledge*. New York: Princeton Architectural Press.
- Malafouris (Eds.), *Material agency: Towards a non-anthropocentric approach* (pp. 209–215). New York: Springer.
- Myrstad, A. (2018). Å bebo verden ved å bevege seg gjennom den [To inhabit the world, through moving through it]. In A. Myrstad, T. Sverdrup, & M. B. Helgesen (Eds.), *Barn skaper sted – sted skaper barn [Children create place – Place creates children]* (pp. 29–44). Bergen: Fagbokforlaget.
- Myrstad, A., & Sverdrup, T. (2019). De yngste barna som vegfarer i barnnehagen. [The youngest children as wayfarers]. *Nordisk barnehageforskning*, 18 (special issue), 1–12.
- National Ocean Service (2018). What is the difference between weather and climate? [https://oceanservice.noaa.gov/facts/weather\\_climate.html](https://oceanservice.noaa.gov/facts/weather_climate.html).
- Ødegaard, E.E. (2015). 'Glocality' in play: Efforts and dilemmas in changing the model of the teacher for the Norwegian national framework for kindergartens. *Policy Futures in Education*, 13(8), 42–59.
- Rayner, A.D.M (1997). *Degrees of Freedom*. London: Academy Editions.
- Roepstorff, A. (2007). Navigating the brainscape: When knowing becomes seeing. In C. Grasseni (Ed.), *Skilled vision. Between apprenticeship and standard*. New York: Berghahn Books.
- Rooney, T. (2018). Weather worlding: Learning with the elements in early childhood. *Environmental Education Research*, 24(1), 1–12.

- Serig, D. (2006). A Conceptual structure of visual metaphor. *Studies in Art Education A Journal of Issues and Research*, 47(3), 229–247.
- Tvedt, I.L. (2019). *Marianegropen*. Oslo: Gyldendal.
- Worrall J.J. (1999). Brief introduction to fungi. In J.J. Worrall (Ed.), *Structure and dynamics of fungal populations. Population and Community Biology Series* (25th vol.). Dordrecht: Springer.